

SHARED MICROMOBILITY

Discussion Paper for the Integrated Transport Strategy

September 2024

ACKNOWLEDGEMENT OF COUNTRY

The City of Adelaide acknowledges that we are located on the traditional Country of the Kaurna people of the Adelaide Plains and pays respect to Elders past, present and emerging.

We recognise and respect their cultural heritage, beliefs and relationship with the land. We also extend that respect to visitors of other Aboriginal Language Groups and other First Nations.

DOCUMENT PROPERTIES

Record Details

HPRM Reference: ACC2024/144087

HPRM Container: 2024/00279

TABLE OF CONTENTS

ACKNOWLEDGEMENT OF COUNTRY	i
Document Properties	i
1. Introduction	3
2. Strategic Context and Current Situation.....	4
3. Best Practice Review	11
4. Engagement: What We Have Heard.....	20
5. Summary of Issues, Barriers and Opportunities.....	22
6. What are the current issues?	24
7. What are other cities doing?	28
8. Opportunities	30
9. Key Strategic Moves	34
10. Conclusion.....	34
Appendix A: Select Committee on Public and Active Transport - Summary	35
Appendix B: State Government PMD Engagement Summary.....	37
Appendix C: Potential Management of E-Scooters Based on Typologies	38

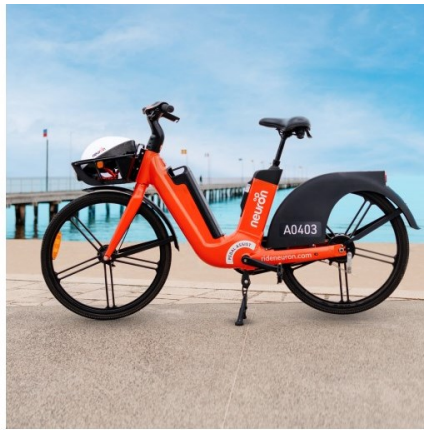
1. INTRODUCTION

This discussion paper is about shared micromobility: shared electric scooters (e-scooters) and cycle share schemes. Shared micromobility includes rentable fleets of small, fully or partially human powered or electric devices, including e-bikes, bikes and e-scooters (Figure 1).

Devices can be rented through a mobile phone app and are collected and dropped off in the public realm. Shared micromobility is a way people can move around in the City of Adelaide (CoA), and between CoA and adjacent councils with shared micromobility schemes operating.



E-Scooters



E-bikes



Bikes

Figure 1 Shared Micromobility Devices

Shared micromobility trips are generally shorter in length (less than 2km) although some trips may be limited by cost and the extents of areas allowed for use¹. Shared micromobility provides clear benefits when it replaces driving or enables people to visit people or places that they otherwise could not have due to distance, injury or disability, or personal safety concerns. Micromobility use in combination with public transport can be a door-to-door transport option with convenience and efficiency that rivals or exceeds driving. It is therefore seen to be a vital part of increasing sustainable accessibility².

As CoA grows, health, sustainability and liveability concerns become more critical, and it is important that there are attractive options for people to travel more actively and efficiently. Shared micromobility can contribute to reduced use of private motor vehicle trips within the City of Adelaide, thereby reducing congestion and the negative environmental, health and place impacts of private car use.

Currently, e-scooters can only be used legally within the City of Adelaide when they are *shared* e-scooters, hired from one of the two operators issued permits by CoA. No cycle share has operated in CoA since mid-2023. Previously there had been both bikes and e-bikes available to hire.

¹ Austroads (2024) *Prioritising Active Transport*. [AP-R711-24 | Austroads](#)

² Accessibility is the ease for people to reach desired destinations or opportunities. Accessibility has land-use, transportation, temporal and individual considerations.

2. STRATEGIC CONTEXT AND CURRENT SITUATION

Trials of shared e-scooters commenced in February 2019. Currently, commercially operated shared e-scooters are the only type of scooters permitted to be used on public roads in South Australia. Active trial areas are in the City of Adelaide, the City of Charles Sturt and the City of Norwood, Payneham and St Peters. The City of Unley trial ended in January 2024, after Councillors voted to discontinue the trial due to the ongoing uncertainty about the State regulatory framework. Shared e-scooters can now operate within and between the Adelaide and North Adelaide trial area and the Norwood, Payneham and St Peters trial area (Figure 2).

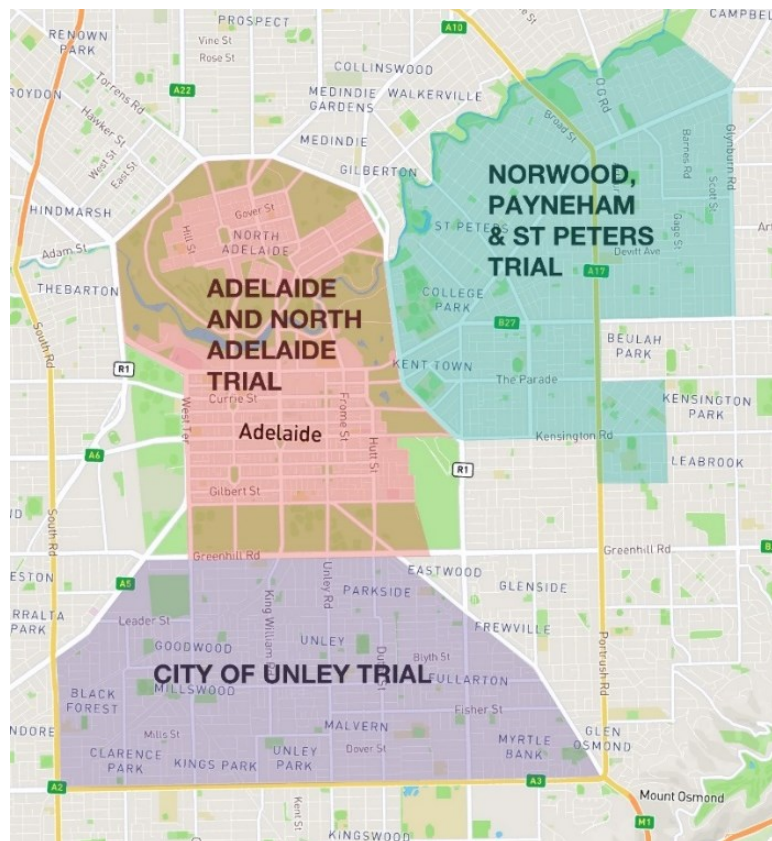


Figure 2 Shared E-Scooter Trial Areas (City of Unley Trial Ended 2023) (eScooter trial map - NPP-CoA-CoU.jpg (4500x5625) (mylicence.sa.gov.au))

Within the City of Adelaide trial area, a *Section 222³* permit and *Gazette Notice No. 1 of 2024⁴* allows Council to issue permits to operators. Under the *Road Rules⁵*, shared e-scooters are to be used on footpaths and shared paths (and cycle paths if available), with the use of the road limited to roads with a speed limit of 50 km/h or less, with no dividing line or median, and one-way roads of one lane, or for a maximum distance of 50m when avoiding path obstructions or to cross the road. The Gazette Notice will cease operation on 30 April 2025. By this time, the State Government may have decided to legalise e-scooters and other personal mobility devices (see Section 2.2).

While there are currently no cycle share operators in CoA, in the past operators have deployed standard and electric cycles, via a permit. People cycling a share cycle need to follow the

³ Section 222 of the Local Government Act 1999 (SA)

⁴ The South Australian Government Gazette, Road Traffic (Electric Personal Transporters) [Notice No 1 of 2024](#)

⁵ Australian Road Rules Reg. 240, [AUSTRALIAN ROAD RULES - REG 240 \(austlii.edu.au\)](#)

Road Rules, so are allowed to cycle on the road and paths (including footpaths), unless signed otherwise.

In 2023, there were almost 640,000 e-scooter trips (on average over 1,750 trips per day) that started within CoA, and over 804,000 km travelled. The majority of trips are less than 2km in length (Figure 3).

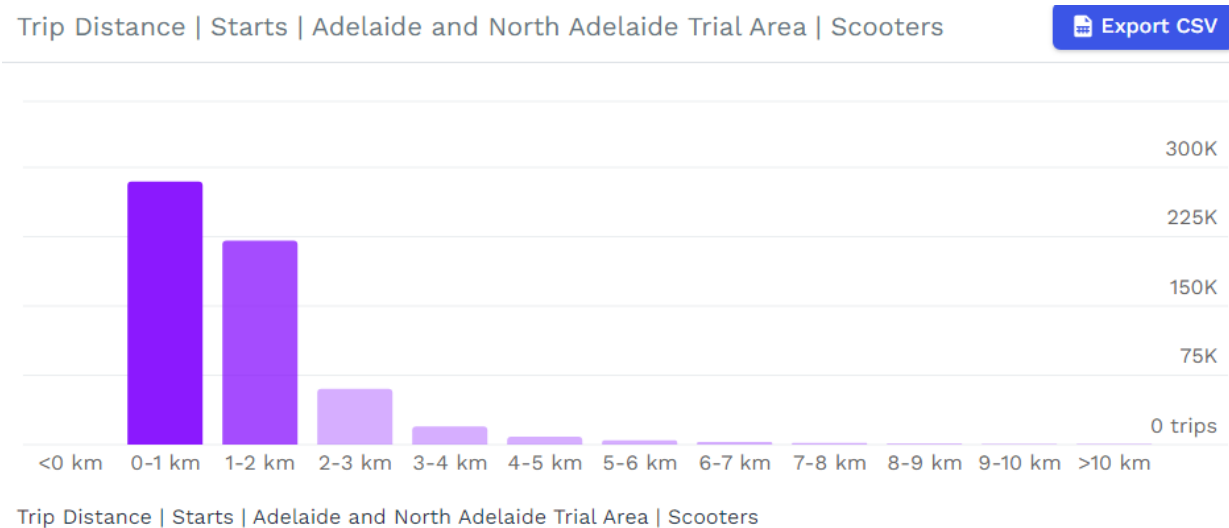


Figure 3 E-scooter Trip Lengths for 2023 (Ride Report)

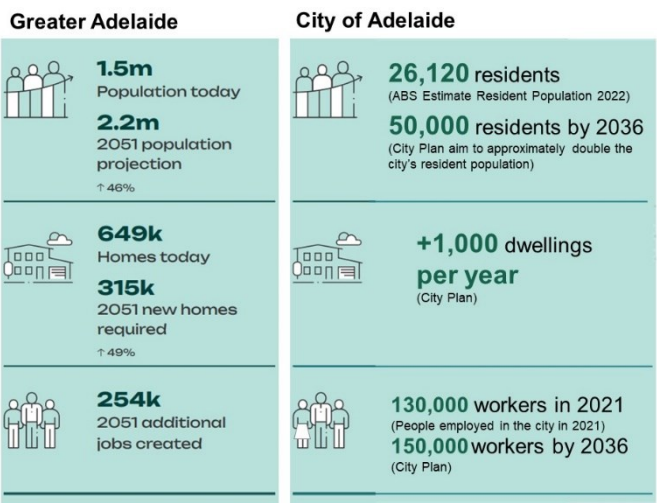
E-scooter operations across Adelaide largely depend on access to the City of Adelaide, as this is the destination of most users within the trial areas. As such, the City of Adelaide is uniquely placed to influence the shape and success of shared micromobility in South Australia.

2.1 The Need and Opportunity for Change

Role of Shared Micromobility to Support Sustainable Growth and Efficiency

High levels of **driving** within the City of Adelaide have multiple detrimental impacts, including those on people’s health and wellbeing, city liveability and productivity. Walking/wheeling is key **within the city**, as typically people are seeking to visit multiple destinations in proximity. When there are time, distance or ability issues, micromobility can provide a convenient and efficient way to move around CoA. An e-scooter rider survey⁶ undertaken by Beam for CoA found that 42% of riders surveyed would have otherwise driven their trip.

The Greater Adelaide Regional Plan⁷ (in draft for public engagement, September 2024) sets out significant growth for the Greater Adelaide Region, while City of Adelaide’s City Plan aims for ambitious growth within CoA (Figure 4).



⁶ [Beam Highlights: Making a mark on Adelaide with shared micromobility \(ridebeam.com\)](#)
⁷ South Australian Government, 2024, [Greater Adelaide Regional Plan](#).

Figure 4 Growth in Greater Adelaide (left: from the Greater Adelaide Regional Plan Draft, September 2024) and City of Adelaide (right: based on City Plan)

Current levels of driving to/from and within CoA cannot continue with this growth, or people driving will experience increased congestion and the city will have reduced liveability. Public transport used together with shared micromobility for the ‘first mile’ and ‘last mile’ (between public transport and destination/origin) could for many people provide a convenient, efficient choice compared with driving. For residents, shared micromobility can be a way to get to other parts of the city without driving or when they do not have the ability, time or desire to walk.

The City of Adelaide is a relatively compact area, with all trip distances readily cycleable. For people who are less fit or less used to cycling, and for some older people and some people with disabilities, e-cycles can make cycling achievable and accessible. E-cycles can travel farther and faster, meaning they are very competitive with and often faster than driving in cities. E-cycles can make cycling feasible for many more trips for more people, and increasing uptake is important to increasing the accessibility of cities and addressing society’s health and environmental concerns.

Automobility is still dominant in the City of Adelaide. *Smart Move* set a target to have public transport, cycling and walking form more than half of all journeys to work. Census data trends show that there has not been the desired mode shift. The Census 2016 Working Population Profile for CoA indicated approximately 40% of people working in CoA travelled by active or public transport to work, with no change from 2011. Although 2021 Census results reflect COVID conditions, there were similar outcomes.

Household car ownership is associated with driving, and by reducing car ownership we reduce car use⁸. In the 2021 Census car ownership data demonstrated CoA households have much lower car ownership compared to households in Greater Adelaide (Table 1).

Table 1 Household Car Ownership

Household car ownership	City of Adelaide	Greater Adelaide
No car	30.8%	7.6%
One car	48.7%	36.7%
Two or more cars	19%	54.6%

The percentage of CoA households without a car has remained at approximately 30% since 2011. With residential population growth, the number of cars is growing, with about 3170 additional household cars between 2016 and 2021. There needs to be a significant effort to increase the number of households living ‘car-free’. This can be supported through improving accessibility, which includes a land use component (access to services, shops, parks), transport component, temporal component and individual component⁹. Having shared micromobility available presents another transport option, available at all times of day and for people who may not drive – and presents an efficient city transport means to increase access and support low and no car ownership.

⁸ Jain, T., Johnson, M., & Rose, G. (2020). Exploring the process of travel behaviour change and mobility trajectories associated with car share adoption. *Travel Behaviour and Society*, 18, 117–131. <https://doi.org/10.1016/j.tbs.2019.10.006>

⁹ Geurs, K.T. & van Wee, B. (2004). Accessibility evaluation of land-use and transport strategies: review and research directions, *J. Transport Geography* 12, 127-140.

In the 2016 Census 38% of resident workers drove to work (Table 2), despite the CoA being a compact municipality of 15.5km² so trips distances mean most people could use active travel.

Table 2 Method of Travel to Work for CoA Resident Workers

Method of travel to work (Resident workers)	% (2016 Census ¹⁰)	% (2021 Census)
Car	38.3	35
Public Transport	11.9	12.6
Cycling	3.7	2.8
Walking	26.9	24

Use of Micromobility and Safety, Convenience and Choice

The way people travel is influenced by multiple factors, including safety and convenience. When City User Profile Survey (2022) respondents were asked about why those chose to travel to the city this way, 60% of city users said it was because it was the most convenient way of travelling for them. Only around a quarter of the respondents also said that their mode of travel was the one they preferred. This suggests that the current transport system is not providing choice and meeting people's needs.

People who are in the 'near market' or are 'interested but concerned' about cycling report barriers related to cycling on road with motor vehicles¹¹. The limited extents and connectivity of protected cycle lanes within the city limits potential uptake of cycle share. While footpath cycling is legal in SA, many people may feel uncomfortable doing so, especially those from interstate who are used to footpath cycling being illegal. It is also impractical to cycle on many busy city street footpaths.

Shared micromobility in combination with public transport can be a convenient door to door option. Many cities have achieved a high level of cycle-train integration, including with cycle share schemes, which presents people with a more attractive and competitive choice to driving. As the city grows, health, sustainability and liveability concerns become more critical, and it is important that there are attractive options for people to travel more actively and efficiently.

The Role of Cycle Share to Support Uptake of Cycling

Shared e-bikes can help people become more aware of and likely to try cycling, including as a choice over driving. Cycle share schemes mean people have indirect exposure (seeing people using them) and direct exposure (if they try them). As e-bikes can be a significant investment to buy, an opportunity to try e-cycling may be important in supporting their increased uptake¹². When relatively few people have e-cycles in Adelaide, this should be an important consideration.

The Role of Shared Micromobility to Support Events and the City Economy

In 2023, there were almost 640,000 e-scooter trips (on average over 1,750 trips per day) that started within CoA, and over 804,000 km travelled. Rider trip data suggests e-scooters play an important role transporting people to and from events and key city destinations such as the

¹⁰ Resident workers characteristics | Adelaide | economy.id

¹¹ Lauren Pearson, Belinda Gabbe, Sandra Reeder, Ben Beck, *Barriers and enablers of bike riding for transport and recreational purposes in Australia*, Journal of Transport & Health, Volume 28, 2023, 101538, ISSN 2214-1405, <https://doi.org/10.1016/j.jth.2022.101538>.

¹² Handy, S. L., & Fitch, D. T. (2022). *Can an e-bike share system increase awareness and consideration of e-bikes as a commute mode? Results from a natural experiment*. International Journal of Sustainable Transportation, 16(1), 34-4

Adelaide Central Market. Trip data also indicates that shared e-scooter trips support the night-time economy.

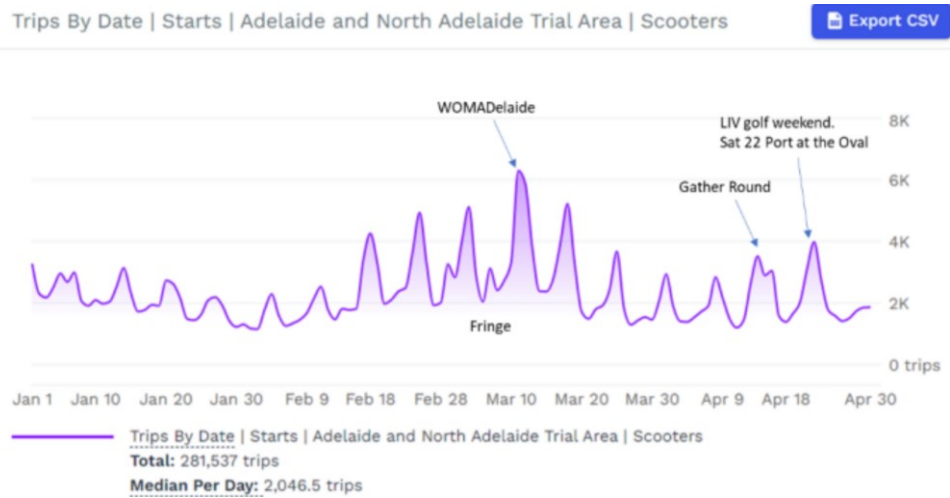


Figure 5: E-Scooter Use During Events

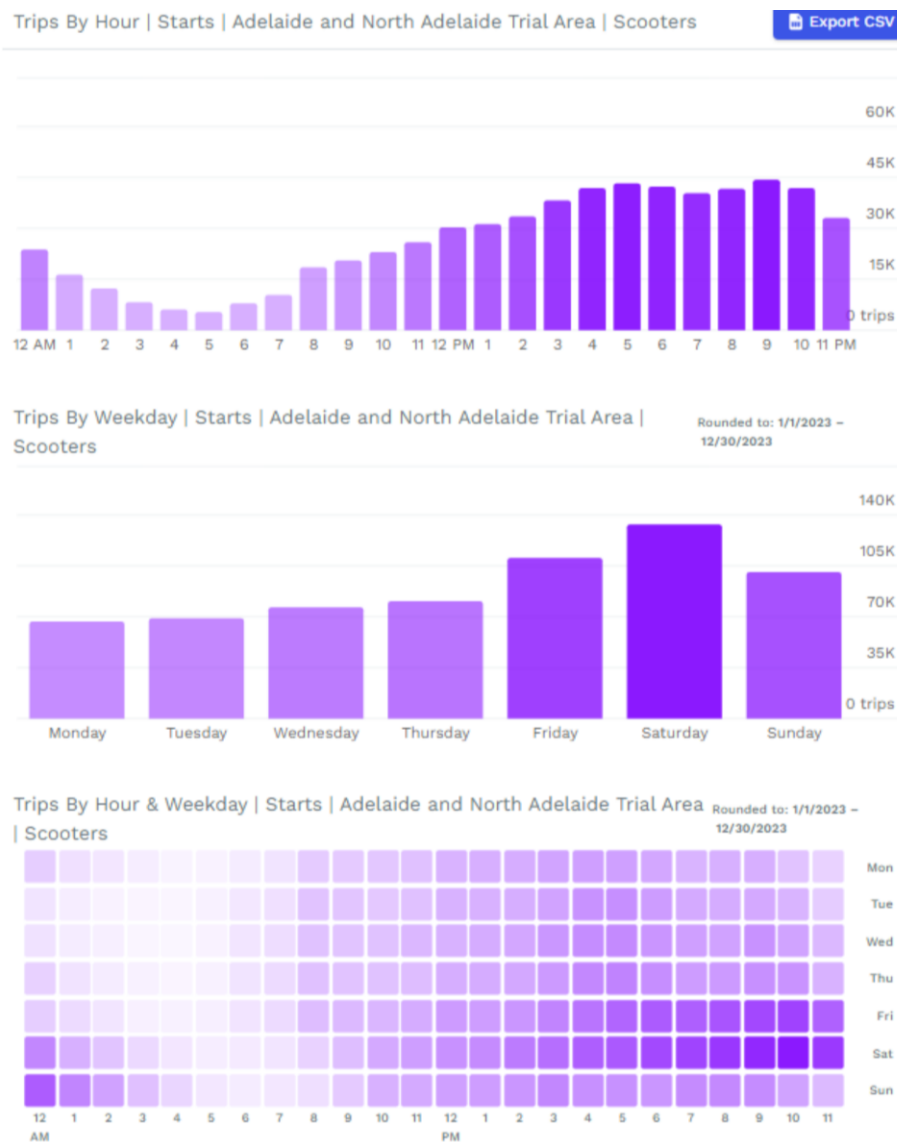


Figure 6 E-Scooter Use by Hour and Day

2.2 Policy and Strategy

City of Adelaide Strategies and Plans

Existing CoA strategies set out aspirations for a safe and more sustainable transport system and greener streets, with support for micromobility:

- *The Strategic Plan 2024-2028* and its aspirations for Our Places: Interesting, purposeful and safe, and Our Environment: Resilient, protected and sustainable. CoA is to establish targets that align with *South Australia's Road Safety Strategy to 2031*. CoA is to 'lead as a Low Carbon Emissions City' with key actions including making e-micromobility charging infrastructure available for all users.
- The *City Plan*'s focus on transport diversity (Figure 7) and delivery of 'A Greener and Cooler City' and better streets for active transport including micromobility.
- The *Integrated Climate Strategy* highlights the need to reduce carbon emissions from transport, which is a major source of emissions and without significant interventions will continue to grow. Under the *Integrated Climate Strategy* Goal 2: A net zero ready city, there are two key relevant priorities:
 1. Public EV charging infrastructure is available for all users, including micromobility, catalysing the uptake of EVs in Adelaide.
 2. Triple the number of city workers who cycle to work, and double the number of local residents who walk to work.
- The *Safer City Policy and Action Plan 2019-2023* sets out the need for safe streets, spaces and places.

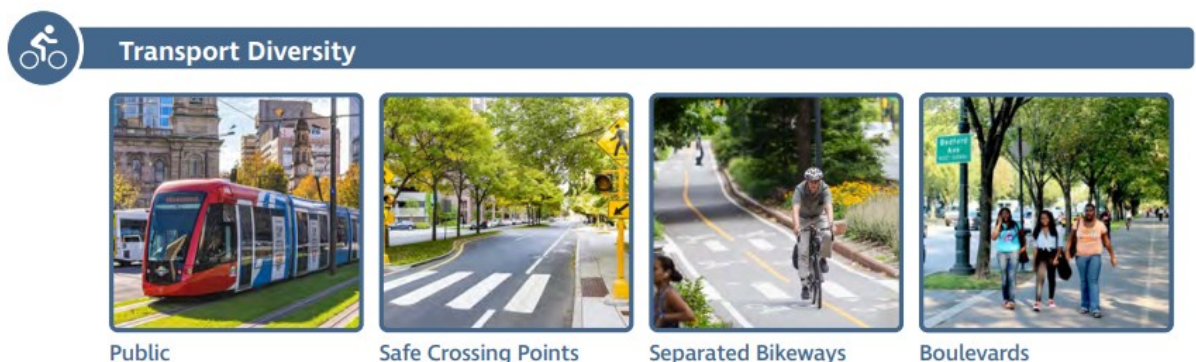


Figure 7 Excerpt from *City Plan: Urban Design Elements - The Primary Components*

- The Disability Access and Inclusion Plan (DAIP) includes a goal for 'infrastructure that helps people to move around and navigate the city', with universal design. The Plan calls for advocacy for improvements in the storage and regulation of e-scooters to ensure safe pedestrian paths.
 - Jude (Figure 8) who is profiled in the DAIP, uses mobility aids at times, public transport and shared e-scooters. Jude likes to use e-scooters but also identifies the need for better regulation and education, so they are not used or left in ways that present a danger to other people in public spaces.

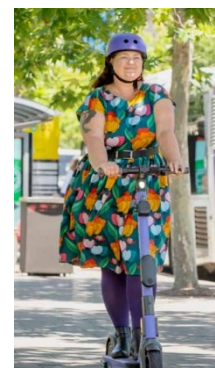


Figure 8 Photo of Jade (DAIP)

There is no City of Adelaide policy or operating guidelines for shared micromobility but operators must abide by a range of conditions within the permits issued. These conditions

manage shared micromobility operations via a range of controls, including on the number of devices allowed to be deployed, and reporting requirements.

State Context

Currently, e-scooters are only legal for use on public roads and paths in South Australia when they are part of a shared e-scooter scheme in a State Government approved trial area. The National Transport Commission (NTC) assessed the key safety and regulatory issues associated with micromobility devices, which led to a change in the model Australian Road Rules, which form the basis of the rules of each Australian state and territory. Despite the model rules, around Australia there are differing rules, including about where e-scooters are allowed to be used and speed limits on footpaths.

The Select Committee on Public and Active Transport (2022-2023) included a review of the use of e-scooters and potential opportunities for expansion or further regulation. The committee released its findings in February 2023. The Report¹³ made recommendations related to micromobility, which are summarised in Appendix A.

In 2023, the Department for Infrastructure and Transport undertook community engagement on the future of e-scooters and other personal mobility devices (PMDs) (refer to Appendix B). The feedback will be used to inform the regulatory framework for the use of private e-scooters and PMDs.

The State Government has introduced a Bill to Parliament to enable privately owned and shared e-scooters and other PMDs to be used on public roads and paths, without needing vehicle registration or a driver's licence. As of September 2024, the State Government is to develop a framework and draft regulations for e-scooter and other PMD use. Issues such as device dimensions, areas of access to the road environment, speed limits and road rules will be covered. New legislation is expected in early-mid 2025.

2.3 Current safety situation

The current permits require operators to report on incidents. While media reporting and perception may be that e-scooters present a significant danger, there are few reported crashes and even fewer involving third parties. In 2023 there were fourteen reported shared e-scooter injury incidents, ten of which were rider only and four involved a third party. Three of the ten rider only incidents were confirmed to require medical treatment. The operators follow up with riders and as riders often do not call back, presumably most falls are without injury. Of the incidents involving a third party, one was confirmed to require minor medical treatment and one hospital treatment.

¹³ Parliament of South Australia, (2023) *Report on the Select Committee on Public and Active Transport*

3. BEST PRACTICE REVIEW

3.1 Role of Shared Micromobility

The Austroads Research Report *Prioritising Active Transport*¹⁴, notes that shared micromobility offers a convenient, eco-friendly and cost-effective transport option, which can contribute to city objectives for liveability, sustainability, accessibility and increasing the mode share of active travel.

Research indicates that internationally and especially in many US cities, people are using shared e-scooters to replace car journeys, which suggests that they play a role in reducing car dependence and the issues associated with car driving¹⁵. The Austroads Report notes that shared e-scooter trips are generally short, and sometimes with high level of walking trip displacement. Displacement of driving varies (Figure 9) and it is noted that research findings about displacement have been mixed (and local surveys found 42% of e-scooter trips would otherwise have been driven).

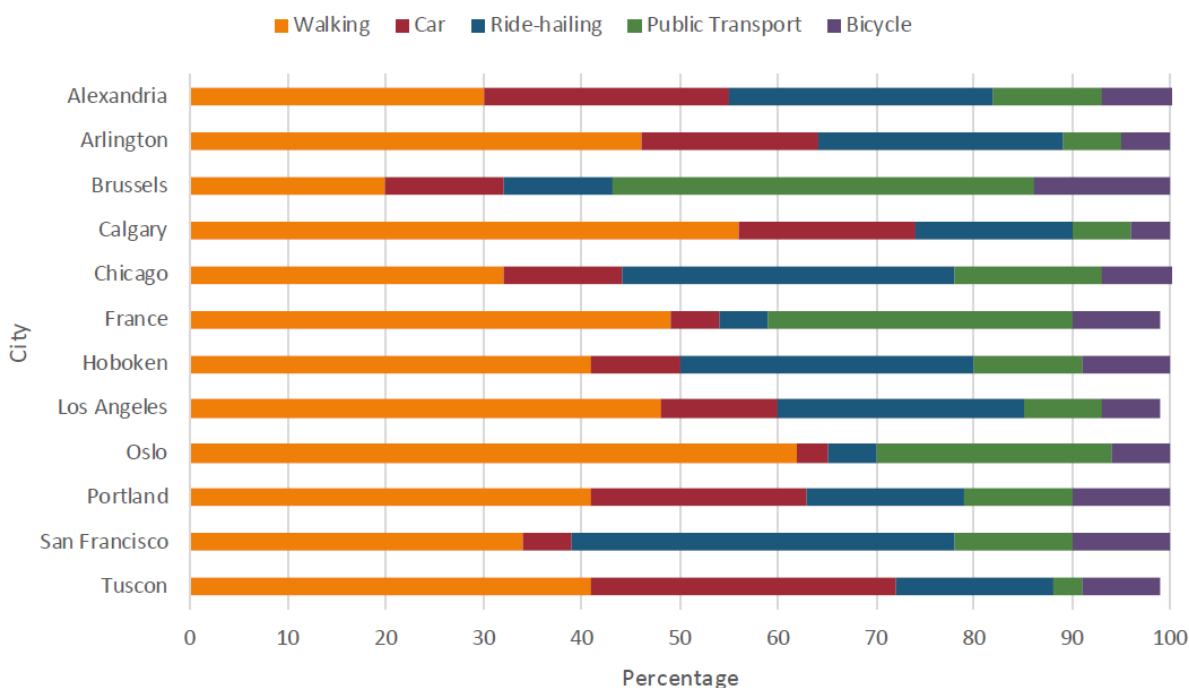
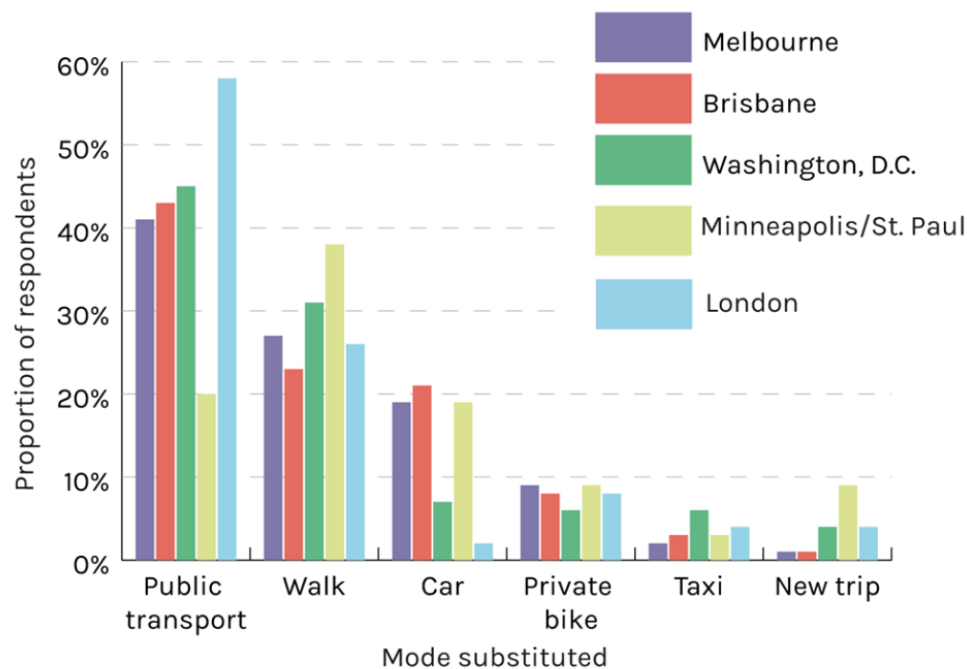


Figure 9 Displacement of Transport Modes by Shared E-Scooters (Figure 7.39 AP-R711-24 | Austroads)

The Austroads Report outlines trip replacement by cycle share (Figure 10), highlighting that some trips have been found to replace trips previously made by public transport. The latter can free up capacity on public transport. It is also indicated that cycle share can result in ‘new trips’, increasing accessibility for the community.

¹⁴ Austroads (2024) *Prioritising Active Transport*. [AP-R711-24 | Austroads](#)

¹⁵ Kailai Wang, Xiaodong Qian, Dillon Taylor Fitch, Yongsung Lee, Jai Malik & Giovanni Circella (2023) *What travel modes do shared e-scooters displace? A review of recent research findings*, *Transport Reviews*, 43:1, 5-31, DOI: 10.1080/01441647.2021.2015639



Source: Fishman (2019)

Figure 10 Mode Being Substituted by Cycle Share in Selected Cities (Figure 7.32, AP-R711-24 | Austroads)

The contribution of shared micromobility to sustainable city outcomes, including emissions reduction, depends in part to the ability of shared micromobility trips to replace car trips (mode substitution), and that micromobility operator support vehicle use for redistribution and maintenance does not negate these substitution benefits. Studies indicate that cycle share programs located in numerous cities in Australia and the US have a mean reduction in car use due to cycle share at least twice the distance covered by support vehicles¹⁶.

Shared micromobility is a way to make better transport options more prominent. It can enable people to move away from driving and test moving around the city in a more sustainable, active way (and to realise how compact the city is), and 'try before you buy' with shared cycles, which may contribute to travel behaviour changes.

A review of the Lime cycle share scheme¹⁴ in Melbourne found that most trips are under 2km, which likely reflects the cost and catchment size. Most trips (44%) were for recreation, about a third for commuting and 23% for shopping or dining. Shared e-scooter trips are mostly taken for social/entertainment purposes, work purposes and then fun/recreation, shopping or errands.

Integration of Shared Micromobility and Public transport

The Austroads Research Report, *Prioritising Active Transport*¹⁴ highlights that in best practice countries, such as the Netherlands, 50% of rail trips start or end with a cycling trip, so there is significant potential to increase the combination of cycling and public transport in Australia. Cycling presents a cost-effective way to travel to and from public transport stations/stops, with door-to-door ease, flexibility (which 'gives freedom'¹⁷), speed and reach (well beyond walking) to rival/better car or bus. Combining cycling with public transport trips is a synergy that can

¹⁶ Fishman, Elliot, Washington, Simon, & Haworth, Narelle (2014) Bike share's impact on car use: Evidence from United States, Great Britain, and Australia. In Rodier, J (Ed.) *Transportation Research Board (TRB) 93rd Annual Meeting Compendium of Papers*. Transportation Research Board (TRB), United States of America, pp. 1-14

enhance convenience, is sustainable and efficient, and can be an attractive proposition to displace driving trips^{17 18}.

To realise the potential of cycle-public transport integration, provision of safe, connected cycling routes to/from stations and stops is the primary consideration, and availability of convenient cycle share schemes are the second most important consideration^{18 19}.

OV-fiets in the Netherlands is a nationwide cycle share system based at railway stations (with users collecting and returning cycles to the station). A survey^A found that

OV-fiets availability influences positive mode choice:

- 8% of users would otherwise have driven their journey if OV-fiets were not available.
- 46% use OV-fiets instead of bus/tram for the trip from station to destination.
- OV-fiets availability increases train use: 54% of respondents use the train more.



^AGuidelines to implement BiTiBi services, March 2017 (bitibi.eu)
<https://nieuws.ns.nl/>

Healthier Communities

The Austroads Research Report *Prioritising Active Transport*¹⁴ reviewed studies on the health impacts of cycle share and concludes cycle share results in considerably higher levels of physical activity at a population level.

3.2 Road Safety

The Austroads Research Report *Prioritising Active Transport*¹⁴ notes that a rise in cycle share schemes (and therefore levels of cycling) has not led to a proportional increase in injuries, and that instead there has been 'safety in numbers'. A review²⁰ of evidence from 93 cities across six European countries with shared e-scooter schemes found that police-reported crashes involving injuries increased after schemes were introduced in cities with limited cycling infrastructure while there was no significant change in cities with high cycle lane density.

The Safe System framework is the systematic approach to road safety in the Australian and South Australian road safety strategies. *South Australia's Road Safety Strategy to 2031* highlights that, "The Safe System model is regarded as international best practice and is the framework for improving road safety across Australia." The principles on which the model is based are set out in Figure 11.

¹⁷ [DCE - The Bicycle-Train Combination: A Ticket to Success \(dutchcycling.nl\)](https://dutchcycling.nl/)

¹⁸ [improved-cycling-transit-integration-synergies.pdf \(itf-oecd.org\)](https://itf-oecd.org/publications/improved-cycling-transit-integration-synergies.pdf)

¹⁹ Guidelines to implement BiTiBi services, March 2017 bitibi.eu

²⁰ Cloud, C., Heß S. & Kasinger, J. (2023). Shared e-scooter services and road safety: Evidence from six European countries, *European Economic Review*, 160
<https://doi.org/10.1016/j.euroecorev.2023.104593>



Figure 11 Safe System Principles (SA's Road Safety Strategy to 2031, p.19)

There are four main 'pillars' of the Safe System approach, which are areas of action contributing to safer outcomes: Safer Speeds, Safer Roads, Safer Vehicles, Safer Users, in addition to post-crash care. These pillars are used in this Discussion Papers to help identify key considerations for shared micromobility, to be developed further in the Integrated Transport Strategy.

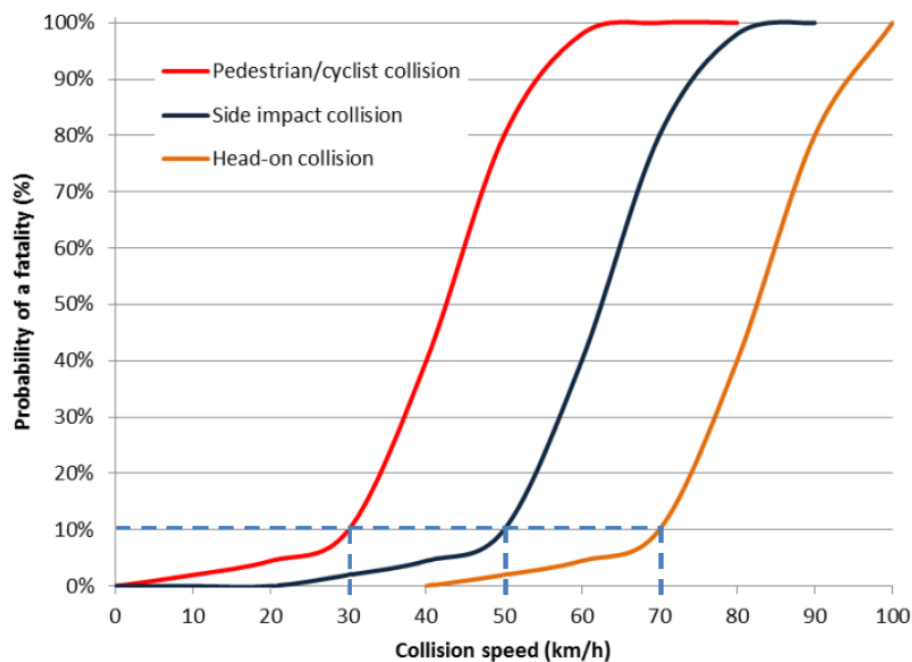
Safer Speeds – Speed Limits and Device Speed Limits

The speed of shared micromobility can be remotely limited by a geofencing system, whereby the maximum operating speed is limited, dependant on its geographic location. Currently the Department for Infrastructure and Transport (DIT) limits e-scooter speed to 15 km/h and does not allow the use of bicycle lanes, and roads can only be used in some circumstances.

The NTC assessed the potential impacts of a variety of operating speeds and types of infrastructure to identify a balance of safety and convenience. The infrastructure and speed combination identified were:

- a 10 km/h maximum speed on pedestrian infrastructure such as footpaths, shared path and shared zones; and
- a 25 km/h maximum speed on bicycle infrastructure and on some types of local roads.

Higher motor vehicle speeds increase the likelihood and severity of crashes, and above 30km/h the likelihood of death for people walking/wheeling, cycling and scootering being hit by a vehicle increases exponentially (Figure 12).



Source: Jurewicz et al. (2015a) and based on Wramborg (2005)

Figure 12 Wramborg Curves Showing the Relationship Between a Motorised Vehicle Collision Speed and Probability of a Fatality for Different Crash Configurations (Figure 2.6, Austroads 2021)

The ITF Report on Micromobility, Equity and Sustainability highlights that internationally, cities are increasingly – and in accordance with the recommendations of the Stockholm Declaration of the Global Ministerial Conference on Road Safety - setting 30km/h as the default speed limit. The ITF recommends that 30km/h is the maximum limit for motorised vehicles to reduce the risk of death or serious injury to people using micromobility (and walking/wheeling).

Safer Streets: Infrastructure Network

The Austroads Research Report *Prioritising Active Transport*¹⁴ suggests transport strategies to support shared micromobility develop a prioritised network of micromobility lanes. The report notes that studies have found that the success of cycle share schemes depends on the level of investment governments make in the cycle infrastructure network, and safer speeds limits on streets without separated cycling/micromobility facilities such as protected cycle lanes. The report also suggests identifying ‘no go zones’: streets and paths where it is unsafe to mix people scootering and/or cycling with people walking/wheeling or dwelling.

The findings²¹ of a strong correlation between cities that have low density cycle infrastructure and higher injury crash rates is important (especially when CoA’s Strategic Plan seeks to prevent fatalities and reduce serious injuries on our network). The findings suggest that providing separated cycle-based infrastructure that can be used by e-scooters reduces the number of injury crashes and simultaneously encourages e-scooter use.

The NTC safety assessment considered the use of local roads. The NTC concluded that the benefits associated with improved micromobility access encouraged longer commuter trips, improved commercial opportunities and congestion reduction, and that these outweigh the costs associated with minor increases in safety risks to people walking/wheeling and riding. If CoA seeks Safe System outcomes though, if speed limits on roads exceed 30km/h a Safe System is not provided.

²¹ Cloud, C., Heß S. & Kasinger, J. (2023). Shared e-scooter services and road safety: Evidence from six European countries, *European Economic Review*, 160 <https://doi.org/10.1016/j.euroecorev.2023.104593>

Safer Streets: Parking and Fleet Size Management

The International Transport Forum²² highlights that streets and car parking spaces in cities mean space is disproportionally allocated to cars, and that safety and place outcomes will benefit from better space allocation. Best practice^{23, 24, 25} highlights the need for redistribution of road space and for re-purposing of car parking spaces, to maximise uptake of more sustainable and efficient shared transport modes.

For perspective, it is noted that while there may be a perception of a high level of improper e-scooter parking, some studies suggest that the public overestimates it (while underestimating the level of non-compliant car parking)²⁴. There is no doubt scope for improved management of parking though. There is a need to balance the door-to-door convenience of micromobility devices without obstructing people walking/wheeling, particularly for people with disability.

Different parking models can be used to manage shared micromobility parking (Figure 13).

Parking models

- **'Free floating'** parking means that device users can choose where to leave a device.
- **Designated parking** means that device users must park at certain locations.

Marked nodes, are legible by signs or pavement markings. **'Virtual' nodes** do not have physical infrastructure, markings or signage but are controlled via geofencing and messages to the user.

Bays or corrals use space on street off footpaths for parking devices, leaving footpath space available for other uses and users.



Designated parking area or marked node.
(Photo on O'Connell St, North Adelaide)



Corral on Pirie St for personal bikes



Docking station or hub <https://bikeep.com/>

Docking stations or hubs use physical infrastructure to make parking legible and devices upright and ordered, and may incorporate charging ability for e-bikes and e-scooters.

Mobility hubs are larger areas that may include multiple shared devices, as well as car share.

Figure 13: Shared Micromobility Parking Management

²² ITF (2021), *Micromobility, Equity and Sustainability: Summary and Conclusions*, ITF Roundtable Reports, No. 185, OECD Publishing, Paris.

²³ National Academies of Sciences, Engineering, and Medicine 2022. *E-Scooter Safety: Issues and Solutions*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26756>

²⁴ Brown, A., Klein, N.J., Thigpen, C. and Williams, N., 2020. *Impeding access: The frequency and characteristics of improper scooter, bike, and car parking*. Transportation research interdisciplinary perspectives, 4, (p.100099).

²⁵ London Cycling Campaign, 2021. *Micromobility Parking: Literature Review* <https://www.lcc.org.uk/wp-content/uploads/2021/06/LCC-Micromobility-Parking-Literature-Review-June-2021.pdf>

Designated parking can help operators better manage device deployment and reduce the number of motor vehicle or cargo cycle trips taken to move devices. Incentives such as ride discounts can encourage users to move certain devices or park them in certain places to help balance devices across the network.

Designating micromobility parking locations can increase predictability and legibility for users and non-users²⁶. Intuitive and legible parking infrastructure, such as docking stations, align with perceptions of tidy parking, increase ride compliance and may reduce community concerns with shared micromobility parking²⁴. At the same time, this needs to be balanced against the need for and cost of physical infrastructure, flexibility of space use and visual impact.

The Austroads Research Report *Prioritising Active Transport*¹⁴ notes that transport strategies (to support shared micromobility) should consider prioritised micromobility parking in high demand areas and analyse the optimal density of shared micromobility devices.

For shared micromobility schemes to be viable and contribute effectively as part of a city's transport system, they need to allow for spontaneity and be reliable (Figure 14) so people need to be able to locate a device within a short walking distance. A spacing of 300m for cycle share stations or shared micromobility hubs has been suggested²⁷. Numerous studies have suggested that shared e-scooter users are willing to walk an additional two minutes to pick up an e-scooter, with spacing at about 100m (noting this distance could be increased if there were no delays with crossings). Such suggestions will be considered when developing the Integrated Transport Strategy and the hierarchy and principles for allocation of streetspace. Considered locations of marked nodes, hubs and bays in the public realm can mean that micromobility devices can be safely stored without infringing on essential city operations and the movement of people walking/wheeling.

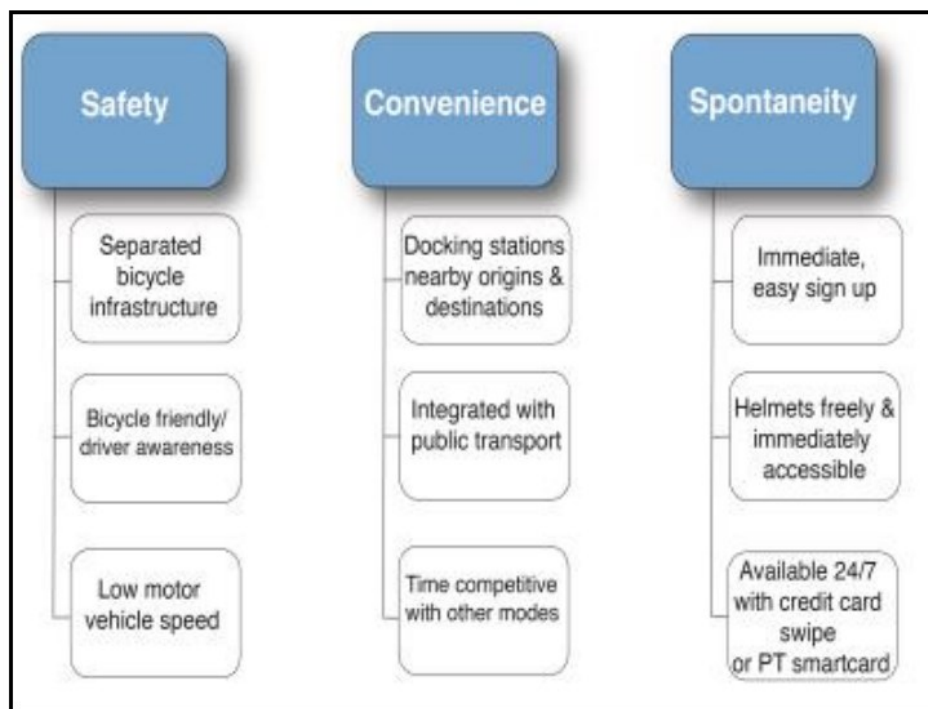


Figure 14 Factors that Encourage Micromobility Use²⁸

²⁶ NACTO, 2019. *Guidelines for Regulating Shared Mobility*, Version 2.

²⁷ London Cycle Campaign's Climate Safe Streets recommendation, and NACTO: Walkable Station Spacing is Key to Successful, Equitable Bike Share | National Association of City Transportation Officials (nacto.org)

²⁸ <https://www.yourmove.org.au/media/3694/bike-share-master-class-part-one.pdf>

Safer People

Research indicates that parking compliance improves over time and that about two-thirds of improper parking cases were due to lack of knowledge of rules²⁴. Micromobility operators can provide information to users to enable people to make more informed decisions and enable them to know how to more safely use and park devices.

3.3 Economic Considerations

Pricing and Relative Proposition of Shared Micromobility (to Driving)

The Austroads Research Report *Prioritising Active Transport*²⁹ notes that shared micromobility can be supported through **user fee structures that encourage high levels of use**. A review of the Lime cycle share scheme in Melbourne found that the pricing structure was limiting people from taking longer trips and using cycle share more frequently. People surveyed suggested lower pricing and monthly passes and integrating shared micromobility with public transport ticketing.

The Austroads report also highlights that success of shared micromobility schemes – and more broadly the success of city transport strategies (for sustainable, efficient, accessible and inclusive transport outcomes) depends on the **use of incentives and disincentives** and that most successful cycle share schemes are in cities where car use (parking) is more expensive and harder. Increasing cycle share (and reducing car mode share) requires marketing to attract car drivers and presentation of a value proposition. It is suggested that an example of this would be a complementary approach to rationalise and increase the cost of car parking.

Many cities have a fee structure with a fixed permit fee plus fee per device and fee per trip³⁰. This is a means to encourage operators to carefully consider the number of devices on the network, to reduce ‘clutter’ and reduce the likelihood of devices being left inactive or become hazards. Some cities operate a rides per vehicle per day (r/v/d) metric or percentage utilisation metric to reduce the number of unused vehicles on the street and to ensure there are enough vehicles to meet demand. Such dynamic systems may be too onerous in terms of management, for both the operator and administration.

3.4 Accessibility and Gender Equity

The high cost of transport has been identified as ‘transport disadvantage’, with the expense of owning and using private cars as limiting quality of life and as a barrier to better employment opportunities, education, developing social networks and access to city commercial activities. The potential for micromobility to become an inexpensive and more equitable transport alternative has been realised by major city administrations throughout the world. For shared micromobility, there is the challenge of private profit versus affordability. It has been noted though, that shared e-scooters create additional mobility choices for privileged demographics: predominantly young, educated males, while there are barriers to using e-scooters for some women and people with lower social-economic situations³¹. As noted by Davidson³², there are, “questions of equity and justice over the fairness of the services and their use of public space”. In some locations, shared micromobility operators have been regulated to accept cash-based payments and price discounting for disadvantaged social groups.

²⁹ Austroads (2024) *Prioritising Active Transport*. [AP-R711-24 | Austroads](#)

³⁰ NACTO, 2019. *Guidelines for Regulating Shared Mobility*, Version 2.

³¹ Frias-Martinez, V., et al., (2021). *Causal effect of low-income areas on shared dockless e-scooter use*. Transportation Research Part D: Transport and Environment. 100: p. 103038.

³² Davidson, F., (2022). *Understanding the justice and equity considerations of shared e-scooter program policy A thesis submitted in partial fulfilment of the requirements for the degree of Master of Urban Planning and Environments*. RMIT University.

Government’s strategies to decarbonise transport and create healthier streets, plus the low cost (relative to car ownership and maintenance especially) and convenience of micromobility has resulted in significant growth in micromobility use in numerous cities. Studies undertaken in Australia, Europe and North America have identified a correlating reduction in vehicle emissions, time savings for visitors and commuters and an improvement in social equity, when the low-cost ride sharing platforms provide transport to those who have no access to a car.

Davidson⁶ and NACTO highlight that city policies should aim to align public benefits and private operators’ profits. Age is a barrier to micromobility use, especially for shared e-scooters, with users legally required to be 18, while older adults may not feel stable and comfortable using e-scooters. Likewise, women, who are more frequently carers and carry loads (e.g. shopping), are less likely to find e-scooters meet their travel needs. Research³³ indicates that men are more likely to adopt risky behaviours and ride e-scooters faster than women, while women are more risk-averse and less likely to use micromobility when they need to share street space with motorised vehicles. A Beam survey³⁴ found that e-scooter users are 10% more likely to be male than female but locally we have relatively limited (and independent) data.

A US survey found 64% of respondents were male e-scooter users and that women ride less frequently than men³⁵. The survey also found that women e-scooter users indicated they would scoot more if there were safer facilities, and there was some preference to scoot in safer places such as footpaths. Both men and women indicated a preference not to be exposed to mixing with motorised vehicles, the preference was even stronger with women. As Dill³⁸ highlights, “if we want e-scooters to be a mobility option for everyone, we need to be thinking about providing safe and comfortable places to ride.”

Davidson found from an international policy analysis that there are four main areas of policies related to equity and justice outcomes: distribution, accessibility, evaluation and education and outreach (Figure 15) and recommended a policy framework (Figure 16).

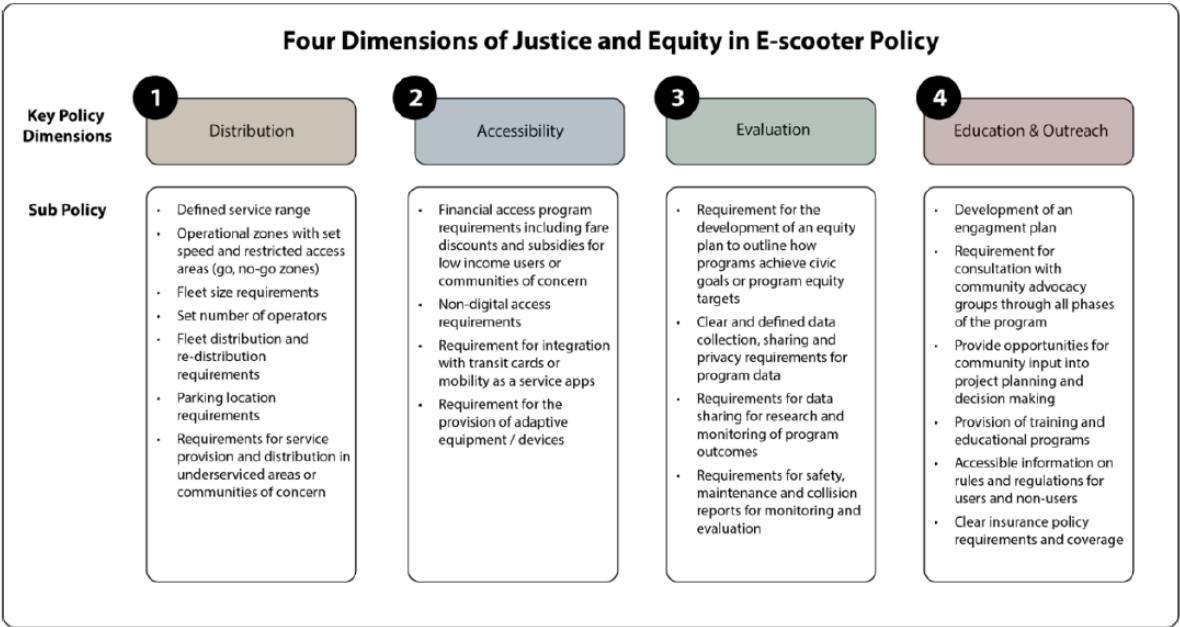


Figure 15 Dimensions of Justice and Equity in E-Scooter Policy (Fig.10, Davidson)

³³ Cubells, J. Miralles-Guasch, C. and Marquet, O. (2023). [Gendered travel behaviour in micromobility? Travel speed and route choice through the lens of intersecting identities - ScienceDirect](#) Journal of Transport Geography 106.

³⁴ [Beam \(ridebeam.com\)](#)

³⁵ [The e-scooter gender gap – Jennifer Dill, Ph.D.](#)

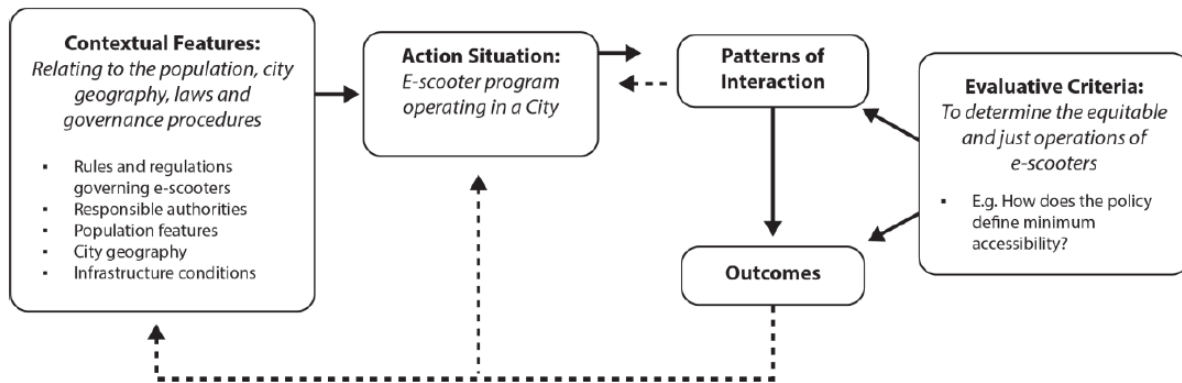


Figure 16 Policy Framework for Equitable and Just E-Scooter Management (Fig 11, Davidson)

4. ENGAGEMENT: WHAT WE HAVE HEARD

E-scooter use and parking on footpaths are key issues raised by the community. Use of public space for shared micromobility to move through and be stored on was raised by numerous respondents to the YourSay Adelaide e-scooter parking trial survey (Figure 17). There were strong sentiments towards e-scooter use and parking not unfairly impacting the use of footpaths by people walking/wheeling. People also identified that e-scooters were more efficient than cars, and questioned why car parking spaces could not be reallocated for the parking of (many more) e-scooters.

Shared e-scooters especially, as a relatively new mode, are seen to be ‘out of place’ but it is wider issue of the best use of limited street space. Street space within cities is finite and community engagement to date indicates that some people are questioning the efficiency of on-street car parking and noting that the use of such spaces would benefit micromobility users while creating more space on footpaths for people walking/wheeling. The Street Space and Kerbside Management Discussion Paper also outlines these issues.

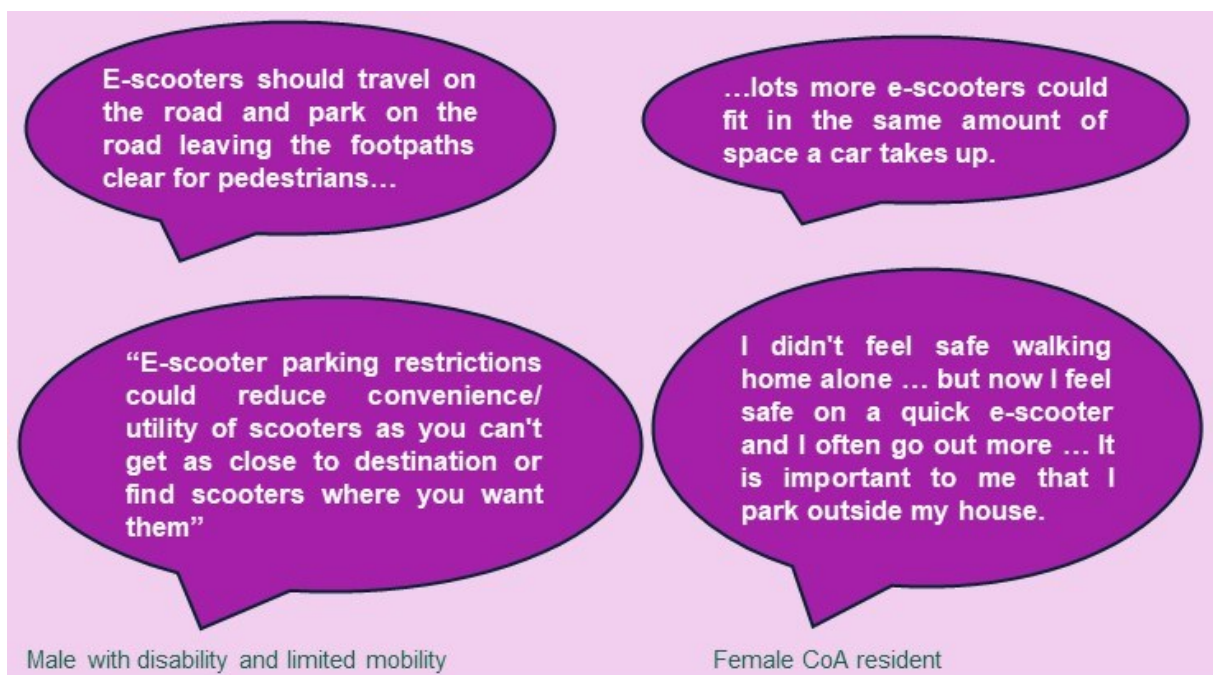


Figure 17 Sample of CoA Survey Responses about the 'Right' to Public Space and Issues for Inclusive Outcomes

While **misplaced devices can especially impact people with disability** (as reiterated by the CoA Disability Action and Inclusion Panel, schemes can also increase accessibility. **People with disability have told us how e-scooters can mean they can make trips that they would be unable to walk.**

General customer feedback has highlighted issues around **people walking/wheeling being startled by shared e-scooter users**. Without cycle share operating, we have not had recent feedback about cycle share use but customer feedback raises **discomfort about general cycling on shared paths and footpaths**. Feedback points to the need to seek dedicated space for comfortable walking/wheeling, and safe outcomes for people cycling/scootering.

In the Gender and Safety Focus Groups (2023) and reiterated in an ITS Gender Lens Workshop (2024), **e-scooters, by moving faster, give women a greater sense of safety** as it is harder to be stopped, compared to walking. As quoted above, a CoA female resident identified how e-scooters have meant she can go out in the city more, due to an increased **sense of safety moving faster – and being able to park outside her house**, which is of note when considering parking models; feedback suggests there needs to be a balance of designated parking and also a free floating option when it is suitable, such as on quieter residential streets.

5. SUMMARY OF ISSUES, BARRIERS AND OPPORTUNITIES

Framework Theme	Issue/Barrier	Opportunity	Responsibility (State / CoA)	Opportunity Category ³⁶
Movement & Access				
Motorised Traffic Impacts and Mode Share	Levels of car driving are high and too many short trips within CoA are driven. Cycling uptake is low, as it public transport use (see below).	Cycle share can encourage people to try and then take up cycling.	CoA	Lead
Quality Cycling Conditions	Key to more people, especially women, cycling in general and using cycle share (so schemes are viable). Limited safer, healthier streets that can be used by micromobility, so footpath used.	Networks of protected cycle lanes/ cycle paths Mixed traffic conditions on lower volume streets (with Safe System aligned speeds); Safer crossings and intersections.	CoA	Lead
Walking is Comfortable & Accessible	Footpath use by shared micromobility users; legal but uncomfortable for people walking/wheeling. Misplaced e-scooters and space taken by parking.	Quality cycling (micromobility) networks to use rather than footpaths. Better parking management and space allocation to create more space for walking/wheeling: designated parking only on busier streets.	CoA	Lead
Public Transport	Public transport use remains relatively low, and uptake is impacted by convenience and having only North Adelaide Railway Station and Adelaide Railway Station in CoA.	Integration of shared micromobility with public transport: a value proposition (rather than driving, which is a 'cost')	CoA +State	Partner
Experience & Place				
Population Growth	Residential and worker increase (City Plan). Driving levels unsustainable and congestion will worsen.	Improve transport diversity: shared micromobility on its own and with public transport, to reduce car ownership and use.	CoA	Lead
Economic Activity	Shared micromobility supports night time economy and inclusive accessibility to the City, Visitor expectation to have cycle share and shared e-scooters. Access to mainstreets and Park Lands.	Cycle share to support tourists (and locals) to explore the Park Lands and mainstreets.	CoA	Lead
Health & Sustainability				
Clean Air	High levels of car use reduce air quality	Increased micromobility use (and mode shift away from cars) will reduce transport emissions)	CoA	Lead
Access to Nature	Some residents are too far from the Park Lands to walk there readily.	Re-establishment of cycle share scheme and its promotion for use to visit Park Lands.	CoA	Lead

³⁶ **Opportunity Category:** **Lead** – invest time and/or resources, **Partner** – actively seek partnership opportunities • **Facilitate** – utilise levers available to support implementation • **Advocate** – seek out support and/or partners to undertake state or nationally significant actions • **Regulate** – fulfil legislative roles and requirements.

Framework Theme	Issue/Barrier	Opportunity	Responsibility (State / CoA)	Opportunity Category ³⁶
Heat & Climate Resilient Places & Networks	Need to increase street greening for cooling and shade. Over-reliance on car driving means transport system lacks network resilience.	Shared micromobility aligns with transport diversity and increases network resilience. Use of Healthy Streets assessments to create better streets for active travel including micromobility, and greening.	CoA	Lead
Safety & Comfort				
Safer Speeds (speed limits)	Streets in CoA are generally 50km/h (and some 60km/h), which is unsafe for cycling and scootering mixing with motor vehicles.	Seek Safe System speed limits (as part of the Citywide Speed Limit Review),	CoA State	Lead Regulate
Safer Speeds (Devices)	People walking/wheeling feel uncomfortable around moving e-scooter and e-bikes.	Continue to use 'go slow' 10km/h zones on some footpath lengths.	CoA Operator	Facilitate Lead
Safer Streets	Create micromobility networks (see above)	Implement framework to develop networks and create safer, healthier streets.	CoA	Lead
Safer Vehicles	Technology built into shared e-scooters is currently limited by State legislated weight limits. Geofencing accuracy for speed and parking controls impacted.	Improved safety and tidiness. Better technology can help with implementation of parking controls, for parking management and detection of safer/legal places to ride (eg footpath or carriageway).	State	Advocate
Safer People	Cycling/scootering under the influence of drugs, helmet use. Poor user behaviour, helmet use, poor rider skills and knowledge.	Road Rules and police enforcement. Rider incentives and/ penalties Rider education (require operators to provide education events, messaging, etc)	State/Police CoA (operator requirements)	Advocate Facilitate
People Feel Comfortable on the Street	Car dominated streets reduce place outcomes: experience for people on streets. Micromobility use on footpaths (see above).	Shared micromobility can reduce short driving trips within the city, and driving to the city (through public transport integration).	CoA	Lead
Gender Inclusive Places & Networks	Shared micromobility can increase accessibility for women and people with disability, who may otherwise feel unsafe/be unable to walk. Current devices may not be accessible for some people.	Connected, safe micromobility networks to support more people to scoot and cycle. Require operators to have more inclusive devices and pricing models to help more people use shared micromobility...	CoA CoA Operator	Lead Facilitate Lead

6. WHAT ARE THE CURRENT ISSUES?

6.1 Role of Shared Micromobility Not Realised

There is currently no share cycle scheme in CoA, which is a missed opportunity considering the role and benefits to the transport system outlined in the Best Practice review. Tourists, especially international tourists, likely expect there to be share cycles available for use. The CoA Customer Centre has advised that there are often visitors enquiries about rental cycles.

While usage indicates people using shared e-scooters are combining use with public transport, shared micromobility is not currently promoted in terms of integration with public transport, and there is no integration of ticketing.

6.2 Safety

Figure 18 summarises shared micromobility safety issues and potential mitigations identified, based on the Safe System approach and its pillars of safer streets (or infrastructure), safer speeds, safer vehicles and safer people, plus post-crash considerations, which is another pillar in some jurisdictions (and helps close the loop when crashes do occur).

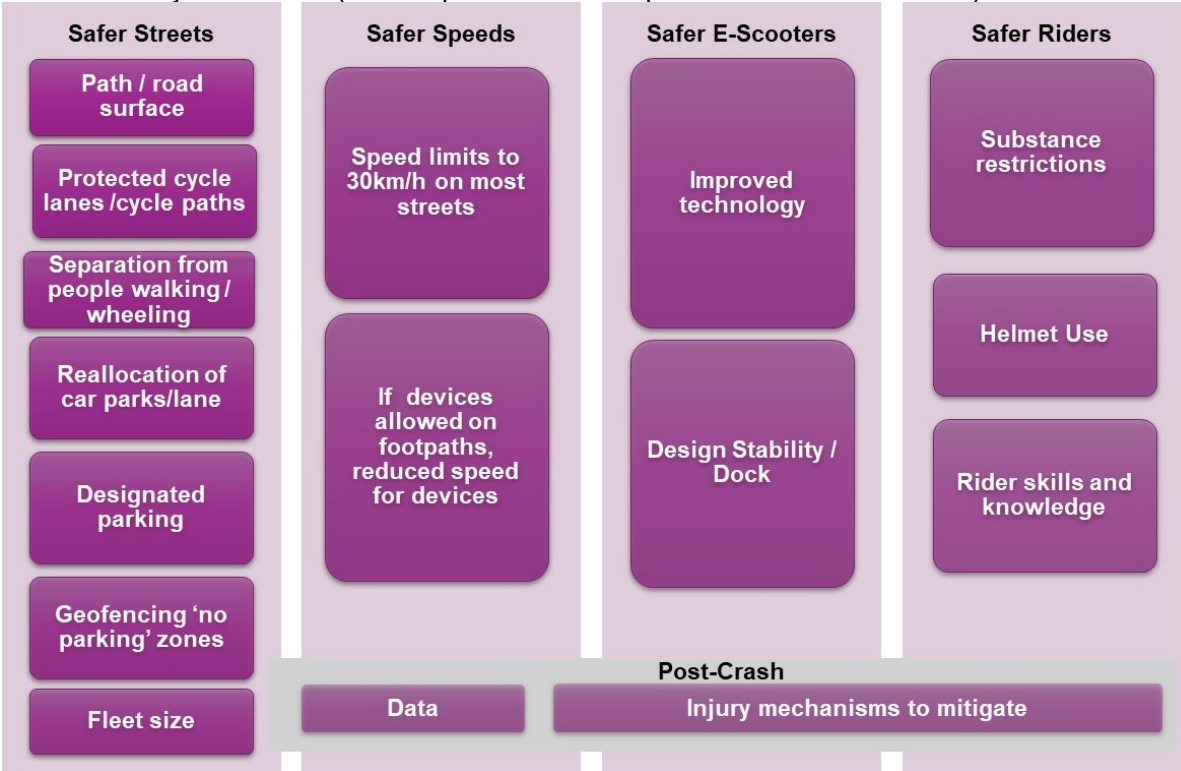


Figure 18 Safe System Pillars and Associated Issues and Potential Mitigations for Shared Micromobility

Safer Speeds

The current South Australian legislation requires people riding shared e-scooters to use the path network and to share space with people walking/wheeling, whilst limiting their use of certain types of local roads. As many of CoA's streets have multiple lanes and there is a default 50km/h speed limit in place, shared e-scooter use within CoA is mainly on footpaths.

Concern about use of shared e-scooters on footpaths is common in the community, particularly for people with disability. While crashes are uncommon, reports of 'near-misses' and general discomfort indicates the need for a better outcome. Without better provision for

greater levels of shared e-scooter use off existing footpaths, concerns from people walking/wheeling, especially people with disability, will increase.

There are existing measures that Council and operators have identified and implemented for better outcomes for current e-scooter use on footpaths. Current permit conditions allow Administration to request operators implement additional geofenced areas of 'no ride' and 'go slow' (10km/h) zones. Numerous 'go slow' zones have been implemented to address concerns in footpath lengths with kerbside dining or similar uses with a higher likelihood of discomfort/conflicts.

Safer Streets

With existing City speed limits and street layouts, current legislation prohibits e-scooters from travelling on most streets. This results in most e-scooter use being on footpaths, which can make people walking or wheeling feel uncomfortable. While there are some streets in CoA with 20km/h, some 10km/h shared zones and 25km/h school zones, speed limits are generally 50km/h and some Park Lands roads are 60km/h. The latter are not a Safe System outcome for cycling (or scootering on the roads, were it to be legal).

The State Government *may* change legislation allowing e-scooters on roads with speed limits up to and including 50km/h, however this would not be considered a safe outcome and research³⁷ suggests many people would still choose to use the footpath because they would be too fearful on-road. Research³⁸ also indicates that mixing driving and scootering at 50km/h will increase serious injuries on our streets.

The appeal of cycle share is limited by the quality of supporting infrastructure. Census data and cyclist counts taken within CoA indicate that women are cycling in significantly lower numbers than men. Research attributes this to women being more risk averse. Currently protected cycle lane and cycle path facilities in CoA are limited, so the lower numbers of women cycling and people cycling in general, are not unexpected.

Footpaths within the city are often too busy to cycle on. With few protected cycle lanes / cycle paths in CoA, people are often required to cycle on road, mixing with motor vehicles travelling at relatively high speeds. Without a comfortable environment for cycling, few people may choose to use cycle share, and it may not be financially viable. This is likely to have been a contributing factor to low usage of devices deployed by operators in CoA and operators deciding to discontinue cycle share operations in Adelaide.

Safer Streets - Parking of Devices and Fleet Size

Parking of devices is one of the key issues for shared micromobility. As highlighted by respondent feedback to the YourSay Adelaide E-Scooter Parking Trial and the Best Practice Review, spacing of designated parking, or restrictions on parking need to consider user convenience, and especially in residential areas, implications on safety issues and accessibility (including with a gender perspective).

The experience of the e-scooter designated parking trails on O'Connell St and Currie-Grenfell led to the conclusion that use of decals to mark out a node on the pavement is not an effective or user-friendly long-term solution. Stakeholders have identified an issue relating to the poor stability of parked e-scooters and their tendency to be easily knocked over and cause an obstruction, particularly for people who have difficulty in righting a fallen e-scooter. Solving the inherent instability through vehicle design is limited, with a practical solution being the use of a docking system.

³⁷ The e-scooter gender gap – Jennifer Dill, Ph.D.

³⁸ Cloud, C., Heß S. & Kasinger, J. (2023). Shared e-scooter services and road safety: Evidence from six European countries, *European Economic Review*, 160
<https://doi.org/10.1016/j.euroecorev.2023.104593>

With a view to improve convenience and increase ridership, micromobility parking has generally been permitted throughout the council area but on selected streets has been prohibited and on other streets confined to designated parking areas (parking nodes). Customer feedback and engagement undertaken for the CoA e-scooter parking trial highlight that placement of shared micromobility devices is a community concern (although it is reiterated that the extent of improper e-scooter parking may be over-estimated¹⁶).

Fleet size contributes to people's perceptions of 'clutter' (as well as contributing to other management issues). CoA has recently updated permit conditions with fleet deployed varying with seasons, with a potential to increase the number of devices deployed during events. The fee permit structure also incentivises optimising device deployments.

Safer Vehicles (Devices)

In South Australia, e-scooter devices are restricted to a maximum (without rider) weight of 25 kg. The operators have highlighted a difficulty in accommodating the technology needed to improve geographic location accuracy to comply with area-based speed and parking regulations, as well as to achieve the vehicle recycling targets, to allow larger wheel sizes and other vehicle safety features. Interstate, there are different weight limits. For example, in Queensland 60kg is the maximum, while in Tasmania it is 45kg. Weight limits are set by the State, so Council's role on this issue is advocacy.

Safer People – Information for Better User Behaviour

The current permit conditions require operators to undertake education campaigns and provide users with information via the app. The e-scooter weight limits also limit the technology on the vehicles and the ability to inform users about when they are parking improperly.

Post-Crash Considerations

Experience of CoA Admin, discussions with interstate colleagues and review of literature highlights that monitoring and improving shared micromobility programs can be a full-time role (with some cities having multiple staff members on shared micromobility). Administrative time is needed to review the range of data available about shared micromobility, from Ride Report and operators' reports. This data includes usage, device deployment, sustainability outcomes and incidents. Having a resource with time to dedicate to monitoring would likely improve operational and safety outcomes and improve community experience.

6.3 Commercial Competition and Management Considerations

While CoA does not directly operate cycle share or shared e-scooter schemes (instead permits are issued to commercial operators), there is a need to consider the Council resourcing of tendering, permitting and administration of the schemes. Discussions with councils around Australia indicate that management of schemes can be quite resource intensive when re-tendering schemes and if there will be likely ongoing issues such as customer complaints (for example around footpath use). When Council has limited resources and budget, we need to consider the opportunity cost of shared micromobility: the time and money put into shared micromobility that could be put into other transport efforts, and the relative costs and benefits, including strategic alignment.

Therefore, there needs to be a balance between commercial competition and managing too many operators, and consideration of fees with respect to Council administrative effort. A fee of \$1 per e-scooter per day was in the Melbourne shared e-scooter agreement. It is noted

that the fee is, “to contribute to costs incurred by the Councils in the management and oversight of the trial and shared E-scooter service.”³⁹

The trip data from the City of Unley and City of Norwood Payneham and St Peters indicates that many trips are to or from the City of Adelaide, so the viability of shared e-scooter operations is linked to Councils issuing permits to the same operators. Likewise, cycle share becomes more viable as people can cycle to more areas. It is recommended that for operational and management benefits that CoA discuss the Policy and permit conditions with Administration in surrounding councils. A joint tender with other councils for shared micromobility operators should also be considered.

6.4 Accessibility and Gender Equity

Shared micromobility can facilitate independent travel for some members of the community. While poorly placed devices or inappropriate use can disproportionately impact people with disability, micromobility can be an option for some people who are otherwise unable or unwilling to walk their trip within the city. The YourSay Adelaide engagement for the e-scooter parking trial heard from people with disability and women who noted that shared e-scooters have increased accessibility. For example, they noted shared micromobility enabled them to go out at night, as they feel safer moving through the city by e-scooter than by walking.

CoA does not currently undertake surveys of e-scooter users to understand levels of use by different people within the community. Doing this research may help us understand barriers to more people using shared micromobility and mitigate those barriers.

Women and older people may feel less confident using shared e-scooters and cycles and/or the apps to rent devices. CoA should require operators to detail inclusive education programs and training sessions to assist these groups.

The fleets of e-scooters being deployed in Adelaide are all ‘standard’ e-scooters. There are more inclusive devices available, including seated e-scooters (Figure 19). Beam reported⁴⁰ that trips taken using seated e-scooters in Auckland, were 30% longer

³⁹Shared E-Scooter Services Trial: Commercially operated share scheme (COSS)

⁴⁰Beam introduces shared seated e-scooters to Tauranga Beam January 2024



Figure 19 Seated E-Scooters (Beam)

7. WHAT ARE OTHER CITIES DOING?

Many cities have achieved a high level of cycle-train integration, including with cycle share schemes, which presents people with a more attractive and competitive choice to driving.

Cycle Share with Government Support and Equity Considerations – London^{41 42}

The London cycle share scheme was initiated by the then mayor of London, Ken Livingstone. Transport for London (TfL) developed the cycle hire scheme in 2008, building on the experience of other European cities, to provide a readily accessible, affordable and healthy way to travel, and help address the cost and issues of congestion in London. The scheme integrates with the extensive London public transport system. The current scheme is sponsored by Santander and is operated by Serco for TfL, who invest in managing the scheme, as well as developing the cycleway network to support cycle share and broader cycling uptake.

The Santander Cycles scheme aims to promote sustainable transport options and address lack of access to bikes, which can be a significant barrier to cycling. Competition with free floating cycle share schemes (which came with parking management issues) contributed to a drop in usage in recent years. Pricing has been restructured in 2024, to make it more affordable and increase frequency of use.

The scheme has more than 12,000 bikes, including over 1800 e-bikes. These bikes can be hired from £3 a day with unlimited 30-minute rides. There are various Santander Cycles discounts to increase accessibility for different people, including students, graduates and people holding concessions. Employers can sign up so employees using Santander Cycles

⁴¹ <https://tfl.gov.uk/modes/cycling/santander-cycles>

⁴² [London's Cycle Hire Scheme | Centre For Public Impact \(CPI\)](#)

to work save money through a tax-free annual subscription. National Health Service (NHS) employees also get a 50% discount on an annual subscription.

Device parking is managed using around 800 docking stations across inner and central London. Staff are present to assist customers and ready bikes at five high demand docking stations, such is the scale and usage of the scheme.

An academic review of the scheme⁴³ concluded that it has achieved its aim to promote cycling and benefitted public health and the transport network resilience, including to public transport disruptions. The review also highlighted that with revised, inclusive pricing structures, there is a strong policy message that the cycle share scheme is an equitable public service.

Better Managed Shared Micromobility - Wandsworth Council, South London⁴⁴

Wandsworth Council supports shared e-bikes as a 'convenient travel option...clean and sustainable way of getting around and [they] help to improve local air quality'* but realised that devices left on footpaths in busier areas were impacting people walking/wheeling. Wandsworth Council has a hybrid system for shared e-bike parking. In busier town centre areas it is mandatory for people to park devices in a designated bay (Figure 20). In quieter parts of the council area, people are encouraged to use designated parking areas (bays) but 'free-floating' parking is still allowed. One of the reasons cited for this decision is to enable people, especially women, to feel safer and park close to home at night. Wandsworth Council has installed over 100 parking bays for shared micromobility across the council area (which is about 34km²).



Figure 20 Shared Micromobility Parking Bay in Wandsworth Council, London⁴⁵

⁴³ [Lessons from thirteen years of the London cycle hire scheme: A review of evidence - ScienceDirect](#)

⁴⁴ [Wandsworth Council to ban leaving e-bikes on pavements | Evening Standard](#)

⁴⁵ <https://haveyoursay.citizenspace.com/wandsworthecs/ee-p2-24/>

8. OPPORTUNITIES

How can Adelaide benefit?

Many people would like to cycle, but do not feel safe enough to do so ⁴⁶. People have a strong preference for protected cycle lanes and cycle paths, for safety throughout their journey⁴⁷. **Error! Bookmark not defined.** Similarly, people using e-scooters seek conditions where they feel safe. Investing in a micromobility network and better shared micromobility parking management will mean more people can choose to cycle and use shared micromobility, while creating better outcomes for people walking and wheeling.

The following key opportunities (or principles) are suggested to be considered for the ITS development:

8.1 Supporting and Enhancing the Roles of Shared Micromobility

Supporting shared micromobility is a way to support transport diversity and reduce car use, though use on its own and with public transport, and as a pathway for mode shift. This can help achieve strategic objectives to

- reduce emissions;
- increase road safety; and
- support city population, visitor and worker growth.

Integrating Shared Micromobility and Public Transport

Shared micromobility has the potential to play an important role as part of an efficient, sustainable and integrated transport network. It is suggested that integration of shared micromobility with public transport is developed and that CoA work with DIT to explore opportunities for combined ticketing or promotion of public transport and shared micromobility.

Supporting Economic Growth

Shared micromobility can increase business activity, support events and visitor trips within the city. Reintroducing cycle share to Adelaide presents an opportunity for the transport system and for recreation and tourism. CoA has unique Park Lands and cycle share could be promoted for tourists to cycle around the Park Lands Trail.

8.2 Improving Safety and Comfort

Safer Speeds and Safer Roads

As noted in the Best Practice Review, some micromobility riders will choose to use footpaths even when it might be legal to use the road, if they do not feel safe. Women are more risk averse, so for more inclusive and equitable outcomes, suitable, safe street outcomes are key. If CoA wants to provide comfortable conditions for people walking/wheeling and for people cycling/scooter, it is important that streets have Safe System aligned provision for micromobility:

⁴⁶ L. Pearson, B. Gabbe, S. Reeder & B. Beck (2023) Barriers and enablers of bike riding for transport and recreational purposes in Australia

⁴⁷ City of Melbourne Transport Strategy Discussion Paper – Bicycles for Everyday Transport
https://participate.melbourne.vic.gov.au/download_file/4287/1349

- Protected cycle lanes or cycle paths
- Mixed traffic conditions on lower volume streets (with Safe System aligned speeds)
- Safer crossings and intersections.

Cycle paths can legally be used by people using mobility scooters and wheelchairs. Implementing cycle paths therefore presents an outcome with multiple benefits for people with disability (with reduced footpath use by people cycling/riding e-scooters too).

It is vital that routes connect with safe crossings and intersections. CoA should seek primary Safe System outcomes, such as wombat crossings (Figure 21). Primary Safe System road designs are those which practically eliminate the risk of death and serious injury.



Figure 21 A Wombat (Raised Zebra) Crossing on War Memorial Drive at the Frome Road Roundabout

Safer Streets - Device Parking and Fleet Management

While initially operators may have thought that the free-floating, or dockless model was best, it is now recognised⁴⁸ that there are multiple benefits to having designated parking, including:

- more efficient management and fewer movements of devices (to redeploy in preferred locations and/or to recharge batteries – if charging possible as part of docking system) so
 - reduced labour costs for operators (and cost of fuel when movements are done by vans)
 - increased sustainability
- improved relationships with councils and the community
- better legibility and safety for footpath users
- ability to consider street space optimisation and where device parking is needed and not taking space or impeding more important (strategically aligned) uses.

⁴⁸ Feedback from Neuron and Beam. CoA E-scooter Parking Trial 2022.

Zukowski, D. Smart Cities Dive article published 5 September 2024 [Why Lyft is doubling down on docked bikes, scooters | Smart Cities Dive](#)

Parking nodes or hubs provide a level of predictability and will become known locations for good device availability. CoA needs to consider the potential issues and opportunities for co-locating micromobility and exploring potential synergies/co-location with car sharing bays, plus public transport. At key locations, including the Adelaide Central Market and the Adelaide Railway Station, installing hubs would increase the prominence and convenience of micromobility, and mean adequate space allocation is planned, for better outcomes for all users of the public realm. International visitors especially would reasonably expect cycle share to be available from the Adelaide Railway Station, as it is in many international cities.

Shared micromobility can be used to by people at night to increase safety, to get home faster or if needing to travel around areas they feel unsafe, if living in the city, or if using to get to/from a public transport stop. It is suggested that designated parking nodes/hubs could be identified at locations for public transport interchange and where there is CCTV coverage and/or passive surveillance, and locations be promoted to support safer city outcomes and for more people to feel safe and enjoy the city at night. This would be a positive outcome for women especially.

CoA's permits for commercial micromobility operators include conditions about the need to collect and redistribute devices that might be potential hazards or are poorly located, if they have not been used for extended periods of time or if numbers exceed limits within certain areas. Moving towards having more designated parking would allow more efficient operator collection and redistribution of vehicles, reduce potential hazards from misplaced devices and create more legible, organised micromobility parking.

Shared micromobility parking could be determined based on street typologies. Appendix C indicates a potential parking management outcome for shared e-scooters, with typologies defined by the Adelaide Design Manual. Following Movement and Place network mapping for the ITS, a map proposing shared micromobility management can be developed.

Safer Vehicles (Devices)

CoA will continue to advocate to the State about changing weight limits to allow better device technology and associated safety benefits.

CoA (potentially with other councils) when tendering for operators might consider device requirements not set by the State, such as

- durability and component lifespan/recycling
- audible messages from devices
- battery management and charging (which may depend on whether docks include charging).

Safer People

Operators are already required under the permit conditions to provide information and education to shared micromobility users. Information from operators, such as prompts via the app and ongoing education campaigns, will encourage better micromobility user behaviour. CoA can advocate to the State about weight limits and the potential for better technology to be used to provide further information to users.

8.3 Managing Schemes for Strategic and Community Benefits

Cycle share use was low in Adelaide (with low levels of promotion from State and Council) and without financial viability, operators pulled out. Permit fees for cycle share need to be considered carefully with respect to supporting ongoing operation and wider benefits to the city in terms of the transport system and liveability, and tourism and recreation. Permit fees for shared e-scooters should consider resourcing and infrastructure costs to CoA, cost-

recovery and retaining the pricing structure to discourage the oversupply of devices (which has recently been introduced).

Two commercial operators for shared e-scooters and cycle share are recommended to maintain a competitive environment that promotes a customer focused outcome. Working with more than two operators (per micromobility type) will also increase the workload on staff. Tendering of both cycle share and shared e-scooter schemes is suggested to be done simultaneously but separately, as some cycle share operators do not operate e-scooters.

Shared micromobility trips between CoA and other council areas provides people with another option rather than driving. For this to be possible, adjacent councils need to have issued permits to the same operators. Having the same commercial operators may result in efficiencies from an administrative perspective too, with jointly agreed permit conditions and management. CoA will need to work with other interested councils to develop any policies and permit conditions and explore joint tendering.

Ongoing Monitoring and Engagement

To enable continuous improvement and to maintain community acceptance, regular meetings should take place between Administration, the commercial operators and key stakeholders, including the CoA Access and Inclusion Advisory Panel.

Partnerships

Some entertainment and accommodation businesses have expressed a desire to host micromobility vehicles as a value add to their facilities to encourage increased visitation and business success. Commercial operators should demonstrate a strategy to encourage partnerships with businesses.

8.4 Supporting Accessibility and Equity

Implementing a safe micromobility network of cycle paths and safer streets, including safer intersections and crossings, will help address the gender gap in use of micromobility (both of shared micromobility and personal cycling). As women are more risk averse and likely to choose to ride or cycle on footpaths if cycle paths or safe on-road conditions are not provided, this also has implications on outcomes for people walking/wheeling. Designing better streets, through application of the Healthy Framework (as outlined in the Cycling and Cycle Parking Discussion Paper), will create more inclusive and equitable conditions for people walking/wheeling, scootering and cycling.

As identified in the TfL cycle share scheme example, cycle share can be an equitable public service. CoA could set requirements (when tendering and in the permit conditions) for operators to

- share usage data and additionally undertake annual surveys over a period of a week, to obtain demographic information about users, so Council can monitor outcomes and understand better who is using shared micromobility and why/why not.
- provide inclusive devices, such as e-scooters with seats, as part of their fleet.
- establish and promote safer shared micromobility nodes/hubs to support night time accessibility for women and gender diverse people.
- provide monthly passes and discounted single trips for low income earners.

9. KEY STRATEGIC MOVES

Seven **key strategic moves** have been identified to support and improve shared micromobility, based on the issues and opportunities identified from research for this paper and from what we have heard from the community through previous engagements:



Optimise our streets to create safe corridors for people to use micromobility devices (shared and personal) with managed parking provisions on busy City Streets to ensure there are comfortable spaces for people walking and wheeling.



Manage parking through designated parking bays or docks in busier areas. Provide some designated parking in quieter residential areas but have allowances for 'free floating' parking for safety and inclusion.



Establish micromobility networks to improve connections with key destinations (including public transport). Identify 'no go zones' (streets and paths where scooting and/or cycling are to be excluded).



Lower speed limits to promote and enable safer on-road micromobility conditions and minimise potential conflicts on footpaths with people walking and wheeling.



Integrate shared micromobility with public transport through creating micromobility hubs at public transport interchanges and stations. Joint promotion and pricing structures could also be explored with State Government and micromobility operators.



Have operators deploy **more inclusive devices** such as e-scooters with seats to improve accessibility and enable longer journeys for more people. Investigate **schemes for different pricing models** to promote shared micromobility as a viable transport option for people with limited existing transport means.



Make improvements to recreational trails within the Park Lands to promote shared micromobility as a tourism activity that enables visitors to explore the Park Lands and adjacent city destinations.

10. CONCLUSION

With the aim to increase the population of city residents, workers and visitors, shared micromobility creates a unique opportunity to reduce the current over-reliance on the private motor vehicle. A reduction in the number of private motor vehicles travelling in the City will improve conditions for all road users including people who need to or choose to use motor vehicles, and public transport passengers.

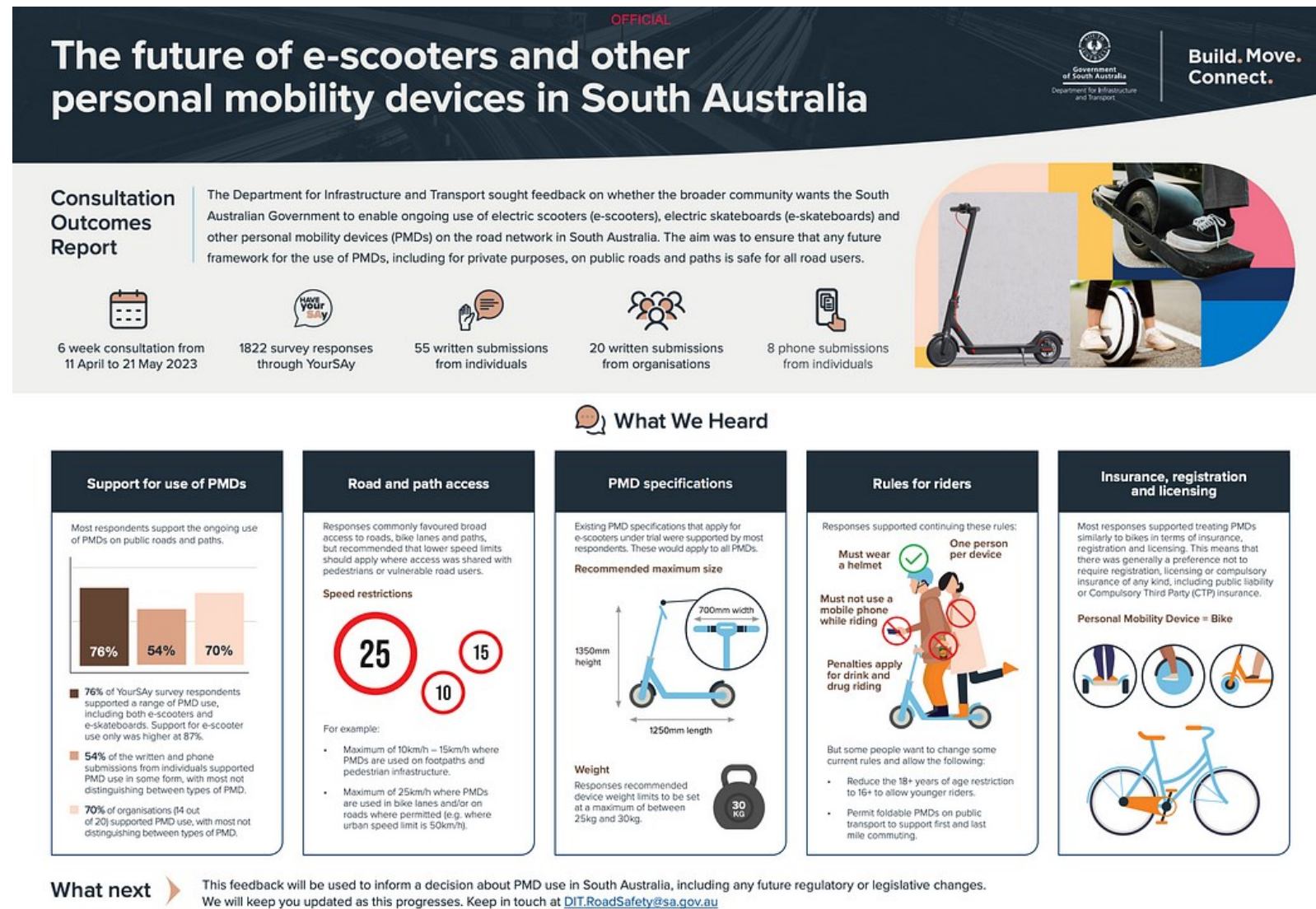
To increase e-scooter patronage and provide comfortable conditions for more people to cycle and more viable conditions for cycle share, and without potentially increasing crash injuries, a better micromobility transport network is a key requirement. Further parking management is also important. The network needs to meet the expectations of users, and to promote shared micromobility as a viable transport option for more people. A network of protected cycle lanes/cycle paths is needed on busier streets, together with streets with safer speed limits and reduced motor vehicle volumes so micromobility and motor vehicles can mix safely. This way more people can feel safe and generally choose not to use the footpath, which is a beneficial outcome for people walking/wheeling too.

APPENDIX A: SELECT COMMITTEE ON PUBLIC AND ACTIVE TRANSPORT - SUMMARY

Recommendation		Implication for CoA
1	The Committee recommends that state government reviews its policies and processes to ensure that public transport services and infrastructure improve with regard to:	
c)	Better integration of different modes of transport, taking advantage of the opportunities that technological advances offer	Plan for integration of shared micromobility with car share and public transport.
5	The Committee recommends that state government should review and develop:	
a)	targets for increasing patronage of active travel, and action or implementation plans to ensure those targets are met;	Consider setting targets for shared micromobility use.
b)	regular monitoring and reporting on targets for increasing patronage of active travel; and	Monitor uptake of cycling/purchase of e-bikes following use of shared e-bikes
c)	specific strategies focussed on safety of cyclists and pedestrians.	Implement dedicated facilities for people walking/wheeling and those cycling/riding. Undertake speed limit review.
6	The Committee recommends that state government (in collaboration with local government and other stakeholders):	
a)	conducts trials of (hard) separated bike infrastructure on some metropolitan and/or regional roads;	Implement trial cycle path for use by riders and cyclists within CoA.
b)	conducts trials of traffic calming measures (including speed limit reductions) to improve safety for pedestrians and cyclists; and	Consider traffic calming and measures to improve outcomes for people walking/wheeling and cycling and riding when undertaking speed limit review.
c)	commences planning for a state-wide, integrated, separated cycling network.	Develop Movement & Place maps, including a cycling map, and consider high use e-scooter routes (and associated issues for footpath use, which may be addressed by cycle paths or other street changes to enable e-scooter use off footpaths).
7	The Committee recommends that state government, in collaboration with local government and other stakeholders:	
a)	legislates to enable use of privately owned e-scooters and other e-personal mobility devices in public spaces, in line with other state jurisdictions;	If private e-scooters are made legal, the need for better infrastructure and speed limit changes will become more critical to avoid impacts to people using footpaths.
b)	considers adopting definitions of e-scooters and other e-personal mobility devices consistent with National Model Law;	Continue to meet with DIT and monitor changes.

Recommendation		Implication for CoA
c)	considers ways that e-scooters and other e-personal mobility devices may be safely moved into bike lanes on roads without compromising the safety of cyclists or device users;	Implement cycle paths (cycleways) with widths that better accommodate safe, comfortable cycling and riding.
d)	reviews speed limits of e-scooters and other e-personal mobility devices on footpaths to better protect the safety of pedestrians; and	Work with operators to confirm use of geofencing to limit speed limits in certain zones or streets, both permanent and for events.
e)	gathers data on the use of private and commercial e-scooters and other e-personal mobility devices, including compliance and injuries to pedestrians and riders.	Maintain ongoing monthly record keeping. Circulate to and discuss with DIT and other councils. Undertake surveys to better understand use of micromobility as part of the transport task, and in terms of gender, disability and age issues.
8	The Committee recommends that the matter of compulsory third party insurance for private and commercial e-scooters be referred to the Attorney-General for review and advice. The Committee recommends that the state government resolves:	
a)	the classification ambiguity regarding commercial and private use of e-scooters, specifically whether they are to be regarded as a motorised vehicle or as a bicycle; and	Operators have now upgraded insurance coverage to cover riders who have not been obeying the rules or pedestrians who are injured by them.
b)	outstanding matters regarding high insurance excess amounts, easily voided insurance policies, and the power of e-scooter providers in deciding the outcome of insurance claims.	

APPENDIX B: STATE GOVERNMENT PMD ENGAGEMENT SUMMARY



APPENDIX C: POTENTIAL MANAGEMENT OF E-SCOOTERS BASED ON TYPOLOGIES

Adelaide Design Manual Street Typology		Potential Principles for Route Infrastructure
Boulevards	Provide convenient connections between cultural and educational institutions, shopping destinations and businesses catering for a range of transport options	<i>Ceremonial Boulevards</i> provide wide expanses of paved area that are expected to accommodate slower e-scooter speed (10 km/h) shared operations. <i>Gateway Boulevards</i> that traverse the Park Lands provide an important connection to the adjacent trial Council areas, strengthening the viability of their micromobility operations. Where part of the Strategic Cycling Network, and prioritised through engagement with the neighbouring trial Councils, 4m wide paths are to be installed. 10 km/h speed limits for paths located near playgrounds, and time based 10 km/h speed limits for paths located near events, sporting clubs and schools. <i>Transit Boulevards</i> experience high pedestrian activity, with footpath space at a premium. These boulevards are also popular e-scooter routes but due to the high levels of pedestrian activity the footpaths are less suitable for micromobility vehicles. Alternative parallel routes will need to be identified and infrastructure upgraded, including connections to the Transit Boulevards, or potentially cycle paths implemented on the boulevards. 10km/h should be considered otherwise.
Local streets and village streets	Often mixed use or predominantly residential streets, often with lower motor vehicle traffic volumes.	Through advocacy State Government, a change in legislation should be sought to permit e-scooters to be ridden on streets with 30km/h or lower posted speed limits – and this speed limit change could be sought through the speed limit review. Speed limits of 25 km/h would be allowed for on-road device use.
Small streets and laneways	Small Streets and laneways are characterised by their narrow footpaths. Generally, footpath widths are less than 1m with useable space further reduced by street furniture.	Through advocacy State Government, a change in legislation should be sought to permit e-scooters to be ridden on select small streets and laneways (with 30km/h or lower posted speed limits). Speed limits of 25 km/h would be allowed for on-road device use. As part of the asset renewal program and where strategically important, small streets and laneways should be converted to shared zones. E-scooters will be restricted to a 10 km/h speed limit in shared zones.
Squares		Light Square/Wauwi, Hindmarsh Square/Mukata and Victoria Square/Tarntanyangga have public transport functions. Upgraded connections to these squares are required, including road crossing facilities.

Adelaide Design Manual Street Typology		Potential Principles for Route Infrastructure
Park Lands	May form the edge of the operating area (if adjoining councils do not permit shared micromobility operators) and are the natural location for riders following the Gateway Boulevards to park before proceeding on foot or by public transport to the adjacent residential areas.	Generally, the Park Lands adjacent to the Gateway Boulevards, such as Jeffcott Rd and Prospect Road, are expected to have sufficient path space to accommodate movements. The Park Lands host a network of paths primarily used for commuting and leisure purposes. To improve connectivity with neighbouring Council areas, existing paths that have strategic value (high Movement and Place walking/cycling/micromobility value) should be upgraded, and new paths provided based on strategic need. Upgrades will include widening paths and providing path lighting. A 25 km/h operating speed should be considered for commuter paths, reduced to 10 km/h where paths are located near playgrounds, and time based 10 km/h speed limits for paths located near sporting clubs, events and schools..
Public transport hubs		To compliment the trend of e-scooters as the first and last leg of a public transport commute, connections from the surrounding micromobility network to public transport associated parking nodes should be provided. Slow zones of 10 km/h for e-scooters should be considered within 50m of public transport stops, stations and interchanges.
Retail Streets - local	Provide a connection to diverse street uses making them dynamic in nature with various types of social and commercial exchange.	The use of Retail Streets by e-scooters will in general be permitted but at the operating speed of 10 km/h and available clear footpath width should be assessed on a case by case basis.
Retail Streets – High activity	Have a high intensity of activity and are particularly vulnerable to the loss of footpath space.	Use of e-scooters and cycles in Rundle Mall and Hindley Street on weekend nights is not permitted, and operators apply geofences reflecting the restriction on use.

Potential Management of Shared Micromobility Parking

02 Street Typologies

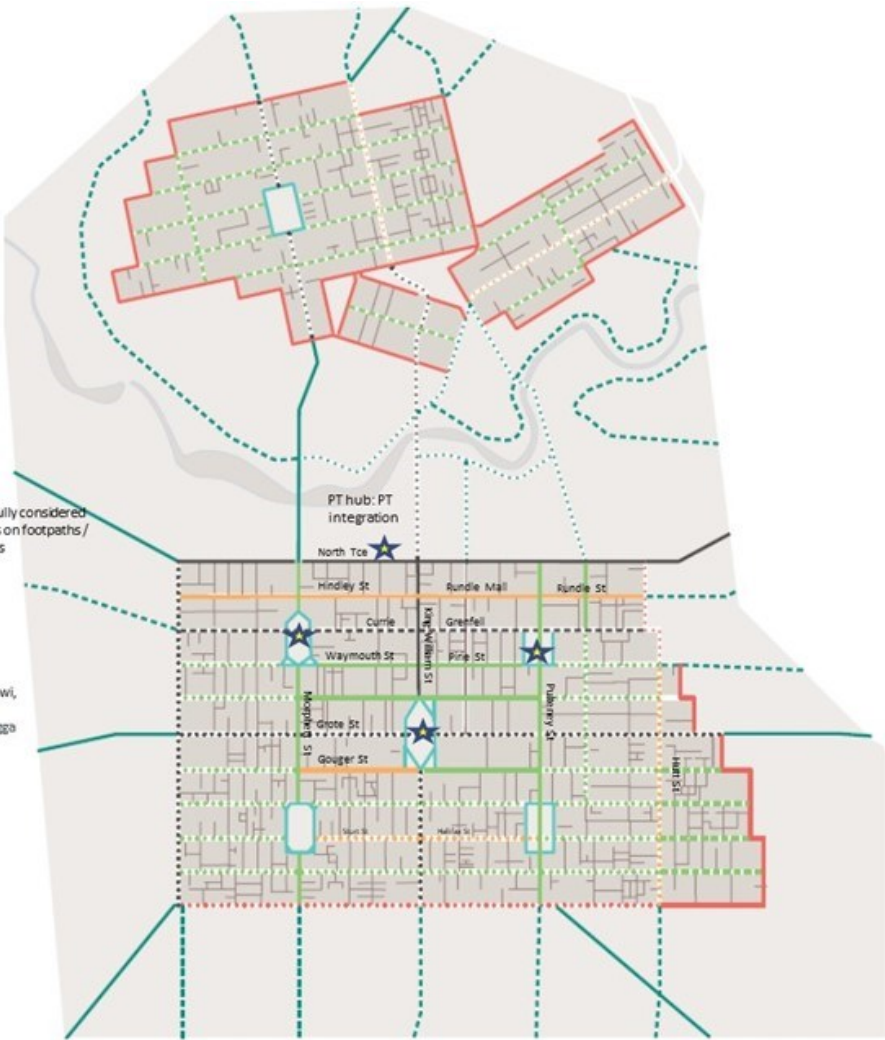
Each street type prioritises people and design elements based on the context and character of the street, in order to provide assistance that will help to inform the selection of appropriate materials, elements and design approaches for each street.

- 1. Boulevards**
Defined by a grand scale, many of these are 40 metre wide streets acting as gateways to the city.
- 2. Terraces**
The unique transition and contrast between buildings and the city's residential and Park Lands areas.
- 3. Retail Streets**
Retail Streets are dynamic, and vibrant, making them economically prosperous and socially rich.
- 4. Streets**
Traditionally mixed use, Streets share a broad function from residential, commercial, retail and institutional and provide connection to the wider city.
- 5. Squares**
Reinforcing the city's grid pattern, Squares provide local identity, recreational opportunities and reflect the character and uniqueness of each location.
- 6. Park Lands**
Signaling entry to the city, the Park Lands play an important role in creating the unique vistas of the City of Adelaide.
- 7. Small Streets and Laneways**
Encouraging connections and enabling activities, Small Streets and Laneways contribute to the liveliness and diversity of the city.

Street Typology Map



Carefully considered nodes on footpaths / corrals



Suggested in Shared Micromobility Discussion Paper to have:

- ★ Parking nodes/hubs
- ★ No parking (unless minimum clear walking/wheeling widths can be achieved, or use node/hub near end)



Street Typology Map