Submission No 163

INQUIRY INTO USE OF E-SCOOTERS, E-BIKES AND RELATED MOBILITY OPTIONS

Organisation: Lime

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Response of Lime Network Pty Ltd (Lime) to NSW Legislative Council Portfolio Committee No. 6 Inquiry into the use of e-scooters, e-bikes and related mobility options

To the Chair, Hon. Cate Faehrman MLC, Deputy Chair, Hon. Sam Farraway MLC, and Committee Members,

Lime is immensely grateful for the opportunity to contribute to this crucial discussion on the future of micromobility in New South Wales. As Australia's pioneer and leading shared micromobility operator, we bring a wealth of experience and insights to the table. Our vision for NSW is clear: a sustainable, inclusive and accessible micromobility scheme that benefits all residents and visitors. Drawing from our extensive operations across Australia and globally, we have developed recommendations aimed at ensuring New South Wales can offer safe, well-managed and sustainable mobility services for the long term.

Senior representatives of Lime in Australia are able to appear before the Committee during hearings in October or meet with Committee members at their convenience.

Lime would also welcome Committee members to Brisbane to tour our interstate operational facilities and observe local operations across the city.

Response to Terms of Reference:

A. The current and anticipated role of all three levels of government in enabling and encouraging safe electrified active transport options

Standardisation of regulations and expectations, as well as robust infrastructure, are critical to achieving the best mobility, sustainability, safety, and tidiness outcomes for riders and the New South Wales community. All three levels of government have an important role to play in achieving these outcomes:

Commonwealth: To ensure that safe vehicles are deployed across all of Australia and business efficiency, the Commonwealth government needs to have jurisdiction over:

- Importation rules: To ensure that businesses are treated equally and products can be imported efficiently, the importation rules need to be set at the Federal level.
- Hardware certifications: It would be impossible to comply with varying hardware standards for each jurisdiction. The hardware certifications should be based on consensus standards which are applied globally to validate safe products.[1]

Transport for NSW: As with all other transportation modes across the State, Transport for NSW has the most critical role to play in enabling and encouraging safe electrified active transport options. Transport for NSW should have the authority to select qualified operators, provide consistent rules, provide riders with a choice of vehicles, and invest in sufficient infrastructure to ensure safety and tidiness.

- Selecting qualified operators: Transport for NSW has the resources and expertise to run a robust selection process, selecting only operators that can provide safe, reliable, and equitable service for the long run. In addition, it would not make sense for each Council to run a selection process. Not only would it be needlessly costly, it could result in different operators being selected to serve different parts of Sydney. This absurd result would make using micromobility as a means of transportation impossible, and would not be an attractive business opportunity for operators.
- Planning, funding and constructing riding and parking infrastructure: Individual Councils do not have the authority, budget, or expertise to implement connected and consistent infrastructure across Sydney. Therefore, this is a critical role for Transport for NSW.

  Research has repeatedly shown that providing infrastructure like bike lanes and parking makes micromobility safer for riders and non-riders.

Case Study: Inclusive Design

Lime's vehicles are designed to respond to the needs of many different user groups. Based on our research and feedback from our riders, we understand that the seat height, handlebar width, and cargo options increase accessibility for female riders and riders of varying heights and ages.

- Adjustable seat to accommodate a wider range of heights 142-203 cm
- Handlebar width so that brake levers are easily within reach for riders with smaller hands
- Front basket: Every Lime e-bike has a basket measuring 30.4 cm x 33 cm and 27.9 cm deep, sufficient for carrying a backpack, purse, or other cargo. The basket is porous, allowing water to drain.

[1] Lime's vehicles and batteries are certified to the highest international standards by organisations such as the International Electrotechnical Commission, UN Transportation Testing, European Standards s.r.o., European ROHs Directive, REACH, PoP, EMC, RED, WEEE Directive, and UL.

A safe riding environment is also a critical component of enabling greater use of micromobility, particularly among women and older demographics.

In addition to providing adequate bike lanes, providing parking for micromobility vehicles every 200m in dense areas helps ensure tidiness and keeps vehicles out of the right of way.[2]

As part of this, we also suggest the establishment of designated off-street parking spaces for devices in high-traffic areas, further reducing potential footpath obstructions and enhancing safety for pedestrians and other road users.

Lime would be happy to provide recommendations for these locations and infrastructure.

- Setting consistent "rules of the road": As with cars, all road users must be able to anticipate that micromobility riders will follow the same rules of the road regardless of Council borders. Likewise, riders must be confident that they can use micromobility vehicles to get to their destination, without regard for Council borders, and follow the same rules regardless of where they are coming from or going to. Therefore, Transport for NSW should set the rules for operation, including defining the service area, rules of the road, rider education, safety equipment, parking, zones, operating hours, and insurance requirements.
- Providing for reliable and equitable access throughout Sydney:
    - Number and distribution of vehicles: A successful program ensures that riders have access to vehicles when and where they are needed, but not so many that the fleet cannot be well managed. No single Council can determine or enforce these metrics across Sydney. Lime's experience across Australia and New Zealand has utilised data to inform the optimum number of vehicles in certain areas, including ridership statistics, population and density, infrastructure and congestion levels.

      Did you know? Lime uses vehicle deployment algorithms developed specifically for Sydney using our six years of experience and data from our programme. These algorithms help us maintain supply and manage demand during major events — one of our accomplishments in 2023 and 2024.
    - Appropriate number of operators: To avoid oversaturation of a market and provide healthy competition, customer choice, and easy administration, there must be a limited number of operators who can provide service. This must be determined on a citywide basis.
    - Contiguous service area: To maximise utilisation of the scheme, riders must be able to travel from Point A to Point B, regardless of Council boundaries. Islands where service is not permitted, differing operating hours, etc. make the scheme impossible to use. Therefore, Transport for NSW must have the authority to set the service area.
    - Equitable fleet type and allocation: Residents and visitors should have equitable access to micromobility throughout Sydney, regardless of Council boundaries. Likewise, different people

[2] To promote orderly parking and reduce obstruction, we propose the implementation of dedicated parking infrastructure for devices throughout the program. These areas should be strategically located in a dense network - at least one location every 200 metres (Urbanism Next 2024) - near popular destinations, public transport hubs, and residential areas to maximise convenience for users.

and different trips require different modes, but each Council currently has authority to ban e-scooters. To ensure equitable access to vehicles and their choice of vehicles, Transport for NSW should ensure that riders have access to micromobility and the choice of vehicle that they prefer.

- Providing effective management and enforcement: It is both inefficient and ineffective to have multiple authorities ensuring that riders and operators comply with the rules. The potential for loopholes is too great. As the sole regulator responsible for management and enforcement of the scheme, Transport for NSW can set up compliance databases, bans for riders, etc. that are applicable across operators and throughout the City.
- Establishing sustainability commitments and reporting requirements: Transport for NSW is best positioned to ensure that operators' sustainability claims are valid and verified. For example, Lime uses an ISO-aligned lifecycle analysis following ISO 14040:2006 and 14044:2006 to determine the overall carbon emissions from our service, an independent, third-party verified life cycle assessment (LCA) for determining the lifespan of our vehicles, and our sustainability certifications have been independently validated by the Science Based Targets Initiative (SBTi), a joint collaboration of the Carbon Disclosure Project, United Nations Global Compact, WWF, and World Resources Institute.

Local Government Areas: As discussed above, like other transport options, success requires consistency and availability throughout Local Government Areas. However, Councils are best positioned to provide insights into how the micromobility scheme is functioning in their area and promote active transport and safety rules to their constituents. Therefore, Councils should have the following responsibilities:

- Consulting with Transport for NSW and all operators on issues and program 2x per year
- Submitting parking locations
- Identifying hotspots/issues
- Promoting active transport and safety rules

B. Opportunities to reform the regulatory framework to achieve better and safer outcomes for riders and the community

The regulatory framework should first and foremost ensure availability and reliability of the service to drive adoption, while prioritising safety of the community and respectful integration of the service in the public space. Based on our experience in more than 280 cities globally, including across Australia and New Zealand, Lime recommends the following regulations to achieve a better and safer program for riders and the community, and we are happy to provide recommendations and examples for each recommendation at the Committee's request.

Did you know? Using our End-Trip Photo Review and machine learning directly on the rider app, we now provide tips to riders if we detect they've taken an insufficient photo. This decreased warnings by 12%, insufficient end-trip photos by 12.1%, and fines by 34.5%.

Enable riders to choose their preferred vehicle option:

- E-scooters and e-bikes should be authorised for use throughout the City, allowing people to select the best vehicle based on their preference, trip type, length, etc.

- As new vehicles are developed, Transport for NSW should have the authority to approve new vehicle types based on designated criteria without the requirement for further legislation or Council approval.

Over four out of five Australian riders (84%) say that having both bicycles and scooters available in the same application makes them more likely to use Lime, and three in four riders (74%) say that having multiple modes available makes them less likely to use a car.

Ensure all Sydneysiders have access to micromobility when and where they need them:

- Micromobility should be available throughout Sydney. If a whole city operating area is not feasible, operating areas should be contiguous and connect people with the important centres of the city (cultural, business, recreational).
- Service available 24/7 to support use for daily activities and by those who work non-standard schedules.[3]
- Providers should be required to demonstrate their commitment to serving low-income and underserved communities, offering discounted fares, and promoting digital and financial inclusion.

Build bike lanes and dedicated parking infrastructure to promote safe riding, reliable vehicle access and tidiness:

- All resurfacing or other road construction projects need to include protected bike lanes and micromobility vehicle parking.
- Dedicated parking locations no more than 200m apart in high density areas.
- Free-floating parking outside of central city districts and other high use/density areas.
- Areas next to intersections where car parking is prohibited due to sightlines should be automatically designated for micromobility parking, unless the Council can prove that a particular zone is unable to be used for micromobility parking. In the event that the zone is proven to be unsuitable, the Council must designate an alternate location for micromobility parking within 200m.
- Designated parking at all transport stations.

Establish safe riding standards:

- Limit speed to 25KPH. Vehicle speed automatically limited to 25KPH, consistent with other vehicles like bikes or e-bikes, allowing for safer riding that aligns with the pace of traffic.
- Riders must be at least 16 years old.
- Helmets provided on every vehicle.

Set a fleet size that balances reliability with tidiness, with adjustments based on demand and utilisation:

- Starting with a manageable initial fleet and growing the fleet in line with the success of the program and compliance with city priorities.
- Fleet adjustments should be based on demand and utilisation, ensuring optimal service levels and minimising footpath obstructions, without being above or below a finite “cap”.

[3] See Section F.

- Aggregate cap across the Councils, with a minimum cap number to ensure service level delivery, but not a maximum cap within individual Council LGAs.

Select operators through a competitive procurement process (e.g. RFP, tender, etc.) to ensure selection of reliable, safe, and financially strong operators who are best suited to serve the city's needs:

- Maximum of three operators to avoid oversaturation of a market and provide healthy competition, customer choice, and easy administration.
- Reliability, safety, sustainability, and fleet management should be the core criteria for selecting operators.
- Operators should never be selected based on financial contribution ("city fees", "level of investment" or "user pricing"). It creates unsustainable market conditions and should be avoided.
- Where relevant, cities should require evidence of delivery in comparable cities to support claims made by operators in competitive public procurement or application documents.

Fees

If Transport for New South Wales decides to assess program fees, we recommend that any fees should follow principles that promote transparency, adoption of micromobility, and sustainability:

- Fees should be set at no more than what is necessary to offset the reasonable costs to the city of administering the shared micromobility program, with costs transparently shared with operators and the public. Examples of cities adopting this practice of "proportionality" includes Copenhagen and Oslo (MacArthur et al 2024, p. 41)
- Be equivalent to fees charged to similar modes, like bikeshare, and a fraction of the per mile fees charged to modes like ridesharing and cars that emit pollution, contribute to congestion, require higher enforcement and administration costs, and impose greater wear and tear on roads and infrastructure. A 2024 study found that the opposite was typically true: shared micromobilty systems were charged 13x more than personal cars paid in the gas tax and 5x more than ridehailing, on a per-mile basis (MacArthur et al 2024, p. 34)
- Ensure the revenue to the city grows with the program through a per-ride fee.
- Fees should be set prior to vendor selection and applied consistently across all operators. This avoids negative outcomes such as operators overpromising on financial commitments, legal concerns over excessive fees, and operators winning bids and then withdrawing from the market due to unsustainable fees (see for example Miami, Florida - MacArthur et al 2024, p. 54)
- Fines should be reasonable, commensurate with the harm caused by the infraction and account for barriers to safe compliance, like insufficient infrastructure.

Establish reasonable but comprehensive insurance requirements:

- operators must provide adequate insurance across Public liability, 3rd party liability and personal accident to protect both riders and the community. This should be a pre qualification to operator.

Promote sustainable operations:

- Every vendor should be required to provide a reuse and recycling programme designed to maximise

e-vehicle usable life and minimise waste.

- operators' sustainability claims should be derived in accordance with international best practices and validated by a third party.

Ensure data requested from operators is relevant and not unreasonably intrusive or excessive:

- Data requests from operators should relate to operations of the program and transportation/municipal planning. This aligns with best data management practice and the Transport for NSW Privacy Management Plan which requires that data collected should not be unreasonably intrusive or excessive and relevant.
- Uniform and automated data sharing through MDS and GBFS protocols, which are designed by and for cities and the most common methods used today.

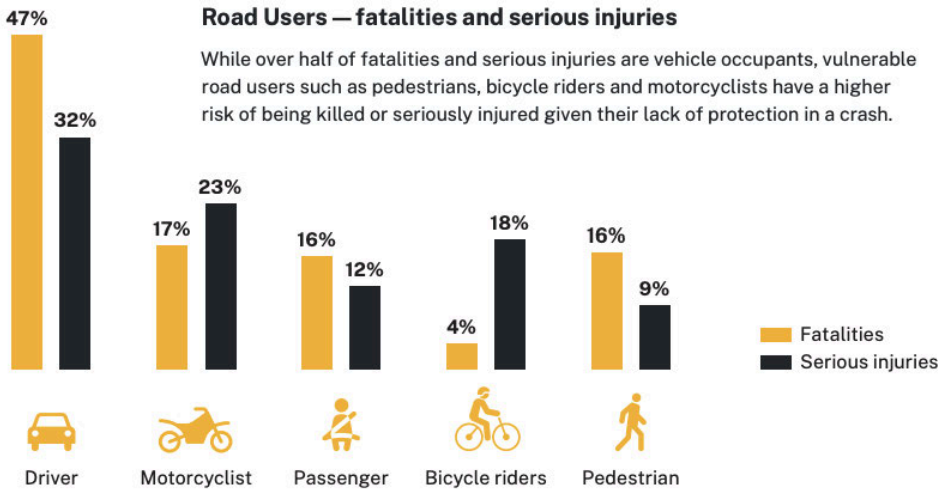
C. Local council, industry and stakeholder perspectives on the utilisation and impact of e-mobility devices in the community

Safety

Shared e-scooters and e-bikes are very safe ways to travel. We are proud to have achieved a 99.99% injury-free record since 2021 globally and in Sydney. In 2023-2024, only 38 incidents involving a Lime vehicle (out of 2.9 million rides taken by 360,00 riders) resulted in moderate or severe injuries, equal to 1.3 per 100k rides or 10.6 per 100k riders.

The risk from injury on an Lime is 17 times less than the injury hospitalisation rate of general cycling throughout Australia (185 per 100k participants and 54 times less than Australian Rules Football (570 per 100k participants).

Consistent with NSW's Vision Zero analysis, motor vehicles represent the biggest risk to micromobility riders and other vulnerable road users alike. In the U.S., the CPSC found that 68% of e-scooter and 56% of e-bike fatalities are caused by collisions with motor vehicles.[1] In Europe, vulnerable road users made up just under 70% of total fatalities in urban areas in 2021.[2]



Source: Transport for New South Wales 2026 Road Safety Action Plan

Achieving our collective vision of safe mobility is a shared responsibility between Lime, our riders, other road users and the cities we serve. To help us reach this vision, we have adopted a safe-systems approach which outlines Lime's responsibilities in upholding the highest design and maintenance standards while supporting our riders to ride safely. However, we can't achieve this vision alone. Providing dedicated infrastructure is the best way to keep riders safe, which is why we continue to provide data insights while advocating for safer streets in partnership with cities and the community.

Utilisation

In Sydney, over 500,000 riders have taken over 4 million trips, traversing over 7 million kilometres. In the 7 month period from January to July 2024, Lime riders took 1.3 million trips, a 160% increase over the same period in 2023.

Based on survey responses from over 3,600 Australian Lime riders over the past two years:

- The majority of Australian Lime riders are local residents (74%).
- The average Australian Lime rider is 34 years old, and 25% of riders are 42 or older.
- A quarter of Lime trips in Australia are made for commuting purposes (25%), a quarter are for getting to or from social outings (e.g. going to dinner, getting coffee, meeting a friend) (26%), and one in eight trips are for shopping or errands (12%).
- A quarter of Australian Lime trips connect to or from public transport (27%).
- About a quarter of Lime trips in Australia replace a more polluting mode (22%), such as a personal car, taxi, rideshare, or motorcycle trip.
- Australian Lime riders predominantly choose to use a Lime vehicle because it is convenient (45%), fast (44%), and fun (48%).
- Access to Lime allows Australian Lime riders to reduce their car reliance (85%) and increase their use of public transit (73%), while providing accessibility to the destinations they need to reach (78%), leading to a strong sense of civic pride (82%) and enabling them to continue living in an urban setting (84%).

Equity

Lime provides significantly discounted fares to riders experiencing low incomes through our Lime Access program. In addition to our survey data noted above, in 2023 we worked with to understand how Lime Access riders in Australia, New Zealand, and the United States use Lime:

- More than half of riders overall earn less than the median income for Australia (52%).
- **Lime Access** riders were more likely than general riders to be locals who use Lime for commuting and other utilitarian trips (68%) compared to non-Access riders (37%).
- Lime was regularly used as a first/last-mile mode linked to transit (27%) especially among **Lime Access** customers (44%).
- **Lime Access** riders were more than twice as likely as **non-Lime Access** riders (67% vs 31%) to select 'affordable' as one of the main reasons they used Lime.

Sustainability

- Micromobility provides a convenient alternative to cars for Sydneysiders. A quarter of Lime trips in Australia replace a more polluting mode (22%), such as a personal car, taxi, rideshare, or motorcycle trip.
- In Australia, the average Lime scooter trip reduces carbon emissions by XX grams per kilometre, and the average Lime bicycle trip avoided XX grams of CO2 per kilometre.
- A Fraunhofer ISI study[2] found that Lime's service reduced carbon emissions, by comparing the carbon emissions of Lime's vehicles and operations with the transportation modes that e-scooters and e-bikes replace.

D. Opportunities to improve mobility, the customer experience, safety for users and the community

Section B discusses Lime's specific recommendations for making Sydney's micromobility program best-in-class. However, it is worth noting that shared e-scooters and e-bikes provide communities with better mobility, customer experience, and safety outcomes than private vehicles:

	Individual	Shared
Track-record of safe operations	❌ No	✅ **Yes**
Safe vehicles	❓	✅ **Yes**
Speed control	❌ No	✅ **Yes**
Parking management	❌ No	✅ **Yes**
Regular maintenance	❓	✅ **Yes**
Rider accountability	❌ No	✅ **Yes**
Communication with cities	❌ No	✅ **Yes**
Certified batteries and safe charging	❓	✅ **Yes**
Local contact	❌ No	✅ **Yes**

E. The potential benefits and risks of existing regulatory and policy settings, including the *Roads Act 1993*, Road Rules and Road User Space Allocation Policy and other related legislation regarding safety, traffic, and personal convenience

The existing regulatory framework, particularly the Roads Act 1993, Road Rules, and Road User Space Allocation Policy, provides a foundation for integrating shared micromobility into NSW's transport ecosystem. However, there are significant opportunities to optimise these regulations to maximise the benefits of micromobility whilst effectively managing potential risks.

Benefits of current regulatory settings:

1. Alignment with sustainable transport priorities: The Road User Space Allocation Policy prioritises sustainable and space-efficient modes of transport, which aligns well with shared micromobility. The policy's principles, such as considering "walking (including equitable access for people of all abilities); cycling (including larger legal micro-mobility devices)" ahead of general traffic, provide a supportive framework for integrating micromobility into the broader transport network. This alignment supports Lime's goal of providing sustainable, inclusive, and accessible micromobility options.

2. Support for pilot programmes: The existing framework allows for pilot programmes and trials, which are crucial for testing and refining micromobility regulations. This approach enables evidence-based policymaking and helps ensure that any permanent regulations are well-suited to local conditions. Lime's experience in over 280 cities globally, including in Australia and New Zealand, can provide valuable insights for such pilots.

Potential risks and areas for improvement:

1. Lack of specific micromobility provisions: The Roads Act 1993 may not explicitly address newer forms of micromobility, potentially leading to ambiguity in how these devices are regulated. Updating the Act to include specific provisions for e-scooters and other micromobility devices would provide greater clarity and consistency in their management, supporting Lime's recommendation for Transport for NSW to set consistent "rules of the road" for micromobility.

2. Outdated road rules: Current road rules may not adequately address the unique characteristics of micromobility devices, potentially creating safety concerns or limiting their utility. Developing specific rules for micromobility that balance safety with the need for efficient movement could enhance their integration into the transport system. This aligns with Lime's recommendation to establish safe riding standards, such as speed limits and minimum age requirements.

3. Inconsistent implementation: Whilst the Road User Space Allocation Policy is supportive of micromobility in principle, its implementation may be inconsistent across different jurisdictions. Ensuring uniform application of the policy across NSW would create a more predictable environment for micromobility operators and users, supporting Lime's call for a contiguous service area and equitable fleet allocation.

4. Inadequate infrastructure provisions: The current regulatory framework may not sufficiently mandate the creation of dedicated micromobility infrastructure. This aligns with Lime's recommendation to build cycle lanes and dedicated parking infrastructure to promote safe riding, reliable vehicle access, and tidiness.

5. Limited provisions for data sharing and privacy: The existing framework may not adequately address the need for data sharing between micromobility operators and authorities whilst protecting user privacy. This relates to Lime's recommendation to ensure data requested from operators is relevant and not unreasonably intrusive.

Recommendations:

1. Update the Roads Act 1993: Explicitly include provisions for shared micromobility, clarifying the rights and responsibilities of both operators and users. This could include defining micromobility devices, their classification, and where they can operate.

2. Develop specific micromobility road rules: Create rules that address the unique characteristics of micromobility devices, such as appropriate speed limits in different contexts, parking regulations, and right-of-way rules. This aligns with Lime's recommendation for Transport for NSW to set consistent rules for operation.

3. Strengthen implementation of the Road User Space Allocation Policy: Ensure consistent prioritisation of micromobility across NSW. This could include developing guidelines for local councils on how to apply the policy in the context of shared micromobility, supporting Lime's call for a unified approach across council boundaries.

4. Mandate infrastructure development: Introduce requirements in the Roads Act 1993 or related legislation for the inclusion of micromobility infrastructure in new road projects and major upgrades. This supports Lime's recommendation for dedicated cycle lanes and parking infrastructure.

5. Establish data sharing framework: Develop clear guidelines for data sharing between micromobility operators and local authorities, enabling evidence-based decision-making whilst protecting user privacy. This aligns with Lime's recommendation for uniform and automated data sharing through MDS and GBFS protocols.

6. Create a centralised regulatory authority: Empower Transport for NSW to act as the primary regulatory body for micromobility across the state, addressing Lime's recommendation for consistent rules and equitable access throughout Sydney.

7. Introduce flexibility mechanisms: Include provisions in the regulatory framework to allow for quick adjustments based on data and learnings from micromobility operations. This supports Lime's emphasis on evidence-based decision-making and continuous improvement.

By addressing these points, NSW can create a regulatory environment that maximises the benefits of shared micromobility – such as reduced congestion, improved first/last mile connectivity, and decreased emissions – whilst effectively managing potential risks related to safety and public space management. This approach aligns with Lime's vision for a sustainable, inclusive, and accessible micromobility scheme for New South Wales, whilst also supporting the broader goals of creating more liveable, efficient, and environmentally friendly cities.

F. The extent that e-mobility devices have positive community benefits such as encouraging mode shift, relieving congestion, addressing social disadvantage and tourism

As noted in the response to item C, Lime's rider survey data (3,600+ responses in Australia) shows the positive community benefits of shared micromobility.

Mode shift and congestion reduction: Lime trips serve as a first/last-mile solution and encourage mode shift from motor vehicles. A quarter of Australian Lime trips connect to or from public transport (27%). About a quarter of Lime trips in Australia replace a more polluting mode (22%), such as a personal car, taxi, rideshare, or motorcycle trip.

In a 2022 study of 6 global cities, including Melbourne, Fraunhofer ISI researchers found that Lime trips reduced carbon emissions, after taking into account both mode shift patterns and the lifecycle carbon emissions of Lime and the modes Lime trips replace. The net carbon emissions savings were highest in Melbourne of all 6 cities studied (42 grams of CO_2 saved per kilometre travelled on Lime scooters), in large part due to the high mode shift from more polluting modes.

Addressing social disadvantage Lime provides an option that is used by Australians of a variety of income levels: half of riders earn less than the median income for Australia (52%).

A recent report led by Monash University Prof. Alexa Delbosc[4] studied Lime Access, our reduced-fare program for low-income travellers, in Australia, New Zealand, and the US. The study showed that Lime Access has a multitude of benefits:

- Access riders are more likely to use Lime for commuting and other utilitarian trips (68%) compared to non-Access riders (37%).
- Lime Access in combination with public transit supports a car-light or car-free life. 44% of Lime Access users' trips connected to or from public transit as part of an overall multimodal journey. And when public transit was unavailable, Lime is a robust alternative: over a third of trips by Lime Access riders replaced public transport (34%).
- Qualitative feedback showed the tangible benefits of the Access subsidy on riders' lives, especially for people with a physical disability or who could not afford a car.

<u>Encouraging tourism</u>

While the majority of Australian Lime riders are locals (74%), a quarter of riders are tourists (26%), showing how shared micromobility can enable more sustainable tourism.

Case Study: Lime Access Study with Monash University

Our **exclusive** **Lime Access** study, conducted with Monash University, is the first of its kind to transparently report who uses shared micromobility reduced-fare programs and how they use them, and it included riders in the United States, Australia, and New Zealand—including Seattle. Lime Access riders were much more likely to use Lime on an everyday basis and over a long time period than non-Lime Access riders. They were much more engaged riders, identifying more benefits of Lime than non-Lime Access riders, as well as noting more deficiencies, such as a lack of availability or service area restrictions. The researchers surveyed over 1,000 Lime riders and found:

- Roughly 10% of the respondents used Lime Access.
- Lime Access riders are more likely to use Lime for commuting and other utilitarian trips (68%) compared to non-Lime Access riders (37%).
- 44% of Lime Access riders' trips connected to or from public transit as part of an overall multimodal journey.
- When public transit was unavailable, Lime was a robust alternative: over a third of trips by Lime Access riders replaced public transport (34%).

This study was recently published in the Journal of Cycling and Micromobility Research, was presented at the Transportation Research Board conference, and was published as a report in 2023.

G. Opportunities across government to improve outcomes in regard to e-scooters, e-bikes, and related mobility options

See Section B above.

H. Best practice in other Australian and international jurisdictions

<u>Centralised authority:</u> One of the hallmarks of successful micromobility programs is a centralised regulatory authority that sets consistent rules and accounts for the needs of the whole city.

Brisbane is a good example of this. The Brisbane LGA is unique in covering over 1 million residents. In this example, the Queensland Government has developed rules for the use of micromobility devices under the Queensland Road Rules, while the City of Brisbane tenders for, and administers, a shared micromobility scheme of two operators across the LGA. The size of the Brisbane LGA means investment in active transport infrastructure is largely funded and delivered by the council, including parking infrastructure.

[4] https://www.sciencedirect.com/science/article/pii/S295010592400007X

By contrast, Los Angeles and the San Francisco Bay Area show the difficulties of fragmented authority. In Los Angeles, micromobility service is not available in Santa Monica, Beverly Hills, Pasadena, and other adjacent cities meaning that riders have to end their trip at the edge of the city. This also happens in the San Francisco Bay Area where there are different providers across nearby jurisdictions and residents are not able to move between cities.

Benefits of scale: By providing sufficient vehicles to ensure that micromobility is a reliable means of transport, people use e-bikes and e-scooters for their everyday needs. Chicago, London, Paris, and many other cities have seen unprecedented increases in use of carbon free transport. In London, Lime accounted for 68% of the cycling growth in London between 2022 and 2023.

In addition, providing sufficient vehicles helps deter people from owning their own e-vehicles, reducing the fire risk from non-certified or faulty vehicles bought off of the internet.

City	Vehicles	Increase in bike/scooter transport
London	Approximately 30,000 scooters and bicycles	184% increase in Lime cycling trips, 2022 to 2023
Paris	Approximately 15,000 bicycles	78% increase in Lime cycling trips, 2022 to 2023
Chicago	Approximately 6,000 scooters	255% increase in Lime scooter trips, 2022 to 2023

Dense Parking Infrastructure: Research has found that developing a dense parking network leads to better parking compliance. University of Oregon and Cornell found that micromobility parking corrals need to be accessible within a 1 minute walk of any location within a city and 3 parking spaces are needed per micromobility device to ensure compliant parking.

Paris is a great example of developing a dense network of micromobility parking. There are over 9,000 parking corrals providing capacity for over 80,000 vehicles in the city serving a fleet of over 20,000 vehicles across three providers. Washington DC is another example city that is building out a robust parking network. They have approximately 15,000 micromobility vehicles. To maintain tidiness, the city installed over 200 parking corrals citywide, and dedicated parking locations at high traffic areas like the National Mall.

I. The economic analysis of e-mobility contribution to safe transport at night for shift workers and women, to mode shift and to first and last mile transport

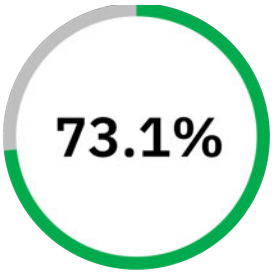
Local Business Impact

E-scooters provide a significant public benefit to local businesses. Research from Emory University Professor Dan McCarthy shows that scooter use leads to more economic activity, especially at restaurants:

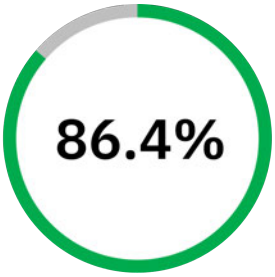
> Using data covering 391 companies in 98 U.S. cities, the authors find that the introduction of e-scooters in a city significantly impacts restaurant spending, increasing spending by approximately 5.2% for e-scooter users, driving incremental spending of at least $11.3 million annually across all cities that first allowed e-scooters to operate over summer 2018. ... we estimate that $179.10 in restaurant sales was created per e-scooter allowed to operate.

Our data is consistent with Professor McCarthy's findings – riders frequently use Lime scooters to run errands and explore commercial areas, often making purchases during these trips. In Lime's most recent Sydney rider survey, with 700 responses:

- 56.9% of riders said Lime made them more likely to visit local businesses.
- 81.5% of riders said Lime makes it easier for them to live and stay in the city.



of riders said Lime made them more likely to visit local businesses.



of riders said that Lime makes it easier for them to live and stay in the city.

Lime is making a strong economic impact in Auckland: 60% of riders made a purchase before or after their trip, with a median spending value of $30.

To further boost local businesses and attractions, we use messaging and discounts to increase visits and encourage riders to shop locally.

Increased Access to Jobs and Education

Scooters also contribute to economic development by increasing access to jobs and education:

- In Sydney, a quarter of Lime trips (27%) are for commuting to work and/or school (according to 700 responses to a Lime rider survey).
- A Conveyal analysis shows that with the addition of shared micromobility options, Seattle households can access 1/3rd more jobs within a 45 minutes by public transit: 289 thousand jobs in the baseline scenario (transit plus walking), versus 385 thousand jobs by combining transit and micromobility.
- An found that "offering dockless bikeshare and scooter share citywide would put an additional 1.5 million New Yorkers within a 10-minute walk, bike, or scoot of a subway line.

Workforce Development & Capital Investment

Micromobility companies like Lime create well-paid employment opportunities in the cities we serve, supporting NSW's vision for a prosperous city. In Sydney, we have already created 45 FTE positions.

As we do in most of our markets, we partner with workforce development organisations to recruit candidates to advertise jobs locally and connect with First Nations people looking for work when recruiting our personnel, ensuring that Lime hires locally, and our economic expansion benefits those who are most in need of career opportunities.

Micromobility companies also invest locally in renting facilities for our warehouses. We invest in upgrades to those facilities, like electric vehicle charging for our fleet vehicles.

Shift Workers

Micromobility helps provide transportation for shift workers, especially during the hours when public transport is not running[5]: 20% of Lime trips are taken between 10 pm and 6 am. Not only is this a benefit for the workers themselves, it contributes to the night time economy.

Women

Data from Transport for NSW shows nine in 10 women in Sydney feel unsafe in public spaces at night and more than 60 percent of girls in NSW that have experienced harassment will not walk or travel alone.[6]

Among other issues, the city's lack of 24-hour public transport contributes to this situation. While adding micromobility alone will not change the underlying issues that influence women's safety, it gives women additional options that do not require being vulnerable walking or using Uber or other modes after transit shuts down.

Making e-scooters and e-bikes available 24 h is consistent with NSW's "Safety After Dark Innovation Challenge" designed to accelerate technologies that address issues of womens' safety when travelling at night.

In addition, well lit and biking infrastructure in high traffic areas can also help boost women's feelings of safety using e-bikes and e-scooters at night. According to findings from the Tackling the Gender Pedal Gap study, key opportunities to address the gender gap include addressing quiet/isolated cycle routes and a lack of parking areas in well lit locations.[7]

Women's Safety

"There's nothing easy about being a young nurse starting your career. It's rewarding, and I love my job, but it is also challenging. So I appreciate anything that makes my life a little easier.

That's why I've come to love e-scooters. They make me feel safe, they save me money, they're fun, and they make me feel good about not driving my car everywhere". -

"Commuting from my home in Port Melbourne when I am working a night shift in the critical and intensive care unit can be intimidating and daunting. It can feel unsafe walking alone in the early hours of the morning or riding on near-empty public transport, hoping nothing goes wrong and that no untoward characters get on before you get off. Everyone in Melbourne has at least one story of a train, tram or bus ride from hell, where someone having a bad day gets on and makes everyone else feel unsafe. On an e-scooter, the worst that will happen is you'll be forced to wait at a set of traffic lights next to someone for a minute or two."

is an intensive and critical care nurse living in Melbourne.

Mode Shift

Lime trips serve as a first/last-mile solution and encourage mode shift from motor vehicles. Based on rider survey data, a quarter of Lime trips in Australia replace a more polluting mode (22%), such as a personal car,

[5] Keeping Detroit Moving: Lessons from the 2020 Essential Workers E-Bike Pilot at 9 ("[N]early 95% of respondents in the final evaluation survey reported that having access to the e-bike 24/7 was very convenient.")
[6] Taylor, A., *Why 90 per cent of women in Sydney don't feel safe at night*, Sydney Morning Herald, March 4, 2023 available at https://www.smh.com.au/national/nsw/why-90-per-cent-of-women-in-sydney-don-t-feel-safe-at-night-20230228-p5co8m.html
[7] https://cdn.li.me/content/uploads/Womens-Night-Safety-Report-Nov-2023.pdf

taxi, ride hail, or motorcycle trip. A 2022 Fraunhofer ISI report found that Lime's service reduced carbon emissions, by comparing the carbon emissions of Lime's vehicles and operations with the transportation modes that e-scooters and e-bikes replace. In Melbourne, the average Lime scooter trip reduces carbon emissions by 42 grams per kilometre, and the average Lime bicycle trip avoided 14 grams of CO2 per kilometre.

First and Last Mile Transport

Based on Lime rider survey data, we find that a quarter of Australian Lime trips connect to or from public transport (27%). Third party research corroborates that scooters provide a fast, efficient first-mile solution, allowing more people to access public transit than walking (Conveyal). In Seattle, the introduction of scooters increased the percentage of households within 10 minutes of transit by 11 percentage points (67% to 78%) by providing a faster trip to the nearest public transit stop than walking.

J. Any other related matters.

Safe battery management

Although the risk of a thermal event is very small, shared micromobility companies are best suited to ensure safe transport, handling, and charging of batteries. Unlike personal vehicles, shared vehicles can be verified as

As noted in Section A, the Federal government should require all micromobility batteries be tested and certified to the highest international standards.

In addition, TNSW can verify the soundness of the warehouses and operating processes for maintaining, charging, storing, and disposing of batteries.

Carbon Reduction

In a 2022 study of 6 global cities, including Melbourne, Fraunhofer ISI researchers found that Lime trips reduced carbon emissions, after taking into account both mode shift patterns and the lifecycle carbon emissions of Lime and the modes Lime trips replace. The net carbon emissions savings were highest in Melbourne of all 6 cities studied (42 grams of CO2 saved per kilometre travelled on Lime scooters), in large part due to the high mode shift from more polluting modes.

Conclusion

Thank you once again for allowing Lime the opportunity to provide a submission. Should the Committee have any further questions, we would like to answer them. As outlined above, we are also available to attend any hearings of the inquiry, as necessary and can facilitate tours of our Brisbane operations, or our Sydney warehouse for Committee members. Please don't hesitate to reach out to either myself or to .

With respect and gratitude,

William Peters
Senior Regional Director, APAC, Lime