

Submission to National Transport Commission

Barriers to the safe use of personal mobility devices

Submission by Zipidi Micromobility Insurance & Solutions

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Introduction

About Zipidi

Zipidi is the micromobility insurance brand of Localift, a company founded by Krystyna Weston and Stephen Coulter. We are former senior financial services executives who have worked in transport and mobility, around the world, since 2014.

Initially, we worked with the world's leading motoring associations on new mobility trends and opportunities.

We focussed on shared mobility with an emphasis on apps to enable people to share journeys with other people they trust, by any mode of transport. Carpooling is the most obvious use case. Our work led us to develop solutions which could be part of any city's transit and MaaS solutions, delivering trust and single payments for any end-to-end journey by any mode of transport, shared or solo - including micromobility.

Our journey has seen us spend significant time working in Australia, New Zealand, Europe, Asia and North America, including nearly a year in Mexico City. We have dealt with all modes of transport and worked with cities, transport operators, smart transport payment systems and share scooter/bike operators.

We have ridden and experienced scooters around the world in different regulatory and operating environments - we have first-hand experience across four continents.

We bring a different perspective to micromobility as we see it **as part of the solution to first/last mile** and short journeys - rather than being a solution in itself.

We see owned and shared micromobility as an important part of the first/last mile/short journey solution. This has led us to focus on removing barriers to micromobility and to help governments make the regulatory changes to facilitate the active use of micromobility.

Zipidi believes government must regulate micromobility in totality i.e. regulate the use of own your own devices as well as the use of shared devices. Owned and shared will coexist as they do for other modes of transport. There will also be some important differences in users which need to be considered. We discuss these later in our submission.

Zipidi believes the draft NTC report focuses on traditional transport control points of the 20th century:

- Areas of Operation (footpaths, shared paths, etc)
- Speed limits
- Hardware Design
- Minimum User Requirements, e.g. Age, Helmets, etc

Zipidi believes two more progressive areas also need to be included:

- Insurance
- Technology (PMD's are tech products)

Insurance

Compulsory insurance has been a requirement for road vehicles for many decades. It protects third parties in the event of crashes and government health care systems from additional costs. It gives governments the confidence to allow vehicles and their drivers' access to roadways and other infrastructure.

Insurance is another enforcement tool as benefits of insurance are only available for legal vehicles ridden in a legal manner.

As electric scooters are illegal to use in public places throughout most of Australia, tens of thousands of owners are currently riding very exposed with no access to insurance as you can't insure an illegal activity.

Neither governments nor shared micromobility operators have expertise or experience in micromobility insurance. This has seen some of the early city specified insurance models flawed, failing to deliver the best outcomes, for cities, riders or operators.

Zipidi believes the right combination of insurance is a critical consideration in managing risks associated with any form of mobility. The right insurance will also act as an enabler for progressive regulatory change.

Technology

Personal Mobility devices are technology products. Their rapid growth since 2017 has been driven by the App economy enabling easy sharing, tracking and control via any smartphone.

Many PMD's are Internet of Things (IoT) enabled, having IoT devices, onboard computers (OBC's) and sophisticated engine management units (EMU's). The vehicles are high-tech disguised in a low-tech form factor - they still largely look like kick scooters! These three technology components are inexpensive and can provide enhanced control and safety.

Zipidi's Industry Leadership

Zipidi is an active leader on industry task forces and bodies including:

- Electric Scooter Advisory Group, Transport for NSW
- Member of the Australian Transport Innovation Group
- Transport Adviser to a Member of the NSW Parliament
- Urban Mobility Task Force, Smart Cities Council of Australia and NZ
- Convenor of the Asia Pacific Micromobility Alliance
 - An Asia Pacific industry alliance comprising the major share scooter operators, scooter manufacturers and retailers. There are over 12 industry members including Lime, Bird, Neuron, Ride, Beam, Flamingo, Scooter Hut, Panmi (Xiaomi/Segway) and Zipidi.
- Provider of technical information and advice on micromobility to various policy advisors

Feedback not Covered by Questions 1 to 8

Are there other related issues you consider relevant?

Is the Definition of the Problem Accurate?

No.

Transport, now more often called mobility, is moving from being vehicle-centric to person-centric. The sharing economy has made ownership unnecessary to have access to any mode of transport. **The problems and solutions relate to people and their mobility needs.** These need to be overlaid with the fundamental problems cities and governments are facing - traffic, pollution and use of public space.

The fundamental problem is the massive overuse of cars and other private vehicles for over 80% of journeys, irrespective of distance.

The problem micromobility and PMD's are solving, is short and first/last mile journeys. Journeys under 5km represent around 30% of all journeys and 5-10km, another 20%+.

Since mass transit is normally along major spines, it is often not well suited to shorter journeys. This has resulted in cars being the dominant vehicle of choice for shorter journeys as well as longer ones.

The problem to be solved is:

“What is the best way to “advance beyond cars” to deliver safe, sustainable and convenient short and first/last mile journeys for citizens, cities and their communities?”

This should be the context of the NTC report. In this context, what role and regulatory environment can support micromobility in creating safe and sustainable solutions for citizens and the communities to whom they belong.

“The policy objective of this project is to provide a nationally consistent approach to regulating and supporting PMDs/Micromobility that enables safe, sustainable mobility and independence for all road users.”

Are Bikes Part of Micromobility and PMD's?

It is recognised globally that bikes are part of micromobility and are PMD's by another name. The Australian Road Rule 244A could equally describe a bike by substituting “bike” for “scooter” and changing “the user pushing one foot against the ground” to “the user pushing their foot against a pedal”.

It is unclear why such a distinction needs to be made for bikes compared to other PMD's. The primary difference is their longevity and acceptance as a means of transport. There is no rationale as to why they should not be speed restricted, age-restricted and have additional regulations apply to them as are proposed for scooters and other PMD's.

A simple “first step” approach would be to treat PMD's in the same way bikes are treated and regulate them in the same manner. This would be a simple way to control and enforce their rapid proliferation.

If the distinction is a motor, the same regulations should apply to eBikes.

Risk of Conflict with Other Road Users (page 14)

This section of the NTC report avoids addressing the fundamental conflict already occurring - cars and other heavy vehicles.

While cars and road rules have changed to make cars safer for their occupants, the death and road toll of pedestrians and cyclists has grown significantly - in Australia and around the world.

Cars are a fundamental threat to all other road users. Governments have designed cities around cars - not people - making roads straighter, smoother, more dedicated with larger more rounded corners. This allows drivers to drive faster with less attention required, resulting in faster, higher impact crashes with pedestrians, cyclists and other road users.

Curb space has been taken from pedestrians and other users, squeezing them closer together, resulting in a higher risk of impact on footpaths and shared pathways.

Introducing PMD's to roadways will result in **more deaths and injuries caused by cars** - not by micromobility or electric scooters.

The fundamental solution is to create protected mobility lanes for PMD's (including bikes) which separate PMD's from cars and pedestrians. This is a medium-term infrastructure project and needs to be set out as the vision - otherwise, it will never occur.

In the meantime, practical measures need to be taken to protect PMD users and pedestrians.

- Allowing PMD's access to off-road paths
- Reallocating roadside parking to mobility lanes with basic/temporary physical dividers - not just a coat of paint - affordable and easily implementable solutions already exist to do this.

Use Cases for PMD's/Micromobility

For PMD's to be a successful short journey/first/last mile solution and remove cars, they need to handle common use cases:

- Commute to/from transit hub
- End-to-end short journey
- Local shopping
- Transport to/from school
- Local deliveries/micro logistics

These use cases - especially the last two, require different types of PMD's.

School journeys often require parental involvement and may include having a child/children as passengers. Just as a parent can use a child seat on a bike, they should be able to transport young children on purpose-built PMD's. These already exist and are commonly used in other parts of the world - a recent trip to Singapore saw a wide variety of scooters designed for this activity. [The Fiido](#) is a common version. Other variations exist from booster stands to add-on child seats and handlebars. The www.falconpev.com.sg site has some examples as does [Mobot](#).

This is a very common use case with around 25% of morning peak hour traffic being school-related.

Regulations should permit electric scooters designed for parents to transport children safely.

The micologicistic industry is growing rapidly driven by eCommerce and food delivery. There are many more local deliveries at all times of the day. These are still largely carried out by cars, vans, trucks and in some cases motorbikes and electric bikes.

Electric scooters, electric bikes and electric cargo bikes are being actively used around the world to replace deliveries by heavy vehicles. Regulations need to allow for this.

The PMD size limits, referenced in Table 2, are driven by public transit storage and access dimensions. This is fine for scooters and other PMD's taken on public transport, but should not prevent larger vehicles being used for other local journeys.

- Trailers are being designed to work with electric scooters to enable shopping and deliveries. These make the vehicle longer - but are no different to trailers being attached to normal bikes to tow children or goods.



- Two and three-wheel cargo bikes are being designed for all types of deliveries - some major postal services and courier companies like Deutsche Post and DHL are using these instead of cars.



Table 2 - Proposed Regulatory Framework for PMD's (page 18)

As discussed above we recommend:

1. Need to cater for more than one person
2. Cargo scooters, bikes and micro logistic delivery vehicles need to be approved and allow larger dimensions for local journey vehicles which will not be taken on public transport.

The definition should also allow for multiple motors rather than just one - more powerful PMD's are required in hilly areas and for heavier riders. Multiple motors are often used to provide extra power/torque. In the same way, cars are not restricted by motor size but by the speed at which they travel, so too should PMDs.

The definition of PMD's should be extended to also encompass manually/human-powered vehicles.

Are there other related issues you consider relevant?

Yes, insurance, owned and shared PMD's and technology.

Insurance

Zipidi is a micromobility insurance specialist. We develop insurance policies for cities, shared mobility operators, companies, communities and individuals. Insurance can include Public Liability, Third Party, Personal Accident, Asset Protection and Cyber.

Just as there is compulsory third party for road vehicles, we believe basic compulsory insurance for PMD/micromobility users will mitigate risks, give cities a level of comfort and ensure crashes which do occur will not be an unnecessary financial burden on public health and welfare services.

We have prepared a number of documents describing these issues from a City, Operator and Rider perspective which can be accessed at the following links:

- [Zipidi for Operators](#)
- [Zipidi for Cities](#)
- [Zipidi for People on the Move](#)

The insurance products described are available now for implementation in Australia.

Owned & Shared PMD's

Much of the public debate has been driven by the rapid growth of share scooter operators such as Lime, Neuron, Beam and Ride. As with all forms of mobility, there will ultimately be many more privately owned scooters/PMD's than shared ones.

While common operating environments/regulations should apply, there are some fundamental differences which need to be taken into account:

- Owner riders will overall be better riders due to their experience.
 - 33% of scooter accidents happen on the first 3 rides and 67% in the first 10. Share scooter operators have a much higher incidence of novice riders.
 - Owner riders often progress from being regular share scooter riders and rapidly become very competent
- Owner riders have made a significant investment and ride in a manner to protect their vehicle
- Owner riders take their vehicles to their homes/offices - they are not left randomly on streets
- Owner riders research scooters more and will sometimes seek out more powerful scooters to help their mobility needs - sometimes not meeting the legal regulations for PMD's
- Some owners seek cheap scooters online which can be illegal and contain batteries or chargers which do not meet Australian standards and present fire risks.

On the other hand share scooter riders:

- Are less experienced
- Maybe more reckless riders
- Leave scooters on streets, sometimes inconveniently placed
- Are more likely to have crashes

The benefit of share scooters is operators ensure their devices have inbuilt GPS, onboard computers and engine management units which can apply greater levels of control to riders. They can easily be speed limited and geofences used for speed zones and parking.

The current South Australian regulations only apply to share scooters and make privately owned scooters illegal to use publicly. We believe the Queensland model is better with a common overall framework for any PMD. Share operators and cities can then decide if more restrictions/regulations are required for commercially shared scooters.

Technology

In the 21st century technology should be a much bigger part of the regulations - especially as PMDs are technology products.

There are a number of technology aspects:

- Hardware
- Internet of Things Enablement
- Engine Management Unit/Onboard Computer
- Battery Management Systems

Shared scooters and bikes have all these technologies built-in, enabling their operators to control and monitor speed, parking, rider behaviour, locations and more. In addition, they can optimise engine use for conditions including climate and riding styles/conditions. Vehicle maintenance can be predicted/scheduled and scooters with faulty elements automatically disabled for hire.

Working with cities, operators can specify geofences to control speed, parking and access.

Shared operator scooters are very smart technology devices, able to help cities manage mobility better.

Own your own scooters do not currently have the same degree of technology as shared scooters.

There would be some advantages if privately owned scooters had the technology of shared scooters. It is not expensive and could be integrated at production for less than \$100. The same technology could be integrated into electric bikes.

Introducing such technology to privately owned scooters could be done over a couple of years - the lifespan of cheaper scooters. Some better privately owned scooters already have this technology. Singapore has taken a similar approach with requiring new scooters to have better quality chargers and batteries since July 2019 and all scooters by July 2020. This was announced in 2018 to enable a transition period.

Technology Regulations for Consideration

1. A “light registration” approach be taken with PMD’s.
 - a. Requiring registration can enforce regulated standards, design and safety criteria for electric scooters.
 - b. It will be a means to eradicate illegal scooters and dangerous electrical components.
 - c. It could be coupled with a compulsory third party insurance
 - d. It will enable enforcement by Police or other authorised people
 - e. Each scooter and their owner will be readily identifiable

Zipidi and partners have developed an easily deployable solution for PMD registration leveraging patented technology developed with Australia's CSIRO. It can be implemented within months and can leverage the existing regulatory environment for PMD design administered by the Federal Government and leverage any State-based requirements. This is a low-cost process which will be highly effective in controlling quality standards and safety for PMD's in Australia.

The process we have developed is our Intellectual Property and we are not prepared to share it in a public document. We are happy to brief NTC executives privately.

2. Consider an Australian "Mobility Cloud"

Every share scooter and bike operator is implementing cloud-based systems to manage their devices, users and the various rules of each city. These can include geofences for speed, parking, access, etc. There is much duplication in this process and it only applies to shared scooters.

If Australia or a city had its own "mobility cloud" it would allow many services to be delivered to **all PMD users whether shared or privately owned:**

- City set geofences could be commonly used/leveraged by all operators and users via a common API
- Cities would have access to data from all users for real-time monitoring, alerts and also for transit planning
- Geofences could be used to manage speed, parking, access areas and more
- Mobility behaviour could be integrated into mass transit with incentives for linkages, e.g. transit benefits for those using PMD's to get to and from transit
- Global standards like MDS to ensure interoperability and the ability to leverage new features developed anywhere in the world
- Emergency management/alerts if events occurred - traffic, natural disasters, fires, etc
- Privately owned user trip data can be shared on an opt-in basis, for additional benefits, e.g. preferred services, good rider insurance bonuses, public transport credits, etc

Zipidi and partners have developed a readily deployable solution for a mobility cloud which can apply to any electric vehicle - scooters, bikes, cargo bikes, electric mopeds, golf carts, etc.. The technology is available now and can be implemented within months and linked to any shared mobility operator by API.

The service we have partnered with is our Intellectual Property and we are not prepared to share it in a public document. We are happy to brief NTC executives privately.

Question 1

Are the requirements in the proposed regulatory framework appropriate? Are there any requirements that should be removed, included or modified?

Please provide a rationale to support your position.

As stated previously we recommend:

- I. It should allow for multiple motors and also non-motorised PMD's
- II. It should allow multiple riders on approved PMD's - specifically children
- III. Larger dimensions should be allowed for PMDs not permitted on public transit, e.g. micro logistics and multi-rider vehicles

See section on "Use Cases for Micromobility" for more information.

Question 2

Is 60kg a suitable maximum weight for a PMD? If not, what is a more suitable weight and what other factors should be considered? Please provide a rationale to support your position.

Yes. We think 60kg should cover most use cases.

If heavier devices emerge they should be able to apply for an exemption. Such an exemption may have additional restrictions, e.g. not allowed on footpaths, shared pathways.

Question 3

Should children under the age of 16 years old continue to be permitted to use a motorised scooter incapable of travelling more than 10km/h on level ground on roads and paths? Or should they be able to use any device that complies with the proposed PMD framework? (see Appendix A). Please provide a rationale to support your position

We think children will be more competent riders than many adults. Kick scooters have been very popular in the last decade and Australian school-age children will rapidly adopt PMD's as soon as they are eligible to use them. If children can use eBikes why should the age be different? The eBike age currently varies around Australia from 12 to 16. We recommend children should be able to ride eScooters from the age of 12.

Question 4

Do you agree with the criteria selected to assess the options? Are there any key impacts not covered by these criteria?

Yes, but more attention needs to be paid to cars and heavy vehicle regarding road sharing.

Question 5

When considering the safety risk assessment, access and amenity impacts, broader economic impacts, as well as compliance and enforcement impacts; has the impact analysis sufficiently considered all relevant variables and available evidence? What other factors could be included in the analysis? Please provide any additional evidence. (See Appendix E - Impact Analysis).

We think the criteria are acceptable.

Question 6

What do you believe is the most appropriate road infrastructure for PMDs to access: footpaths, separated paths, bicycle paths and/or roads? Please provide a rationale to support your position.

We believe the long term solution is protected mobility lanes for all bikes and PMD's which separate them from pedestrians and from cars and other heavy vehicles.

We believe in the transitional years, all paths and roadways should be available for PMD's and local governments be provided with a standard "toolkit" to limit use at a local level.

There are far too many variations from LGA to LGA to have a broad-brush solution applied to every LGA by a Federal or State body.

Elements of the toolkit for LGA's to apply would include:

- Tools to ban PMD's on certain footpaths (An alternative could be to ban PMD's on all footpaths but allow any Local Government to designate any footpath a "shared path" thereby enabling PMD use.
- Tools to apply local speed limits in specific areas.
- Tools to indicate designated parking areas.

Question 7

What is an appropriate and safe maximum speed that PMDs should be permitted to travel across the various infrastructure:

- pedestrian areas,
- bicycle areas, and
- roads?

Please provide a rationale to support your position

Zipidi believes the appropriate speed limits should be:

- 15kmh on footpaths and shared pathways
- 25kmh on separated paths, bicycle paths, local roads and roads

As with question 6, we believe State and local governments are better placed to regulate “no go” area and other speed limits necessary due to local conditions:

- Banned roads, footpaths
- Slower speed areas
- Walk with PMD areas

Our rationale for the 15kmh and 25kmh speed limits is:

- The 15kmh speed is a safe speed on footpaths which is not too much faster than a slow walker and impact at the speed differential is unlikely to cause serious injury or damage.
 - Based on Wramborg’s model on page 44 of the NTC report, a collision with a 15kmh speed differential will have little chance of serious injury or damage
- 15kmh will be a small speed variation to bicycles which are on the same infrastructure.
 - Based on the NTC report on page 48, the average cycling speed on footpaths and shared paths is between 18kmh and 30kmh. The NTC report goes on to say riders self regulate speed to accommodate pedestrians as necessary.
- It is our experience from riding hundreds of kilometres on footpaths in Australia and around the world that riders self regulate and our average speed in these conditions is between 10 and 15kmh due to road crossings, driveways, trees and other obstacles. So a 10kmh speed is too slow and by allowing 15kmh as a maximum it will allow natural riding speeds to be maintained legally. This is supported by the NTC’s own analysis referenced in the draft report.
- A 25kmh speed limit is appropriate on bicycle allowed paths, local roads and roads. It provides the least difference in speed between PMD’s and other vehicles which is an important safety factor. It is in the comfortable cycling speed zone at which scooters will often be travelling. As State Governments accelerate traffic dampening and lowering speed limits, it will also work better with cars. It is understood local roads are moving to 40kmh and preferably 30kmh speed limits nationally.

Question 8

Do you agree with the overall assessment that Option 3, Speed Approach 1 is the option that best balances mobility and safety? If not, which option and speed approach do you prefer? Please provide a rationale to support your position.

Zipidi Supports Option 4, Speed option 1 with the footpath/shared pathway speed at 15kmh, **not** 10kmh. Our justification for this is provided in question 7. Our support is for what we have labelled Option 4a below

Speed Approach 1	Option 1	Option 2	Option 3	Option 4	Option 4a	Option 5
Footpaths		10kmh	10kmh	10kmh	15kmh	
Shared Paths		10kmh	10kmh	10kmh	15kmh	
Separated Footpaths (designated for Bikes)		25kmh	25kmh	25kmh	25kmh	25kmh
Bicycle Paths		25kmh	25kmh	25kmh	25kmh	25kmh
Local Roads			25kmh	25kmh	25kmh	25kmh
Roads (except where no bikes)				25kmh	25kmh	25kmh