

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

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Inquiry into the use of e-scooters, e-bikes and related mobility options

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Executive summary

Across the world, emerging technologies are changing the way people move around their communities. The number of people riding electric-powered small devices like e-scooters and e-bikes is on the rise.¹ In New South Wales (NSW), there has been a 322% increase in e-bikes purchased between 2020 and 2022, supported by falling costs. In addition, around a million residents have ridden an e-scooter.²

The [NSW Active Transport Strategy](#) recognises the potential for e-micromobility to be a safe, sustainable and accessible transport option for the people of NSW. There is potential for e-micromobility to:

- support communities that have historically experienced transport disadvantage, including vulnerable community members
- enable connected journeys with public transport and supplement public transport services where this infrastructure and/or services are more dispersed
- reduce car dependence providing potential financial benefits to individuals
- increase rates of high-school students riding, linking them to jobs, reducing congestion in school zones and improving their physical activity
- improve the efficiency of roads and streets
- encourage active transport uptake by people who would not otherwise consider cycling at all and in areas that may otherwise be too remote, dispersed or hilly
- reduce congestion and the number of kilometres travelled in cars, cutting greenhouse gas emissions
- improve air quality for NSW and reduce noise, leading to community health benefits
- provide improved access to local jobs, services and community centres
- boost economic outcomes
- provide safe options for night workers and patrons to get home (when they haven't been consuming alcohol), particularly for women and gender diverse people
- support social interaction and enhanced wellbeing
- be a viable and efficient option for last-mile freight.

At present, in NSW:

- permitted e-bikes³ can be used on public roads and road-related areas. This includes e-bikes available through sharing scheme operators
- privately owned e-scooters can only be used on private property in NSW. They cannot be used on roads or road-related areas, including footpaths, shared paths, bicycle lanes and bicycle paths

¹ The Australian cycling and e-scooter economy in 2022, We Ride Australia

² The Australian cycling and e-scooter economy in 2022, We Ride Australia

³ Permitted e-bikes are detailed online: [E-bikes | Transport for NSW](#)

- shared e-scooters are only allowed in designated trial sites operating as part of the NSW Government's Shared E-scooter Trials Program for a specified period. Parameters and rules are in place to support trial operations, and this included limiting the use of the shared e-scooters to roads where the speed limit is 50 km/h or under, shared paths and bicycle lanes and paths.

The NSW Government recognises there are intersecting complex issues to be managed to support the increased uptake of e-micromobility. This includes:

- safe use (riders, pedestrians and road users)
- lithium-ion battery safety
- device standards
- battery and device lifecycle management
- infrastructure, parking and public space management and amenity
- insurance
- data and research
- collaboration and coordination.

Recognising the urgency of these issues, and to ensure a collaborative and comprehensive response, in May 2024, Transport for NSW (Transport) established an E-micromobility Interagency Group (the Interagency Group) with representatives from 13 NSW Government agencies.

The formation of the Interagency Group built on collaborative cross-government efforts of an interagency oversight group in place to support the NSW Shared E-scooter Trial Program.

The Interagency Group is working together to ensure the potential environmental, social, and economic benefits of e-micromobility are realised and related issues are addressed.

By responding to the emergence of e-micromobility in a way that encourages and fosters positive effects and manages any negative impacts – there is the opportunity to create economic and environmental benefits and address social and transport inequities.

In June 2024, the E-micromobility Interagency Group established a goal for e-micromobility in NSW:

Promote and enable e-micromobility as a safe, sustainable and accessible transport option for the people of NSW.

A NSW Government E-micromobility Action Plan is also taking place, capturing activities across the NSW Government in five key areas:

- policy and regulation
- education and engagement
- infrastructure and street design
- data and research
- coordination and collaboration.

We welcome this Inquiry, which will help to surface additional considerations and opportunities to support the increased safe use of e-micromobility devices in NSW. Following the publication of the Inquiry's report and Government response, the Action Plan will be updated with any additional activities needed to support e-micromobility across the State.

The case for change

Growth in demand and use

By responding to the emergence of e-micromobility in a way that encourages and fosters positive effects and manages any negative impacts – there is the opportunity to create economic and environmental benefits and address social and transport inequities.

In 2022, 13% of bikes sold in NSW were e-bikes. As shown in **Table 0-1**, there has been a 322% increase in e-bikes purchased between 2020 and 2022, supported by falling costs.⁴

Table 0-1 Purchasing of e-bikes in NSW and Australia

Year	# of e-bikes purchased (NSW)	# of e-bikes purchased (Australia)	Average price
2022	71,548 (+322%)	193,061 (+256%)	\$2,533 (-16.4%)
2020	16,920	54,157	\$3,031

In addition, research has shown around a million NSW residents have used an e-scooter at some stage. This includes people who have ridden an e-scooter in another jurisdiction.⁵

There has also been strong demand experienced in most sites participating in the NSW Government Shared E-scooter Trials, with over 300,000 trips taken between December 2022 and June 2024 (refer **Attachment A: Shared E-scooter Trial data**).

Potential benefits of e-micromobility

Social benefits and social and transport equity

Transport has been reviewing and researching e-micromobility uptake and policy across other jurisdictions.

This research has shown:

- emerging evidence that e-micromobility can support communities that have historically experienced transport disadvantage.
- e-bikes can potentially provide new transport options for people with a disability.⁶
- the availability of devices and supporting regulatory environment can improve independence and mobility outcomes for some of our most vulnerable community members.⁷

E-micromobility can particularly provide important first and last-mile mobility solutions in neighbourhoods where public transport infrastructure is more dispersed. This was evidenced through the interim evaluation of Shared E-scooter Trials in NSW. As part of the evaluation, interviewees from participating communities noted that the shared e-

⁴ The Australian Cycling and E-scooter Economy in 2022 – 2023 Report, We Ride Australia, 2023

⁵ The Australian Cycling and E-scooter Economy in 2022 – 2023 Report, We Ride Australia, 2023

⁶ Lee, Kyuhyun, and Ipek Nese Sener. "E-bikes toward inclusive mobility: a literature review of perceptions, concerns, and barriers." *Transportation research interdisciplinary perspectives* 22 (2023): 100940.

⁷ Leger, Samantha J., et al. "'If I had a regular bicycle, I wouldn't be out riding anymore': Perspectives on the potential of e-bikes to support active living and independent mobility among older adults in Waterloo, Canada." *Transportation research part A: policy and practice* 123 (2019): 240-254.

scooter service was supplementing public transport services. The feedback particularly focused on journeys between the University of Wollongong and the City Centre in that trial location.

Better placement of shared mobility near bus stops could encourage their combined uses and increased uptake. Shared mobility programmes can be a way to increase access to mobility to those without a car or in areas not as well-served by public transport.

Interim results from the NSW Government's Shared E-scooter Trials show that 30-50% of trips were for leisure, creating opportunities for social connection.

Liveable places and reducing car dependence

Regulation of both private and shared use influences how e-micromobility contributes to the mobility and placemaking objectives of a city or centre⁸.

As part of the mobility mix, e-micromobility can increase the ability to make local trips without the need for a car, supporting the development of neighbourhoods that are less car dominant (i.e. including reducing the demand for parking spaces).

Our Shared E-scooter Trials, predominately located in regional areas across NSW, have demonstrated that, on average, 5% of e-scooter trips would otherwise have been in a car, and about 27% of trips are new.

In the first metropolitan trial area in Kogarah, 29% of trips are integrated with public transport.

Reducing car dependence also has potential financial benefits to individuals. The annual cost of owning and running a car in Sydney is \$27,792⁹. Based on an interest rate of 6.22%¹⁰, removing one car and the associated cost from a two or three-car family, would service a \$347,968 housing loan¹¹.

Well-managed share devices can also provide benefits for people travelling to and from major events, supplementing and connecting with public transport and splitting mode share. Combined with special public transport service arrangements, over time, this could help address congestion from private vehicle use that major events can bring.

Recent engagement with schools in the Northern Beaches in Sydney found that e-bikes had significantly increased rates of high school students riding to school. This reduces the reliance on parents facilitating school drop off in private vehicles and can deliver riders health-related benefits as well (see **Health benefits** section). As one Northern Beaches parent expressed on social media:¹²

"I've just come across a photo I took of the bike parking area at my local girls' high school in July 2022 [Error! Reference source not found.].

My daughter had lost interest in riding to school. She complained that there was no proper bike parking. No-one else rode and she felt self-conscious arriving on

⁸ Zhang, Y., Nelson, J., Mulley, C. (2024). Learning from the evidence: Insights for regulating e-scooters. *Transport Policy*, 151, 63-74

⁹ Australian Automobile Association, 2024, Transport Affordability - AAA - Data Dashboard, www.data.aaa.asn.au/transport-affordability, (17 July 2024) [per household Quarter 1, 2024]

¹⁰ Moneysmart.gov.au, 2024, Mortgage calculator, <https://moneysmart.gov.au/home-loans/mortgage-calculator> (18 July 2024) [Average interest rate March 2024, Reserve Bank of Australia]

¹¹ Note: Assumes 25 year loan

¹² S. Bickford, LinkedIn: https://www.linkedin.com/posts/sarah-bickford_bikeboom-bikeboom-bikeisbest-activity-7210104221323444224-XaXi

two wheels. I popped in to better understand the issues and found one lonely bike and some ancient broken racks.

I went there again this week and counted 93 bikes! Some fabulous new racks, designed for the fashionable fat bikes, take 55 bikes [Error! Reference source not found.]. But these are nowhere near sufficient.

There are 1100 students so 8.5% are riding to school..."



Figure 1 – A bike parking area at a Northern Beaches school in 2022



Figure 2 – The same bike parking area in 2024

Economic benefits

Encouraging different travel behaviour and mode shift will enable greater efficiency in the use of roads and streets. It can also reduce congestion and the number of kilometres we travel in cars. This can benefit the whole economy.¹³

In 2022, e-scooters alone contributed \$728 million in economic and social benefits to the Australian economy.¹⁴ This includes direct impacts related to expenditure on e-scooters, accessories, maintenance or rental costs across the value chain, and indirect impacts using a multiplier analysis.

The NSW 24-Hour Economy Strategy highlights the importance of:

- ensuring safe options for end-of-trip connections for workers and consumers of the night-time economy
- making it easier to travel between 24-hour economy hubs helps to improve footfall and economic outcomes and improve workforce participation.¹⁵
- Approximately 234,000 people in Greater Sydney alone work during the night-time period, who need to travel to and from work when there are less frequent transport options.¹⁶

¹³ NSW Productivity Commission White Paper - <https://www.productivity.nsw.gov.au/sites/default/files/2022-04/Productivity-Commission-White-Paper-2021.pdf>

¹⁴ The Australian Cycling and E-scooter Economy in 2022 – 2023 Report, We Ride Australia, 2023

¹⁵ NSW 24-Hour Economy Strategy – 2020, NSW Government (note: currently being refreshed)

¹⁶ Imagine Sydney: Play - Deloitte Sydney, 2019

With the right regulatory settings and education programs in place, e-scooters and e-bikes operating in alignment with closing times of late opening shops, businesses and entertainment venues (including theatres and performance venues as well as restaurants and hospitality venues) can provide safe options for night workers and patrons to get home (when they haven't been consuming alcohol).

Recent engagement with high school students on Sydney's Northern Beaches provided insights that e-bikes enable students to travel to and from local jobs to home and school. Access to e-bikes provides direct routes to locations, without relying on public transport. This is delivering economic, linking students with a transport option to access employment and education.

Environmental benefits

E-micromobility could play an important role towards achieving NSW emission reduction target of 50% by 2030 and net zero by 2050.¹⁷

Mode shift from cars to e-micromobility has environmental benefits by reducing greenhouse gas emissions, resulting in better air quality for NSW and reduced noise.

Across Australia, e-micromobility rides have helped us avoid over 514,000 tonnes of carbon dioxide equivalent (tCO_{2e}) in 2022 and over 2.2m kg of pollutants.¹⁸

Health benefits

In addition to reducing health related impacts of car emissions¹⁹, e-bikes can improve health and wellbeing outcomes. Riding an e-bike can contribute to meeting physical activity recommendations and increasing physical fitness, particularly for non-bike riders.²⁰ This can help:

- reduce the risk of heart disease and stroke
- manage weight, blood pressure and cholesterol
- prevent and control diabetes
- reduce the risk of developing some cancers
- maintain bone density, reducing the risk of osteoporosis and fractures
- improve balance and coordination, reducing the risk of falls and other injuries
- improve mood which cumulatively leads to better mental health.

There is international evidence for the health benefits of e-bikes requiring some physical effort from riders. It is estimated that roughly half of the energy to power an e-bike comes from the cyclist.²¹ According to a systematic review of studies into e-bike health benefits, '[regular] e-cycling improved aerobic fitness, which is an important predictor for

¹⁷ Climate Change (Net Zero Future) Act 2023

¹⁸ WeRide (2023) The Australian cycling and e-scooter economy in 2022

¹⁹ NSW Health - [Air quality \(nsw.gov.au\)](https://www.nsw.gov.au/air-quality)

²⁰ Bourne JE, Sauchelli S, Perry R, Page A, Leary S, England C, et al. Health benefits of electrically-assisted cycling: a systematic review. *The International Journal of Behavioral Nutrition and Physical Activity* [Internet]. 2018 Nov 21 [cited 2024 Jul 15];15(1)

²¹ Rérat, P. (2021). The rise of the e-bike: Towards an extension of the practice of cycling? *Mobilities*, 16(3), 423–439. <https://doi.org/10.1080/17450101.2021.1897236>

health'.²² It is estimated that roughly half of the energy needed to power an e-bike comes from the rider.²³

E-bikes may extend the health benefits of physical activity at a population level to user groups who would otherwise not consider cycling at all and in areas that may otherwise be too remote, dispersed or hilly.²⁴ There is also evidence that people who ride e-bikes are riding more frequently and further distances, compared to people riding traditional bikes.²⁵ E-bikes may also help to maintain cycling among individuals who would otherwise be expected to cycle less, such as new parents and older riders.²⁶

The potential disbenefits of e-micromobility, such as a reduction in trips taken by walking or conventional cycling, need to be further explored. Some preliminary data from the independent evaluation of the NSW Government Shared E-scooter Trials showed an average of 50% of survey participants replaced a walking trip with a trip on a shared e-scooter, 8% replaced a car trip, and 27% reporting that their e-scooter trip was a 'new' trip not taking the place of another mode.

More generally, the health of the broader community can also benefit from e-micromobility uptake because of the reduction in externalised health impacts associated with private driving, including noise, air pollution and third-party injury in vehicle crashes.

Gender equity

Accessible e-micromobility options at night ensure safe transport options are available particularly for women and gender diverse people to travel to and from entertainment and work when public transport availability and frequency is lower, as well as for last mile transport.

According to a report by Neuron, which evaluates survey data and draws insights from over 10,000 e-mobility riders across Australia, New Zealand, Canada and the United Kingdom: 'over 43% of females indicated their top reason for riding at night was that e-scooters were often cheaper than taxis and rideshare services. This research also indicated that e-scooters were potentially safer when travelling alone, improving their sense of personal security at night compared to walking or public transport'.²⁷

This perspective is supported by some local gender impact assessments in Victoria, which found that women and gender diverse people may feel safer using share schemes as an alternative to walking, public transport and traditional taxi/rideshare services, especially 'after hours'.²⁸

²² Riiser A, Bere E, Andersen LB and Nordengen S (2022) E-cycling and health benefits: A systematic literature review with meta-analyses. *Front. Sports Act. Living* 4:1031004. doi: 10.3389/fspor.2022.1031004 <https://www.frontiersin.org/journals/sports-and-active-living/articles/10.3389/fspor.2022.1031004/full>

²³ Rérat, P. (2021). The rise of the e-bike: Towards an extension of the practice of cycling? *Mobilities*, 16(3), 423–439. <https://doi.org/10.1080/17450101.2021.1897236>

²⁴ Rérat, P. (2021). The rise of the e-bike: Towards an extension of the practice of cycling? *Mobilities*, 16(3), 423–439. <https://doi.org/10.1080/17450101.2021.1897236>

²⁵ <https://cyclingindustry.news/research-further-idea-that-ebike-riders-go-further-and-more-often/>

²⁶ Rérat, P. (2021). The rise of the e-bike: Towards an extension of the practice of cycling? *Mobilities*, 16(3), 423–439. <https://doi.org/10.1080/17450101.2021.1897236>

²⁷ Bridging the E-scooter Gender Gap: Enhancing Adoption and Safety – Neuron Mobility, 2023

²⁸ "Micromobility Share Schemes Guide for Councils" (2024): Victorian Government: <https://www.vicroads.vic.gov.au/-/media/files/documents/safety-and-road-rules/e-scooters-in-victoria/micromobility-share-schemes--guide-for-councils-final--april-2024.ashx>

Key issues

For e-micromobility to be a safe, sustainable and accessible transport option for people of NSW, there are a range of intersecting considerations and issues to be addressed.

Safe use

E-scooters and e-bikes are changing the way our roads and paths are used, with implications for pedestrians, bike riders, motorists and other road users.

The NSW Government adopts the Safe System approach to achieving a safe transport network, including a network free of fatalities and serious injuries by 2050.²⁹ This means considering and addressing the role of infrastructure, speed settings, vehicles, and people in road trauma.

E-micromobility riders are considered vulnerable road users, given they lack the physical protection that other road users are afforded in the event of a crash. Road safety and transport research around the use of e-micromobility devices continues to evolve as use has grown globally, including effective policy settings to manage and mitigate safety risks.

There are challenges for the collection of e-micromobility trauma data in NSW and crashes are currently significantly underreported (refer **Data and research section**). However, e-micromobility crashes are rising. Between 2020-2023 (provisional), there were 124 e-scooter police reported crashes, resulting in three fatalities, and 116 injuries including 40 serious injuries.³⁰ E-bikes are not distinguished from traditional bicycles in current crash data collection.

Current framework

The NSW Government is responsible for establishing appropriate road rules and other transport safety laws to ensure e-micromobility is a safe mobility solution. This includes establishing key settings and penalties for aspects like helmet use, appropriate road use environments and speeds (including paths), rider behaviour (including reckless riding and drink and drug riding), and legal device types for use on NSW roads. These rules and laws are then enforced by NSW Police.

In NSW:

- permitted e-bikes³¹ can be used (without registration or licensing) on public roads and road-related areas such as shared paths, separated paths and bicycle paths, but not footpaths (except under the age of 16 and other limited circumstances). Consistent with bicycles, there are no age restrictions for riders of e-bikes. When on road, e-bike riders must not exceed the posted speed limit. Advisory speed limit signs are regularly installed on shared paths to provide guidance to people riding bikes.
- privately owned e-scooters can only be used on private property in NSW. They cannot be used on roads, bicycle lanes or road-related areas, including footpaths, shared paths, separated paths and bicycle paths.

²⁹ 2026 Road Safety Action Plan, Transport for NSW - <https://towardszero.nsw.gov.au/roadsafetyplan>

³⁰ Note: Data for 2023 is provisional and subject to change.

³¹ Permitted e-bikes, Transport for NSW: <https://www.transport.nsw.gov.au/roadsafety/bicycle-riders/ebikes>

- shared e-scooters are only allowed in designated trial sites operating as part of the NSW Government's Shared E-scooter Trials Program for a specified period. Riders must be 16 years or old to use shared e-scooters and they are limited to 20 km/h on roads and bicycle lanes and 10 km/h on shared paths, in trial locations. Footpath use is illegal. Other parameters are also in place to support safety outcomes.³²

Current safety concerns related to e-micromobility use relate to:

- riders using footpaths
- riding around vulnerable pedestrians or around sensitive land uses
- young people riding
- speed settings
- the power of devices (see also **Device standards** section)
- use of helmets
- riders affected by drugs and alcohol
- reckless/inappropriate use or antisocial behaviour
- poorly parked and unattended shared e-bikes and shared e-scooters in public spaces impacting safety and amenity (see also **Infrastructure, parking and public space management and amenity** .

Safe speeds

Safe mobility for vulnerable road users, as well as uptake of active transport modes, can be improved through the implementation of lower on-road speed limits, where appropriate, in urban areas. This is reflected in international research, which recommends lower speed limits in environments with higher numbers of micromobility users.³³

In 2013-14, Transport commissioned several pieces of research into safety on shared paths. One finding was that the limited research on collisions between cyclists and pedestrians on shared paths suggested that crashes were fairly uncommon.³⁴

Road safety research³⁵ and consensus across many international jurisdictions and agencies^{36,37} suggest that low interaction speeds on shared paths (e.g. up to 10 km/h) are the most appropriate from a safety perspective.

However, there was feedback from the NSW Shared E-scooter Trials that the 10 km/h speed limit set for shared paths as part of the trials may impact on the attractiveness of shared e-scooters³⁸ and might incentivise users to ride their e-scooters on road, which is less safe for e-scooter riders.

In other Australian jurisdictions, a range of different settings apply. In the Australian Capital Territory, Tasmania and Western Australia, a speed limit on shared paths of 25 km/h applies, in Victoria 20 km/h, in the Northern Territory and South Australia 15 km/h

³² NSW Shared E-scooter Trials, trial parameters:

<https://www.transport.nsw.gov.au/system/files/media/documents/2022/E-scooter-Shared-Scheme-Trial-Proposed-Trial-Parameters-August-2022.pdf>

³³ Safer Micromobility: Technical background report, International Transport Forum, 2024: <https://www.itf-oecd.org/sites/default/files/safer-micromobility-technical-report.pdf>

³⁴ Shared paths: discussion of research findings and key safety issues, Transport for NSW Centre for Road Safety, August 2015: [Shared Paths - Research Findings \(nsw.gov.au\)](https://www.transport.nsw.gov.au/system/files/media/documents/2015/Shared-Paths-Research-Findings.pdf)

³⁵ National Transport Commission (2020). [Barriers to the safe use of personal mobility devices: Decision RIS](#)

³⁶ European Transport Safety Council (2023).

³⁷ International Transport Forum-OECD (2024). [Safer Micromobility: Technical Background Report](#)

³⁸ Draft evaluation – Shared E-scooter Trials, ITLS 2024

and in Queensland 12 km/h (see **Attachment B: Select domestic and international e-scooter settings**).

In 2023, Transport published a new NSW Speed Zoning Standard.³⁹ Across NSW, 30 km/h and 40 km/h areas are being delivered in line with this Standard where assessed as appropriate, consistent with the committed action in the NSW Government's 2026 Road Safety Action Plan.⁴⁰

Permitted devices

E-micromobility devices can vary significantly in their design, functioning and capabilities, and this affects safety outcomes and the optimal policy settings around their use.

E-micromobility devices that are defined in the Road Rules (for different types of use) include power-assisted pedal cycle, electrically power-assisted bicycle, electric scooters (shared devices used in designated trial areas) and electric skateboards (use by exception as a mobility aid only).

Current definitions in NSW do not specify a mass limit, or dimensions for e-scooters. Unlike e-bikes, there is no defined maximum power specified for e-scooters. Specifying maximum Continuous Rated Power and maximum e-scooter mass in a definition could prevent the use of high powered, fast, e-scooters, improving user safety outcomes.

NSW regulates by device type because of the differences between devices for design, handling, crash risk, and injury profile in the event of a crash.

Different devices have different power, speed and braking capabilities and footprint. These factors impact rider stability, vehicle manoeuvrability, susceptibility to crashes on uneven surfaces and how a rider falls in the event of a crash.

Providing clear minimum standards support enforcement efforts and consumers choosing a compliant device when purchasing.

As new device types enter the market, they will need to be carefully assessed to determine the most appropriate environments, speeds and policy settings.

Age of e-micromobility riders

Riders of e-scooters in the NSW Government's Shared E-scooter Trials must be at least 16 years of age, consistent with the model Australian Road Rules and most Australian jurisdictions. An interjurisdictional review of policy settings related to the age of privately-owned e-scooter riders found:

- minimum age restrictions for independent use in Australian states and territories where private e-scooter use is legal ranged from 12 years and older to 16 years and older
- the minimum age in international jurisdictions varies. In some cases, there is no minimum age, others had minimum age limits ranging from nine years old to 16 years old.

While some international jurisdictions have age restrictions for e-bikes (for example, British Columbia, Canada)⁴¹, there are currently no age restrictions on e-bikes in NSW or

³⁹ NSW Speed Zoning Standard, Transport for NSW: <https://standards.transport.nsw.gov.au/search-standard-specific/?id=TBA%20-%200004459:2022>

⁴⁰ 2026 Road Safety Action Plan, Transport for NSW - <https://towardszero.nsw.gov.au/roadsafetyplan>

⁴¹ <https://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/cycling/e-bike-rules-of-the-road>

any other Australian states or territories (provided the e-bike is a permitted type in that jurisdiction).

Considerations for safe transport at night

International literature highlights that between 34-46% of e-scooter injury crashes and around 81% of e-scooter crash fatalities occurred between 10pm and 6am^{42,43,44}. Options should be explored to address these risks, including reduced speed limits during certain times, and/or prohibited areas for e-micromobility riding at night.

To realise the potential economic benefits of e-micromobility, there should be a focus on making e-micromobility options available for last mile trips (for example at suburban train stations) and at areas with more night-time workers like hospitals and hospitality areas. Infrastructure improvements to street lighting and paths could increase safety and confidence by e-micromobility users and reduce incidents at night.

Battery safety

E-scooters and e-bikes are commonly powered by lithium-ion batteries. These batteries can present a fire and explosion risk; they are energy-dense and may release large volumes of toxic and flammable gases if they fail. Lithium-ion battery fires can be intense, with jet-like flames and flaming projectiles. They can also be difficult to extinguish.

The likelihood of an incident involving lithium-ion batteries may be increased by:

- mechanical abuse – where the battery is impacted in a crash or from being dropped
- electrical abuse – where it is overcharged, an incompatible charger is used, or there is a malfunction of the Battery Management System
- exposure to extreme heat or water ingress
- poor manufacturing standards
- aftermarket modifications
- cell or battery defects and ageing.

Lithium-ion battery fires are a growing issue in NSW, resulting in four times as many injuries than in other types of fires³. In 2023, Fire and Rescue NSW attended 67 fires involving e-micromobility devices, almost triple the figure from 2022.⁴⁵ Of these, 42% occurred during active charging.

In the first half of 2024, there were 42 fires⁴⁶ involving an e-micromobility device attended by Fire and Rescue NSW, including one that resulted in two fatalities due to the rapid escalation of the fire from a compromised e-bike battery.⁴⁷ Burn injuries from

⁴² Blomberg, S. N. F., Rosenkrantz, O. C. M., Lippert, F., & Collatz Christensen, H. (2019). Injury from electric scooters in Copenhagen: a retrospective cohort study. *BMJ Open*, 9(12), e033988.

⁴³ Kleinertz, H., Ntalos, D., Hennes, F., Nüchtern, J. V., Frosch, K. H., & Thiesen, D. M. (2021). Accident mechanisms and injury patterns in E-scooter users: a retrospective analysis and comparison with cyclists. *Deutsches Ärzteblatt International*, 118(8), 117.

⁴⁴ Karpinski, E., Bayles, E., Daigle, L., & Mantine, D. (2022). Characteristics of early shared E-Scooter fatalities in the United States 2018–2020. *Safety Science*, 153, 105811.

⁴⁵ Fire and Rescue NSW (2024): [Lithium-ion battery incidents](#)

⁴⁶ Disclaimer: Audited Data 4 July 2024 - Due to outstanding incident reports this number can change

⁴⁷ Appeal for extra caution around battery use after apparent first lithium-ion fire deaths in NSW – Teralba, Fire and Rescue NSW: <https://www.fire.nsw.gov.au/incident.php?record=recolEO1Vo689xrem>

lithium batteries is a growing cause of injury, with those associated with e-micromobility devices being a relatively small subgroup.

Fires can happen anywhere and the consequences can be significant. It is important that risks to people, buildings and infrastructure are managed and mitigated with appropriate policies and behaviours. This extends to considerations for workplace safety and workers compensation in the event a person is injured or killed, or exposed to dangerous fumes, in the course of their work.

To address risks associated with lithium-ion batteries in e-micromobility devices, particular areas that need consideration include:

- device standards, including standards for importation, sale and use
- the storage and charging of devices in occupied buildings and in and around infrastructure assets
- bulk storage of lithium-ion batteries and devices
- whether planning controls or building standards are required
- the carriage of e-micromobility devices on public transport
- the selling of aftermarket and second-life batteries, and faulty devices online
- the disposal of e-micromobility devices and batteries
- training and education of consumers, employers, and retailers and industries relevant to e-micromobility to support risk mitigation
- provision of appropriate education, training, and equipment to Fire and Rescue NSW and the NSW Rural Fire Service to support emergency response.

Device standards

To support safe outcomes, clear device standards are needed for e-bikes, e-scooters and lithium-ion batteries. Without good standards and controls, unsafe and over-powered devices may become prevalent.

Standards for importation

The Australian Government has regulatory powers over the importation of motor vehicles, including e-micromobility devices through the *Road Vehicle Standards Act 2018*. Vehicles that are defined as “not road vehicles”, including e-bikes and e-micromobility (personal mobility devices) may be imported without formal approvals or compliance with the Australian Design Rules.⁴⁸ These pathways present two distinct public safety risks: vehicles being imported that are sold as ‘off-road’ but have since been used in the public domain; and vehicles being imported that have been sold as street-legal but are capable of very high power and/or speed – either as a result of ambiguous standards, or because they can be readily modified.

Given e-bikes are legal for use on NSW roads (including road related areas as detailed in **Safe use** section above), and e-scooters are legal in other states, there is a need for

⁴⁸ See Vehicle Standard (Australian Design Rule – Definitions and Vehicle Categories) 2005 <https://www.legislation.gov.au/F2005L03850/latest/text> and Road Vehicle Standards (Classes of Vehicles that are not Road Vehicles) Determination 2021 <https://www.legislation.gov.au/F2021L00956/asmade/text>

these risks to be better addressed. It may be appropriate for specific Standards to apply to imported devices, and/or review of device definitions to reflect technological change. This would support safety outcomes and consistently control the standard of devices entering Australia and NSW for sale.

Standards for sale

In NSW, the *Gas and Electricity (Consumer Safety) Act 2017* is used to address battery and device safety standards.

NSW Fair Trading has designated e-micromobility vehicles, batteries and battery chargers as declared electrical articles under the *Gas and Electricity (Consumer Safety) Act 2017*.

This is a higher status and means they need to be tested, certified and marked before they can be sold in NSW and NSW Fair Trading can inspect, seize, recall and prohibit the sale of these devices from retailers/suppliers when standards are not met.

Fair Trading can also take strong compliance action against sellers supplying non-compliant products, including penalties of up to 5,000 penalty units or \$550,000 for corporations and 500 penalty units or \$55,000 for individuals. Subsequent offences would attract even higher penalties and imprisonment of up to two years.

Appropriate safety standards are prescribed and there are testing, certification and marking requirements for e-bikes, e-scooters- e-skateboards and hoverboards, their lithium-ion batteries and associated chargers.

Separately declaring lithium-ion batteries used in devices helps ensure that replacement batteries and substitute batteries are tested to be safe and compliant before they can be sold in NSW.

To balance the regulatory imposition on industry and consumers, NSW Fair Trading has prescribed a staged transition time for the commencement of the new regulatory requirements.

Changing the standards and requirements is being managed in collaboration with industry.

These changes will help consumers select a compliant device, meeting minimum Standards, when purchasing an e-bike or other e-micromobility device in NSW.

Standards for use

As explained in the **Safe use** section above, the Road Rules can be used to define permitted devices for use in NSW, to support safety outcomes. This would help ensure rider safety, regardless of where the vehicle is purchased.

Battery and device lifecycle management

E-micromobility devices create new risks and opportunities throughout their lifecycle, from their manufacture and use, to when they are disposed of at their end of life.

As detailed in the **Battery safety** section above, lithium-ion batteries present risks when improperly handled or disposed of.

The safe disposal of end-of-life batteries is a growing challenge, with Australia's waste and resource recovery industry estimating that there are more than 10,000 battery-

related fires in their trucks and facilities per year.⁴⁹ The safe disposal of lithium-ion batteries is critical to help prevent fires and environmental harm. Due to mixed loads, compaction and fire damage it is often difficult to determine the exact cause of fires in waste receptacles and sites. In 2022-23, Fire and Rescue NSW attributed 10% of waste fires attended to the incorrect disposal of lithium-ion batteries^{50 51}.

In response to these risks, Environment Ministers from across Australia agreed at their meeting of Friday 21 June 2024 to accelerate work towards product stewardship arrangements for all batteries. Product stewardship is the act of minimising the health, safety and environmental impacts of a product and its packaging throughout the entire lifecycle.

NSW is leading this work with Victoria and Queensland. A draft Regulatory Impact Statement with options for reform is expected by December 2024. It will include options to improve the design, packaging, import, storage, and disposal of all batteries, including those found in e-micromobility devices. A key focus will be on ensuring the safe disposal of all types of batteries, reducing the likelihood of batteries ending up in our kerbside bins, waste trucks, resource recovery facilities and landfills.

Effective product stewardship arrangements can also unlock new opportunities for extending the life of e-micromobility devices, supporting a circular economy. A circular economy is where we use resources more efficiently and keep these resources in circulation for as long as we can.

Like all other vehicles, to extend the life of e-micromobility devices, they need to be inspected, serviced and maintained. The growth in ownership and use of these devices results in the need for more suitable maintenance facilities and suitably skilled technicians. This will help ensure the safe inspection and maintenance of e-micromobility devices.

Infrastructure, parking and public space management and amenity

Well-connected, high quality active transport infrastructure and appropriate parking facilities for shared scheme devices will help boost safety and amenity outcomes for e-scooters and e-bikes and the broader community.

Public spaces, including roads, are used and managed flexibly to accommodate activations and events, maintenance, cleaning, development, incidents, and impacts of inclement weather. It is important that the use and management of e-micromobility in public spaces is also managed flexibly to respond to this.

Provision of infrastructure

Like other vulnerable road users, the safest environments for e-micromobility riders are dedicated, separated infrastructure (bicycle lanes and bicycle paths).

Providing separation limits the interaction between e-micromobility riders and other road users, reducing their likelihood of a crash.

⁴⁹ Industry survey: Battery fires in waste & recycling, June 2024, Australian Council of Recycling: [Workshop report: Development of ACOR 3-year strategy Research results](#)

⁵⁰ Fire and Rescue NSW (2024): [Lithium-ion battery incidents](#)

⁵¹ ABC (20 June 2024): [Lithium-ion batteries are causing more than 10,000 fires a year in Australia. Waste Chiefs say an 'urgent' management plan is needed](#)

Shared paths are a generally safe and convenient environment for both pedestrians and cyclists. Providing shared paths is therefore also important to support rising use of e-micromobility and active transport.

Street design

Like other vulnerable road users, people using e-micromobility are safest in low-speed areas. We need to continue efforts to create streets and centres that are designed to encourage lower speeds and adjust speed zones as well (refer also to the **Safe use** section).

As explained in the NSW Movement and Place Framework: ‘A well-designed street is human-scale and compact in form, so limited road space needs to be allocated to suitable modes to deliver the desired functions for both the corridor and the place.’⁵²

Because we want active transport, including e-micromobility, to be the preferred mode of transport in a local community, space needs to be allocated for this use. Increasing active transport uptake by provisioning space for it can also have flow on benefits such as reducing congestion and vehicle kilometres travelled.

In addition, street design can encourage lower speeds where there are vulnerable road users, like e-micromobility riders. This includes traffic calming methods, changed lane widths, street furniture (signs and street lighting), canopy coverage, sightlines and on-street parking. Designing streets in this way provides ‘self-explaining streets’ for all users.⁵³

Sharing scheme devices

E-micromobility sharing schemes are playing an increasingly important role in the transport network, connecting people who don’t own devices to public transport, and enabling shorter journeys in local communities.

However, poorly parked or abandoned shared devices are a concern as they can:

- impede pedestrian access on footpaths and in public spaces. This can be particularly challenging for people with a disability or other mobility needs.
- impact amenity, creating clutter
- impact the environment, particularly if abandoned or discarded in waterways or parklands.

These issues may be exacerbated during major events, when there is a need to:

- reduce potential for conflict and crashes between pedestrians and riders, particularly where crowds are dense in and around major event sites
- enable effective crowd management and flow, by reducing the instances of poorly parked shared devices.

The NSW *Disability Inclusion Act 2014* sets out the requirement for all public authorities to have in place a Disability Inclusion Action Plan (DIAP), setting out measures it intends to take so that people with a disability can participate fully in the community. Guiding this is a

⁵² NSW Movement and Place Framework, NSW Government, <https://www.movementandplace.nsw.gov.au/place-and-network/guides/network-planning-precincts-guide/network-planning-and-design-principles/principle-8-design-self-explaining-street-environments-following-nsw-movement-and-place-framework>

⁵³ NSW Movement and Place Framework, NSW Government, <https://www.movementandplace.nsw.gov.au/place-and-network/guides/network-planning-precincts-guide/network-planning-and-design-principles/principle-8-design-self-explaining-street-environments-following-nsw-movement-and-place-framework>

State Disability Inclusion Plan which sets out requirements for NSW Government agencies and local councils to work to eliminate barriers in the built environment that prevent people with disability from fully engaging in opportunities in their communities.

As a result, it is important that policy settings empower local government and share scheme operators to effectively deliver share schemes in a way that meets communities' needs and does not negatively impact pedestrians, streets and public spaces.

Share devices that are left unattended in public spaces are regulated under the *Public Spaces (Unattended Property) Act 2021* (the PSUP Act). The PSUP Act sets out how Councils and other authorities with land management responsibilities can manage shared e-bikes in public spaces if the devices are causing a risk to public safety or amenity, or if they have been left in one place for too long.

Under the PSUP laws, share scheme operators must respond and remove their share bikes within risk-based timeframes or face potential regulatory action from councils and other authorities. They must also follow a Code of Practice to ensure their devices are in good working condition and are clearly branded with their contact details.⁵⁴

In 2023, Transport held an E-Bike and E-Scooter Roundtable with councils, share scheme operators, industry and advocacy groups to explore any changes required to enable the operation of share schemes across the State in a way that meets communities' needs. Consultation has continued since this Roundtable and several opportunities have been identified for exploration to ensure share schemes meet community needs:

- making sure there is sufficient designated parking for share devices
- education and communication campaigns to increase awareness on the value of share schemes, their operating conditions and how to use them safely
- consideration of how share devices interact with other road users including pedestrians
- speed controls and geo-fenced areas where it is not safe or appropriate for shared-scheme devices to be used.

During consultation, councils also called for greater powers to cap the number of devices and operators in their Local Government Area to help limit impacts on public amenity and minimise access issues for people on footpaths and other public places.⁵⁵

Providing parking options and infrastructure to support thoughtful parking of shared e-bikes and shared e-scooters may alleviate impacts on safety, the environment and amenity, ensuring that these devices do not obstruct paths, cause safety risks or impact public space. To help achieve this, Transport is delivering a pilot of designated parking at selected train stations in Sydney. In addition, Transport is engaging with operators through the shared e-scooter trials to test different approaches to improve parking compliance, such as further communication and education, and the provision of marked parking areas.

Continued investment in safe, separated infrastructure for active transport has also been identified as important to addressing concerns around shared e-scooters and e-bikes (refer to the **Provision of infrastructure** and **Street design** sections above).

⁵⁴ Code of Practice for Class 2 Items - Shopping Trolleys and other Sharing Service Items, Office of Local Government: https://www.olg.nsw.gov.au/wp-content/uploads/2024/04/Code_of_Practice_pdf.pdf

⁵⁵ Minute by the City of Sydney Lord Mayor: <https://meetings.cityofsydney.nsw.gov.au/ieDecisionDetails.aspx?AllId=17679>, 24 June 2024

Transport is continuing to engage with key stakeholders and is reviewing outcomes of the Shared E-scooter Trials to understand the challenges and opportunities of e-micromobility share schemes, and to help to ensure share schemes meet the community needs.

Insurance

The NSW Compulsory Third Party (CTP) Scheme is not designed or priced to respond to injuries or death sustained through use of e-micromobility devices. These devices are currently exempt from vehicle registration, and as such, owners are not able to purchase CTP insurance for their device. In some circumstances, however, a person injured in a crash involving an e-micromobility device may still be able to make a claim through the CTP Scheme.

The expanded use of e-micromobility devices on public roads and road related areas may lead to an increase in crashes resulting in injury and associated growth in CTP claims. This would present an affordability and viability risk for the Scheme which would fall upon current premium holders.

There are limited private insurance options available for some e-micromobility devices offering varying levels of cover.

In NSW, operators participating in the Shared E-scooter Trials hold public liability, third-party property damage, and personal accident insurances that provide some coverage. These insurances are checked prior to Transport approving trial sites.

Data and research

Data and research is supporting the NSW Government to make evidence-based decisions regarding e-micromobility and informing education and engagement activities to support safe outcomes.

As e-micromobility is an emerging transport option, there are limitations to the quality, breadth and availability of data, and limitations to sharing practices and capability to leverage data insights across Government.

Data limitations exist for:

- the population-level impacts of e-micromobility (and, in particular, e-scooters) on active transport-related physical activity and public health outcomes more broadly
- crash data, for example Transport does not identify e-bikes as a separate category to bicycles, meaning the crash and injury rates of e-bike riders are unknown. Crashes and safety incidents involving e-micromobility are believed to be under-reported.

NSW government agencies are delivering Shared E-scooter Trials and other pilots to gather data; undertaking detailed research including through the Safety of Alternative and Renewable Energy Technologies (SARET) Research Program to inform the management of battery fire and explosion risks to the community⁵⁶; and are working across jurisdictions and across NSW Government to establish lessons learned and share data for e-micromobility. This will help us harmonise our understanding of the challenges and opportunities for e-micromobility.

⁵⁶ www.fire.nsw.gov.au/saret

Collaboration and coordination

The range of considerations and challenges related to e-micromobility requires a coordinated and collaborative effort. The issues intersect and responsibilities are shared between NSW Government agencies, the Australian Government, local councils and industry. Advocacy groups and researchers also have a critical role to play.

Collaboration is needed for:

- reviewing existing issues, risks and regulatory and policy settings
- developing and delivering communication, engagement and education campaigns and approaches
- designing any new interventions or policy changes
- the sharing of relevant data and insights and lessons learned
- enforcement of road rules and device standards.

Coordinated action taking place

Recognising the urgency of these issues, and to ensure a collaborative and comprehensive response, in May 2024, Transport established an E-micromobility Interagency Group (the Interagency Group) with representatives from 13 NSW Government agencies.

The formation of the Interagency Group built on collaborative cross-government efforts of an interagency oversight group in place to support the NSW Shared E-scooter Trial Program.

The Interagency Group is working together to ensure the potential environmental, social, and economic benefits of e-micromobility are realised and related issues are addressed. It includes representatives from:

- Building Commission NSW
- Fire and Rescue NSW
- NSW Department of Planning, Housing and Infrastructure
- NSW Environment Protection Authority
- NSW Fair Trading
- NSW Police
- NSW Ministry of Health
- NSW State Insurance Regulatory Authority
- Office of Local Government
- Office of the 24-Hour Economy Commissioner
- Premier's Department
- SafeWork NSW
- Transport for NSW.

A NSW Government E-micromobility Action Plan is also taking place, capturing activities across the NSW Government in five key areas:

- policy and regulation
- education and engagement

- infrastructure, parking and public space management and amenity
- data and research
- coordination and collaboration.

The Interagency Group has oversight of the Action Plan. The Action Plan will address key issues urgently and any findings or recommendations arising from the NSW Parliamentary Inquiry will be considered.

Policy and regulation

Regulation and policy settings can help reduce risks associated with e-micromobility use. As e-micromobility is an emerging technology and transport option, regulation needs to be continually monitored and adjusted over time to respond to the changing needs and preferences of the community.⁵⁷

Activities taking place across NSW Government agencies on e-micromobility policy and regulatory frameworks are detailed in **Table 0-1**.

Table 0-1 Policy and regulation actions taking place

Get the policy settings in place to support the safe and legal use of e-micromobility devices	<p>We are:</p> <ul style="list-style-type: none"> • reviewing regulation of e-micromobility sharing schemes to better support customer and community outcomes. • reviewing the road rules for e-micromobility.
Get the policy and regulatory settings right to enable informed road space allocation decisions by governments	<p>We are:</p> <ul style="list-style-type: none"> • improving the application of the Road User Space Allocation Policy (2023) and NSW Movement and Place Framework across NSW. • investigating a review of the <i>Roads Act 1993</i> and the broader legislative framework, in line with recommendations made during the Road User Space Allocation Policy review.
Create safe work places	<p>We are:</p> <ul style="list-style-type: none"> • reviewing the <i>Work Health and Safety Act 2011</i>, particularly responsibilities for businesses that provide e-micromobility devices.
Address the fire risk for infrastructure and buildings	<p>We are:</p> <ul style="list-style-type: none"> • reviewing safety risks on transport infrastructure and will implement controls as needed. • reviewing risks to government property and will implement controls as needed. • identifying options for safe battery disposal, reducing fire and safety risks in the waste industry.
Provide strong policy settings to enable delivery of active transport infrastructure, benefiting e-micromobility users	<p>We are:</p> <ul style="list-style-type: none"> • establishing clear requirements and provision for active transport, including e-micromobility, infrastructure in urban renewal areas, including areas with transport-oriented development in metropolitan and regional areas. • encouraging new major projects being delivered by NSW Government to use NSW guidelines such as Transport’s Cycleway Design Toolbox and

⁵⁷ Field and Jon, E-scooters, a new smart mobility option? The Case of Brisbane, Australia (2021)

	<p>Walking Space Guideline when provisioning for active transport infrastructure.</p> <ul style="list-style-type: none"> improving standards for active transport infrastructure and services to include charging equipment, parking and storage, and bicycle paths. Standards will cover safety, integration, interoperability and performance to be achieved in whole of lifecycle cost and risk appetite. developing parking guidelines for both shared and private e-micromobility devices and piloting approaches at Sydney train stations. reforming delegations to streamline approvals for active transport infrastructure (like changes to the role of Local Traffic Committees).
Improve policy settings and standards for safer lithium-ion batteries and e-micromobility devices	<p>We are:</p> <ul style="list-style-type: none"> regulating e-bikes, e-scooters, and other lithium-ion battery powered micromobility vehicles, like e-skateboards and hoverboards under the <i>Gas and Electricity (Consumer Safety) Act 2017</i> (refer Standards for sale section). developing an information standard for consumers, providing information on the safety of the e-micromobility vehicles, safe use practices and safe disposal. Under the Fair Trading Regulation 2019 sellers will have to provide consumers with this information at the time of sale. exploring options to better regulate the online marketplace, in accordance with the recommendations in the Final Report on the Statutory Review of the Gas and Electricity (Consumer Safety) Act 2017 which was tabled at the NSW Parliament in May 2023. reviewing the Gas and Electricity (Consumer Safety) Act 2017 to consider the inclusion of all high-risk extra-low voltage (ELV) products in the scope of the Act. collaborating with Standards Australia in the development of Standards for e-micromobility. preparing a draft Regulatory Impact Statement with options to reform the product stewardship arrangements for all battery-powered devices supplied into NSW.
Identify impacts on statutory insurance	<p>We are:</p> <ul style="list-style-type: none"> identifying impacts on statutory insurance and providing advice to government on the potential impacts to the CTP Scheme.

Education and engagement

By working across agencies in a collaborative and coordinated way, the NSW Government is building awareness and encouraging safe behaviour related to e-micromobility. This will benefit all members of our community, including current and potential users, bicycle riders, pedestrians, motorists, other road users, operators, businesses and employers.

Education and engagement activities taking place across NSW Government are detailed in **Table 0-2** to promote safe use and ownership, and position e-micromobility as a sustainable and accessible transport option for the people of NSW.

Table 0-2 Education and engagement activities taking place

Support safe riding of e-scooters and e-bikes and safe interactions with other road users	<p>We are:</p> <ul style="list-style-type: none"> maintaining website information⁵⁸ and providing communications materials on the Shared E-scooter Trials, safe road user behaviours and road rules relating to permitted e-bikes and illegal and legal uses of e-scooters.
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⁵⁸ Towards Zero Website, Transport for NSW, <https://www.transport.nsw.gov.au/roadsafety/road-users/e-scooters>

including pedestrians

- supporting NSW councils to promote safe behaviours in and around shared e-scooters in Shared E-scooter Trial sites.
- delivering the 'Share the road' campaign,⁵⁹ providing both riders and drivers with advice for travelling together safely.
- developing and distributing teaching resources and fact sheets to educate school-aged children and their families on safe e-bike behaviour.

Educate the community about permitted e-bikes and lithium-ion battery fire risk

We are:

- developing new materials to educate the community about e-bike safety, including, what to look for when buying an e-bike and preventing and responding to lithium-ion battery fires.

Create safe workplaces

We are:

- developing a workplace video safety alert and presentation on lithium-ion battery risks.
- educating employers about safety reporting requirements, particularly for lithium-ion battery fires.
- working with delivery and courier businesses to educate their workforce on road rules and battery safety for e-bikes.
- working with e-micromobility industries, including service providers and service centres, sharing scheme operators, warehouses, manufacturers, retailers and delivery companies to improve safe work outcomes.

Explore training opportunities in e-micromobility sectors

We are:

- exploring training opportunities for the maintenance and repair of e-micromobility devices.

Infrastructure, parking and public space management and amenity

The NSW Government aims to improve infrastructure to accommodate the needs of e-micromobility riders for better safety outcomes. This cross-agency approach will change the shape of our cities and centres to prioritise the needs of active transport users, including e-micromobility riders.

Activities underway across NSW Government agencies on infrastructure to support e-micromobility are detailed in **Table 0-3**.

Table 0-3 Infrastructure activities taking place

Deliver new active transport infrastructure to service the needs of e-micromobility riders

We are:

- delivering the Get NSW Active grants program, providing local councils with funding for projects that create safe, easy, and enjoyable active transport trips.
- piloting demarcated share bike parking at select Sydney Trains stations.
- planning for the Strategic Cycleway Corridors program, a network of connected infrastructure to support the future uptake of active transport and e-micromobility.

⁵⁹ Towards Zero Website, Transport for NSW, <https://www.transport.nsw.gov.au/roadsafety/road-users/drivers/sharing-road>

	<ul style="list-style-type: none"> providing Community Road Safety Grants to help community groups across NSW develop small-scale, local projects. These projects increase road safety awareness in local communities and promote safer behaviours on our roads.
Support safe speeds on NSW roads to encourage safe e-micromobility trips	<p>We are:</p> <ul style="list-style-type: none"> continuing delivery of the Towards Zero Speed Management Program to provide safer speed settings across NSW in alignment with the 2023 NSW Speed Zoning Standard (refer Street design and Safe speeds sections).
Enable safe disposal options for lithium-ion batteries	<p>We are:</p> <ul style="list-style-type: none"> working with local councils through the Community Recycling Centre network to ensure safe disposal options for lithium-ion batteries are available for the community.
Support safe delivery of major events	<p>We are:</p> <ul style="list-style-type: none"> working collaboratively with councils and land managers events operators, with shared bike and e-bike providers, and across NSW Government to actively manage risks and opportunities related to e-micromobility during major events.

Data and research

Through a coordinated and collaborative effort, the NSW Government is ensuring access to the data and insights needed to guide decision making, and support policy development and community education activities.

Activities taking place across NSW Government agencies on data collection, research and analysis of e-micromobility are detailed in **Table 0-4**.

Table 0-4 Data and research activities take place

Establish data needs for all projects and activities	<p>We are:</p> <ul style="list-style-type: none"> establishing an E-micromobility Data Program to identify data and insights needed to support policy reform, new investments and education and engagement programs. identifying opportunities for data-sharing across State Government, councils and industry.
Build partnerships to deliver research, develop insights and embed data in decision-making	<p>We are:</p> <ul style="list-style-type: none"> engaging across Government to identify, assess and address barriers to data collection, sharing and visualisation. developing a best-practice data strategy to support e-micromobility in partnership with operators focusing on reciprocity, data integrity and centralised, simple sharing principles. sharing incident data and collaborating on the Safety of Alternative and Renewable Energy Technologies (SARET) Research Program⁶⁰, a testing program led by Fire and Rescue NSW to provide an evidence base that will inform the management of battery fire and explosion risks to the community.
Deliver pilots to gather data and test new policy options	<p>We are:</p> <ul style="list-style-type: none"> delivering Shared E-scooter Trials including gathering data to understand trip demand and safety incidents and commissioning an independent evaluation.

⁶⁰ Safety of Alternative and Renewable Energy Technologies (SARET) Research Program, Fire and Rescue NSW: <https://www.fire.nsw.gov.au/page.php?id=9395>

- delivering a pilot of corralling and parking options for shared e-bikes at stations and transport hubs.
- exploring data visualisation pilot opportunities.

Undertake research to support policy development, education and engagement and infrastructure delivery for e-micromobility

We are:

- researching rules and parameters for e-micromobility interstate and in international jurisdictions and exploring lessons learned for use, standards, education, and safety.
- engaging with high school students to understand e-bike use, behaviours, drivers and perceptions
- participating in research one-bikes and e-scooters, including the Australian Cycling and E-scooter Economy Report⁶¹.
- defining high risk workplaces, including places where repairs, warehousing and charging occur
- investigating the population-level impacts of e-micromobility (and in particular, e-scooters) on active-transport-related physical activity and public health more broadly.
- progressing elements of the SARET research program to inform the management of fire and explosion risks.

Coordination and collaboration

The NSW Government is committed to making change collectively, bringing together three tiers of Government, industry, stakeholders and the community.

Activities taking place to support coordination and collaboration on e-micromobility are detailed in **Table 0-5**.

Table 0-5 Coordination and collaboration activities taking place

Coordinate activities across Government and support collaboration

We are:

- running the E-micromobility Interagency Group, to coordinate NSW Government activities for e-micromobility
- developing and overseeing a NSW E-micromobility Action Plan.

Use established engagement forums and programs to collaborate with stakeholders and coordinate across the three tiers of government

We are:

- using established forums to engage with other Australian jurisdictions.
- engaging with stakeholders involved in NSW Government Programs where e-micromobility may support precinct outcomes, including Uptown, Purple Flag Precincts, Special Entertainment Precincts and the Community Improvement District pilots.
- convening stakeholder roundtables on an as-needs basis for to e-micromobility.

⁶¹ 2023 Australian Cycling and E-scooter Economy Report, WeRide: <https://www.weride.org.au/australiacyclingeconomy/>

Attachment A: Shared E-scooter Trial data

Table 0-1 NSW Shared E-scooter Trials – trip data (at 30 June 2024)

Trial location	Trial times	Metric	Weekly average	Total
Armidale	7 Sept 2023 - ongoing	Trips	958	41,189
		Distance	1608 km	69,160 km
Wollongong	29 Sep 2023 - ongoing	Trips	3604	144,160
		Distance	7017 km	280,690 km
Forster-Tuncurry	8 Dec 2023 - ongoing	Trips	1562	46,860
		Distance	3264 km	97,916 km
Albury	15 Dec 2023 - ongoing	Trips	1635	47,426
		Distance	3224 km	93,486 km
Kogarah	10 Jan 2024 - ongoing	Trips	270	6743
		Distance	238 km	5945 km
Lake Macquarie	5 Dec 2022 – 24 May 2024	Trips		17,631
		Distance		27,540 km
All sites	22 Dec - ongoing	Trips		304,009
		Distance		574,738 km

Attachment B: Select domestic and international e-scooter settings

Jurisdiction	Private use (in public spaces)	Age settings	Riding environment			
			Footpaths	Shared paths	Cycle paths/ lanes	Roads
New South Wales	<i>Illegal (share-scooters are currently being trialled)</i>	<i>min. 16</i>	<i>Prohibited</i>	<i>Permitted; max. 10km/h</i>	<i>Permitted; max. 20km/h</i>	<i>Permitted where road speed limit is 50km/h or less; max. 20km/h</i>
Australian Capital Territory	Legal and regulated	min. 12 (under 12 with adult supervision)	Permitted; max. 15km/h (prohibited on pedestrian side of a separated footpath)	Permitted; max. 25km/h	Permitted; max. 25km/h	Prohibited unless there is no practical alternative; max. 25km/h
Northern Territory	<i>Illegal (share-scooters are currently being trialled)</i>	<i>min. 18</i>	<i>Permitted; max. 15km/h</i>	<i>Permitted; max. 15km/h</i>	<i>Permitted; max. 15km/h</i>	<i>Prohibited unless there is no practical alternative (for a max. of 50m); max. 15km/h</i>
Queensland	Legal and regulated	min. 16 (12 with adult supervision)	Permitted; max. 12km/h	Permitted; max. 12km/h	Permitted; max. 25km/h	<i>Permitted where road speed limit is 50km/h or less, has no dividing line or median strip, and if one way, has no more than one marked lane; max. 25km/h</i>
South Australia	<i>Illegal (share-scooters are currently being trialled with private use to come into effect in 2025)</i>	<i>min. 18</i>	<i>Permitted; max. 15km/h</i>	<i>Permitted; max. 15km/h</i>	<i>Prohibited</i>	<i>Prohibited unless to cross or to avoid a hazard (for a max. of 50m only, where road speed limit is 50km/h or less, has no dividing line or median strip, and if one way, has no more than one marked lane); max. 15km/h</i>
South Australia (proposed)		<i>min. 16</i>	<i>Permitted; max. 15km/h</i>	<i>Permitted; max. 15km/h</i>	<i>Permitted; max. 25km/h</i>	<i>Permitted where road speed limit is 50km/h or less; max. 25km/h</i>
Tasmania	Legal and regulated	min. 16	Permitted; max. 15km/h	Permitted; max. 25km/h	Permitted; max. 25km/h	<i>Permitted where road speed limit is 50km/h or less, has no dividing line or median strip, and if one way, has no more than one marked lane; max. 25km/h</i>
Victoria	<i>Legal and regulated under trial</i>	<i>min. 16</i>	<i>Prohibited</i>	<i>Permitted; max. 20km/h</i>	<i>Permitted; max. 20km/h</i>	<i>Permitted where speed limit is 60km/h or less; max. 20km/h</i>

Jurisdiction	Private use (in public spaces)	Age settings	Riding environment			
			Footpaths	Shared paths	Cycle paths/ lanes	Roads
Western Australia	Legal and regulated	min. 16	Permitted; max. 10km/h	Permitted; max. 25km/h	Permitted; max. 25km/h	Permitted where road speed limit is 50km/h or less, has no dividing line or median strip, and if one way, has no more than one marked lane; max. 25km/h
Select international⁶²						
France	Legal and regulated	min. 14	By exception only; max. 6km/h	-	Permitted; max. 25km/h	Permitted; max. 25km/h
Germany	Legal and regulated	min. 14	Prohibited	-	Permitted; max. 20km/h	Permitted; max. 20km/h
Ireland	Legal and regulated	min. 16	Prohibited	-	Permitted; max. 20km/h	Permitted; max. 20km/h
Italy	Legal and regulated	min. 14	By exception; max. 6km/h	Permitted; max. 20km/h	Permitted; max. 20km/h	Permitted; max. 20km/h
Sweden	Legal and regulated	No minimum age	Prohibited	-	Permitted; max. 20km/h	Permitted where road speed limit is 50km/h or less; max. 20km/h
United Kingdom	<i>Illegal (share-scooters are currently being trialled)</i>	<i>Requirement for driving licence means effective min. 17</i>	<i>Prohibited</i>	-	<i>Permitted; max. 25km/h</i>	<i>Permitted; max. 25km/h</i>

⁶² Note that not all relevant settings or policy context (e.g. licensing rules, general urban speed limits, etc.) are shown for international examples.