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Make the Shift

What can the WA Department of Transport do to encourage people to shift from cars to eRideables in Perth?

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Make the Shift

This research project was conducted by six students completing their Executive Master of Public Administration through the Australian and New Zealand School of Government (ANZSOG). It responded to a request for research by the Western Australian Department of Transport (DoT), the project sponsor. No funding was provided for this research project.

DoT and the University of Western Australia (UWA) commenced a research project with the iMOVE Cooperative Research Centre into the impacts of eRideables on the transport task in WA. This project aims to maximise the collective impact of research being conducted by UWA and DoT.



ABSTRACT

This research project responds to a Western Australian (WA) Department of Transport (DoT) request to identify policy interventions that best support increased active transport usage in Perth through the use of eRideables. Specifically, it explores contemporary policy interventions across Australia and New Zealand that may be considered for adoption or adaptation as DoT develops Walk Wheel Ride Thrive (the Strategy), an active travel strategy for WA. The research also explores policy trends and interventions internationally, focusing on cities with strong reputations for supporting active transport and with comprehensive active travel strategies.

The project involved examining existing documentation in Australia and similar regions. This informed the development of questions for semi-structured interviews with two groups: public servants responsible for active transport policy from Australia and New Zealand, and advocacy groups and service providers.

Key findings include that interventions most likely to support people to make the shift to eRideables are those that prioritise infrastructure, enhance actual and perceived safety, and are place-based and co-designed with local communities. It was also found that active travel strategies are generally led by government infrastructure and/or planning organisations. There are very few interventions in Australia that specifically target eRideables.

DoT should consider piloting unconventional and diverse approaches to identify interventions tailored to specific Australian cities and/or regional centres. Avenues for additional research include the need to better understand the usage patterns and needs of eRideable users – particularly those with privately owned devices – and what will achieve behavioural change among car users. The WA DoT should take a boundary-spanning, multi-faceted approach to influence car users to make the shift.



EXECUTIVE SUMMARY

The Western Australian (WA) Department of Transport (DoT) is developing a WA Active Travel Strategy – ‘Walk Wheel Ride Thrive’ (the Strategy) – to articulate the vision for active travel in WA.

The Strategy will aim to increase active transport for everyday journeys and align to a broader agenda of prioritising climate-resilient solutions that enhance community health, safety, and wellbeing. Previously, policy interventions led by DoT has focused on conventional active transport methods, such as walking and cycling. DoT now seeks to recognise and promote the use of recent technologies, particularly eRideables, to encourage a shift away from car dependency.

Prior research

Limited academic literature targeting eRideables usage exists to provide insights into possible policy interventions by DoT. Scholars discuss the challenges of evaluating eRideable policy interventions due to the disruptive nature of rapidly evolving technologies, particularly in the absence of standardised terminology. There are also few primary studies assessing the impact of policy interventions on user behaviour. Research has tended to capture impact under broader active transport or micromobility banners, forged on the assumption that any improvement will result in conditions that support eRideable usage (Fishman & Cherry, 2016). Available research highlights usability and health and environmental benefits as factors that may increase eRideable adoption.

Our method

To address these challenges, the project team employed a two-stage evaluation process. The first stage involved a jurisdictional scan to establish the current policy landscape in Australia, New Zealand, and other comparable regions. This analysis revealed only a small number of policies specifically targeting eRideable usage.

The second stage explored the qualitative environments for active travel and eRideable policy through interviews with policy leaders, academics, an eRideable rental company, and user representatives. The interviews asked about the effectiveness of existing measures and provided a practitioner view on the interventions identified in the first stage.

What we found

Beyond the benefits of cycling, eRideables provide an opportunity to attract a greater pool of users and potentially expand trip length while reducing user effort. An overarching finding is that eRideable adoption improves when journeys are perceived as safe, convenient, and affordable.

A lack of consistent definitions for eRideables means that literature, policy, and case studies often compare different concepts. For example, the terms ‘eScooters’, ‘eBikes’, ‘eRideables’,

and ‘personal mobility devices’ are often used interchangeably. Active travel is often used as an umbrella term to encompass all these as well as walking and cycling, yet they include a wide range of modes with varying characteristics, speeds, and capabilities. Inconsistency limits the transferability of research findings into different contexts, including the assessment of datasets that may employ different definitions to evaluate the efficacy of policy interventions. There is no single point of comparison for the interventions being applied across Australia, and no reference point for assessment against successful international policy interventions.

Infrastructure and planning

Infrastructure is a significant focus of active travel policy in all Australian jurisdictions. This research confirmed the emphasis on infrastructure to support eRideable use - the creation of safe, connected, and accessible paths is vital. However, there must be a nuanced understanding of the differences between eRideables and traditional transport modes to ensure infrastructure design is fit for purpose for eRideable use. Dedicated infrastructure is just one part of the system; users need safe local streets to connect with shared or dedicated infrastructure, along with end-of-trip facilities to store eRideables.

Current funding mechanisms inhibit the delivery of infrastructure. Western Australia should take a positive provision approach to all transport and urban development projects to support

eRideable infrastructure, including options to recover financial contributions from developers who do not engage in positive provision.

Deliberate planning is needed for an effective transport system that supports eRideable usage. It is recommended that DoT develop a best-practice infrastructure guide and explore sustainable funding methods, ensuring that infrastructure development that supports eRideable use is integrated into future urban planning projects.

Information and engagement

Data collection is critical to understanding how to increase usage of eRideables. The report calls for enhanced efforts to gather data, particularly around private eRideable usage, as the current data is heavily reliant on eRideable hire schemes. Improved integration and accuracy of all data sources would enable better tracking of eRideable adoption and usage patterns.

Community engagement is crucial to the widespread adoption of eRideables. The report highlights the benefits of community-led initiatives in driving behavioural change, recommending that governments empower local communities through targeted grants and campaigns to achieve this. This would encourage greater societal participation in shaping transport solutions, fostering a sense of ownership while integrating policy with health, environment, and social objectives. By adopting a whole-of-government approach, policymakers can address the complex factors influencing eRideable adoption more effectively.

Recommendations

1. Get essential aspects of public policy right

- Define DoT's role in the ecosystem of eRideables in Perth. This should be done in collaboration with local government and other agencies (i.e. Planning, Health), so that roles and responsibilities are agreed on and understood.
- Advocate across jurisdictions for consistent definitions of eRideables

2. Support the delivery of appropriate infrastructure

- Develop a best-practice infrastructure design guide that supports the use and public storage of eRideables.

3. Consider options for sustainable funding mechanisms

- Consider a positive provision policy, where all aspects necessary to facilitate active transport form part of all new infrastructure.

4. Use data and evaluate

- Integrate shared schemes into existing DoT maps and collaborate with private sector to make additional mapping publicly available.
- Establish data capture points to assess quantum of use of eRideables, particularly so that shared scheme use can be excluded, and private usage rates can be better established.

5. Provide and enforce clear, consistent rules

- Aim for a consistent approach to road rules across the metropolitan area.
- Develop a best-practice guide for rule making for eRideables across all local government areas in WA, and advocate to minimise friction across local government boundaries.
- Develop state-based requirements that are pre-conditions for operation of eRideable hire companies within WA.
- Ensure regulatory and contractual enforcement across all aspects of eRideable hire and use. This would serve a dual purpose of providing a safer operating environment for all modes of active transport while ensuring a level playing field for hire operators.

6. Empower communities to become active participants

- Develop a guide for local government to engage in co-design for place-based active travel solutions.
- Engage in a community campaign to encourage active travel for the first and last kilometres of longer journeys and for smaller trips.
- Consider a community grants program aimed at encouraging local uptake of eRideables.
- Trial or pilot interventions that are bold, creative and/or unconventional to add to the evidence base.





01. INTRODUCTION

The Western Australian (WA) Department of Transport (DoT) is developing a WA Active Travel Strategy – ‘Walk Wheel Ride Thrive’ (the Strategy) – that will establish the vision for active |travel in WA.

The Strategy will outline a coordinated approach to increase active transport for everyday journeys and align to a broader agenda prioritising climate-resilient solutions that enhance community health, safety, and wellbeing. Previously, policy interventions led by DoT have focused on conventional active transport methods, such as walking and cycling. DoT now seeks to recognise and promote the use of recent technologies, particularly eRideables, to encourage a shift away from car dependency.

Limited academic literature exists that provides insight into possible policy interventions by DoT. Scholars discuss the challenges of evaluating eRideable policy interventions due to the disruptive nature of rapidly evolving technologies, particularly in the absence of standardised terminology (Fishman & Cherry, 2016). There are also few primary studies assessing the impact of policy interventions on user behaviour. Research has tended to capture impact under broader active transport or micromobility banners, forged on the assumption that any improvement will result in conditions that support eRideable usage. Available research highlights usability and health and environmental benefits as factors that may increase eRideable adoption.



To address these challenges, the research employed a two-stage evaluation process to provide a snapshot of current information and practices in eRideable policy.

The first stage involved a jurisdictional scan to establish the current policy landscape in Australia, New Zealand, and other comparable regions. This analysis revealed only a small number of policies specifically targeting eRideable usage.

The second stage explored the qualitative environments for active travel and eRideable policy through interviews with policy leaders, academics, an eRideable rental company, and user representatives. These interviews asked about the effectiveness of existing measures and provided a practitioner view on the interventions identified in the first stage.

The report presents findings from both research stages and offers recommendations to DoT to promote eRideable use and enhance active transport.

1.1 RATIONALE

Perth stretches for 150km, and the Perth Metropolitan Area has very low population density compared to other world cities (Profile.id.com.au). Providing a comprehensive public transport network over such a dispersed city is difficult, and residents of Perth find private vehicle take-up more attractive (Wynne, E. 2023).

DoT wants to understand how to encourage the shift to eRideables to make active travel more accessible to users and capitalise on its benefits which could include health, environmental and traffic congestion reduction.

Since the late 1990s, there has been a rapidly expanding market of battery-supported mobility devices. Their rise in popularity in Australia is largely attributable to supportive market conditions, including accessible electricity (necessary to charge the devices' batteries), reduced prices, and clear regulatory frameworks around importation. While the presence of eRideables has visibly increased in Australia, reliable data on device usage is scant (Dowling et al., 2015).

The eBike represents the most rapidly adopted alternative-fuel vehicle in the history of motorisation (Fishman and Cherry, 2016). In parallel, the first fleet of eScooters was released in 2017 and has expanded so rapidly that there were an estimated 500 million eScooters in 2021 (Weschke, 2022). The technology these devices rely on has evolved apace with the emergence of eSkateboards, Hoverboards, eTransporters, eUnicycles, eSkates, electric wheelchairs, and even unicycles.

New eRideables (the collective terms for these devices) have entered the market faster than the literature can analyse or policymakers can address their possible disruption to the transport sector.

In Australia, eRideable hire companies have been found to manipulate usage data, and the use of private eRideables is largely unassessed (Australian Broadcasting Corporation, 2024). Visual-based assessment of usage becomes more difficult as eRideable technologies more closely resemble the transport modes they are modelled after.

Until recently, the e-mobility policy focus in WA and other jurisdictions has primarily been on electric cars replacing internal combustion engines (Sun, 2022). Another focus has been on increasing traditional active transport modes such as walking and cycling. Transport authorities from around Australia do recognise the emergence of eRideables and the need for research on their use and interaction with other forms of travel (Australian Transport Assessment and Planning Steering Committee, 2023). The frenetic pace of technological advancement and user adoption of eRideables means academic research is outpaced as quickly as it is conducted and cannot necessarily be relied upon to support effective policy and regulation.



The OECD International Transport Forum examined the potential benefits in shifting from cars to eRideables (International Transport Forum, 2021), which DoT would like to capitalise on, including:

- transport function, including reduced congestion, and increased parking space
- improved health benefits, including increased physical activity
- positive environmental benefits, including improved air quality and reduced noise and pollution.

International literature suggests that getting people to shift from cars to eRideables and realising the public value from their emergence depends on seeking support for effective policy

and regulatory settings of government (International Transport Forum, 2021). Preliminary perspectives indicate that prioritising the shift to eRideables relies on them being safe and supporting a shift from trips using cars (alone or combined with public transport).

This research is designed to bridge the knowledge gaps identified above by providing a comprehensive review of policy interventions, with a focus on the Australian context, which encourage eRideable use with qualitative analysis of their efficacy.

12 RESEARCH QUESTION

After the examination of academic literature summarised above, the project team engaged with DoT to develop a research question that provided value while acknowledging the limitations of international research and evaluations of practice:

What can the WA Department of Transport do to encourage people to shift from cars to eRideables in Perth?

Our research aims to identify interventions employed by other governments (particularly in Australia) that may be replicated, adapted, or excluded from DoT's consideration as they strive to shift people from cars to eRideables in Perth.

13 AIMS AND OBJECTIVES

A wealth of research addresses shifting people from cars to traditional active transport modes, but there is little research on transitioning from cars to eRideables, and even less research or evaluation on how to encourage such a shift. A further problem with the existing research is that it is largely from Europe and North America, regions with distinct social demographics, cultural attitudes, conditions, and regulatory and policy settings as well as dissimilar weather patterns and urban environments from Australia, particularly Perth.

This project aims to provide evidence-based insights into:

- what policy interventions have been used across Australia (and other jurisdictions) to support eRideables as a form of active transport
- perceived or actual success or failure of relevant interventions
- specific policy interventions that may increase eRideable use in Perth
- the benefits and challenges of encouraging eRideable use.

To date, DoT has positioned policy around common assumptions, which the literature review and subsequent research examine. Policy successes and failures from other jurisdictions may provide lessons for DoT in developing an active travel strategy that delivers on their intent to encourage recent technology and mobility modes in WA, and prioritises climate-resilient travel modes that support community health, safety, and wellbeing (Department of Transport, 2022).



02. BACKGROUND

2.1 LITERATURE REVIEW AND PRIOR RESEARCH

The advent of micromobility solutions, particularly eScooters, has transformed urban transportation landscapes across the globe. ERideables have emerged as a promising solution to the challenges of congestion, pollution, and limited space, and for ageing and less healthy populations. Policymakers must navigate their diverse impacts on existing transport systems and infrastructure, urban design, and safety and accessibility. They must also determine how to promote appropriate use of eRideables as part of

urban environments in order to help with congestion created by existing transport options.

Assessment of the rise of eRideables and the policy landscape is complicated by varied definitions across jurisdictions and in academic literature. Policymakers are challenged by the rapidly changing nature of the device being defined, leaving them and regulators unable to deliver guidance and education to the community about their use.

2.1.1 THE RISE OF ERIDEABLES IN URBAN TRANSPORTATION

ERideables are categorised as micromobility vehicles, which are lightweight, low-speed, and designed for individual use over short distances. Their growing popularity stems from convenience, flexibility, and lower environmental impact compared to traditional transport options. The most popular forms are eBikes and eScooters.

EBikes have a longer history than eScooters, dating back to the late 19th century. Recent advancements in battery technology and electric motors have enhanced their accessibility and efficiency. Fishman and Cherry (2016) note significant growth in eBike usage, particularly in Europe and China, where

they are increasingly common. EBikes enable longer distances with reduced physical effort, appealing to a wider demographic. In Australia, where eBikes have maximum speed limitations, they closely align with established regulations for traditional bicycles (Nau et al., 2023).

In contrast, eScooters have rapidly gained traction since the mid-2010s, particularly with the launch of shared eScooter programs in cities like San Francisco and Paris. Caspi and Smart (2021) highlight their popularity due to ease of use and efficiency for short urban trips. The rise of app-based rental services has further increased their accessibility to diverse users (Caspi and Smart, 2021).



2.1.2 TECHNOLOGY AND INTEGRATION WITH EXISTING TRANSPORT NETWORKS

Technological advancements, such as improved battery technology (especially lithium-ion batteries), have been instrumental in the growing population of eScooters and eBikes. These advancements have not only increased the viability of these modes of transport but also opened new possibility for their integration into transportation networks (Gartner et al. 2021).

The development of Internet of Things (IoT) technology is rapidly enhancing connectivity of eRideables. That connectivity will allow real-time data collection of usage patterns, maintenance needs, and rider behaviour. This allows better informed operational efficiencies and policy decisions. Further, it potentially mitigates some of the risks associated with eRideable use via new possibilities for safety enhancements, such as collision detection systems and automated emergency alerts (Shaheen and Cohen, 2020).

The relationship between eRideables and public transportation infrastructure is multifaceted. Integrating these new transport modes into urban systems poses challenges, as they can disrupt established networks, leading to issues like overcrowded footpaths, improper parking, and safety concerns due to interaction with pedestrians (Gössling, 2020).

Evidence indicates that eRideables may both complement and compete with public transport. They can address the ‘first-mile/last-mile’ issue by providing flexible options for short distances, enhancing public transport’s appeal (Degele et al., 2018). However, accommodating eRideables requires infrastructure to manage their space, the weight of eBikes on racks, and storage and charging needs.



Some users may entirely shift from cars to eScooters or eBikes, potentially diminishing public transport usage (Wang and Lindsey, 2019). This highlights the necessity for strategic planning and regulation to ensure eRideables enhance urban mobility rather than replace existing transport options.

The future of micromobility depends on cities' ability to integrate these modes into a comprehensive, multimodal transportation network (Shaheen and Cohen, 2020). Successful integration will necessitate both physical infrastructure such as dedicated lanes and charging stations, and digital platforms that facilitate seamless transitions between modes. Mobility as a service (MaaS) platforms enable users to conveniently plan and pay for trips using various transport modes, enhancing the efficiency and sustainability of each journey (Van Lier et al., 2020).

Environmental and health considerations

eRideables are perceived as greener alternatives to cars, but their full environmental impact depends on various factors, including the energy mix used for charging and the materials used in batteries and the energy consumed during manufacturing. The production, maintenance, waste management, and end-of-life disposals contribute to their overall carbon footprint (Hollingsworth et al., 2019).

The private operational/rental model of shared eScooter and eBike programs, often involving nightly collection, recharging, and redistribution, can reduce environmental benefits. This process, typically carried out using fossil fuel-powered vehicles, adds to the overall emissions associated with these micromobility options.

The assumed health benefits of eRideables are equivocal. They may enhance mobility for individuals who may not be able to use traditional bicycles, promoting public health through increased physical activity (Haworth et al., 2018), but they also present higher rates of accidents and injuries, particularly in cities lacking appropriate infrastructure (Cohen & Kietzmann, 2021).

Regulatory and safety challenges

The rapid adoption and technological advancement of eRideables has outpaced the development of regulatory frameworks that ensure the safe use of eRideables, especially when they share road space with other traffic (Fearnley et al., 2021). Initially, they were completely unregulated, outside of importation and battery-related controls.

This has led to safety concerns, particularly in dense urban areas where they interact with pedestrians, cyclists, and motorists. Regulatory issues include the need to define where eScooters and/or eBikes can be operated, set speed limits, and ensure appropriate parking (whether rented or privately owned).

Urban safety is paramount for all road users, given the increasing number of accidents involving eScooters and eBikes. Particularly in cities with strained

infrastructure, the lack of dedicated infrastructure often forces these vehicles onto sidewalks, posing a risk to pedestrians (James et al., 2022). There are no schemes for registration fees nor third-party insurance.

The regulatory landscape for eScooters and eBikes varies significantly across different cities and countries. Some cities, like Amsterdam, have embraced these modes of transport, integrating them into their existing cycling infrastructure; others have implemented more restrictive measures, including outright bans (van Lier et al., 2020). Data-driven approaches to regulation can help cities better manage eScooter and eBike use by monitoring usage patterns and adjusting regulations accordingly, as is the case in Portland, USA (McKenzie, 2020).

2.1.3 ECONOMIC IMPLICATIONS OF ERIDEABLE ADOPTION

The economic implications of integrating eRideables into transport systems are multifaceted. eRideables offer significant economic benefits by reducing the need for car ownership and its associated costs, such as fuel, parking, and maintenance, especially in urban centres where car ownership is increasingly seen as a financial burden. Switching from private vehicle ownership to using eRideables for daily commutes can lead to savings for individuals (Degele et al., 2018).

The rise of eRideables may disrupt existing transport sector markets, such as public transport and taxi services, and lead to economic displacement for workers in these sectors. Scholars suggest that policymakers address these challenges by implementing retraining programs and other support measures for affected workers (Caspi and Smart, 2021). eRideable users are more likely to frequent local businesses in urban areas where navigating congested streets by car is impractical.

This increased presence can stimulate local economies where infrastructure design is pedestrian- and eRideable-friendly, i.e. by segregating car use in those areas or lowering speed limits (Wang & Lindsey, 2019). eRideable technology has spurred the development of associated technology, such as MaaS, and supported courier services expansion, such as Deliveroo and Uber Eats.



2.1.4 INTERNATIONAL EXAMPLES

Many European cities provide insights into eRideable policy interventions. Paris has experienced both the benefits and challenges of widespread eScooter use. Initial issues related to cluttered sidewalks and safety concerns led to stricter regulation, including speed limits and designated parking zones for eScooters.

Paris has navigated these challenges, striking a balance between embracing new mobility solutions and maintaining public order (Hollingsworth, Copeland, and Johnson, 2019).

In the United States, cities like Portland, Oregon, and San Francisco have implemented extensive pilot programs to evaluate the impact of eRideables on urban mobility. Portland's approach has been characterised by a strong emphasis on data collection and public feedback, allowing the city to refine its policies continuously.

Data-driven strategies have informed decisions to lower speed limits, implement geofencing to address safety, and deliver rider education programs to expand usage for cohorts such as women or older users (McKenzie, 2020).



2.1.5 ERIDEABLES IN AUSTRALIA

In Australia, the adoption of eRideables has been met with both enthusiasm and caution by governments and non-users in the community (Roberts, 2023). While major cities like Sydney, Melbourne, and Brisbane have seen a surge in eRideable usage due to convenience and efficiency, the regulatory environment across Australian states and territories remains fragmented. Queensland has adopted a more permissive approach by allowing eScooters on roads and footpaths under certain conditions, while New South Wales has been more restrictive, primarily limiting their use to private property. Adding to the complexity, eBikes are often

regulated differently and separately from eScooters and other personal mobility devices. In practice, user compliance with formal regulation may not always align with the levels presented in literature, and enforcement efforts are not consistently applied (Roberts, 2023).

In a 2020 study by the Royal Automobile Club of Victoria (RACV), eRideable users raised safety concerns, expressing distrust in other road users and perceiving the existing road infrastructure as unsafe. The study results indicate that participants support consistent regulations to ensure the safe integration of these devices into the transport network.

The increasing adoption of eRideables calls for a re-evaluation of transport networks and urban environments in WA. As illustrated above, designing policy interventions for Perth based on prevailing assumptions in existing literature poses numerous challenges.

Definitions

A significant challenge in the field of eRideables is the inconsistent use of definitions, leading to comparisons of disparate concepts in literature and policy. Terms like 'eScooters', 'eBikes', 'eRideables', and 'personal mobility devices' are often used interchangeably, while 'active travel' serves as an umbrella term for various modes, including walking and cycling. This lack of clarity complicates the translation of research into specific policy contexts, especially when different definitions are employed to evaluate policy efficacy.

Although both eScooters and eBikes are categorised as eRideables, they differ in design, speed, and intended use. EScooters tend to be smaller and slower, primarily used for short urban trips, while eBikes can cover longer distances and are suitable for commuting. Academic literature often overlooks these distinctions, hindering the development of mode-targeted policies. The broader category of personal mobility device also includes hoverboards and electric skateboards, which complicates regulation, and rapid technological evolution further complicates policy making.

Lack of Uniformity and Comparative Data

Applying micromobility research to the Perth context is challenging because of the lack of standardised and comparative data within Australia. Much of the existing research is based on case studies from North America and Europe, where the regulatory, cultural, and infrastructure contexts differ markedly from those in Australia. For instance, most case studies are from cities with temperate climates where consistent use of eScooters and eBikes is possible. Those familiar with Perth's hot summers and rainy winters will know the climate at times precludes the use of eRideables.

Most studies focus on short-term outcomes, such as initial adoption rates or pilot program evaluations, rather than tracking the long-term impacts of eRideables on urban mobility, safety, and sustainability. This lack of long-term data is particularly problematic for cities like Perth, which are in the early stages of adopting these technologies and require guidance on sustainable integration strategies.

Currently, there is no consistent metric for evaluating interventions across Australia, nor a reference point for assessing them against successful international policies.

Local considerations

Weather is often overlooked in the literature, particularly in studies of regions with more consistent weather patterns. Policy makers in Perth need to consider whether it is possible to provide infrastructure for eRideables that may not be utilised all year around.

Perth's urban layout, characterised by a low density, sprawling metropolitan area, presents additional challenges. The literature often focuses on densely populated urban centres, where eRideables are more likely to be viable due to shorter trip distances and higher demand. In contrast, Perth's suburban spread and car-centric culture may limit the potential for eRideables to reduce car use or improve public transport connectivity.

There has been limited study of the adoption of eRideables in Perth. In 2015, the Royal Automobile Club of WA (RAC) ran a 10-week trial providing eBikes to 40 employees of four Perth enterprises. The findings are published in a report titled 'The power of electric bikes' (RAC, 2016). RAC's report reveals that eBikes significantly enhance the cycling experience by making it accessible to a broader demographic,

including those who may not have previously considered cycling due to physical limitations or distance concerns. The trial demonstrated that eBikes increase the likelihood of commuting by bike and can replace short car trips in Perth.

There are substantial economic and social advantages to investing in cycling infrastructure in Perth. Improvement to cycling facilities leads to increased participation in cycling, which in turn contributes to reduced traffic congestion, lower healthcare costs, and enhanced local economies. Research emphasises the need for strategic investment to make cycling safer and more appealing, thereby encouraging more people to adopt this mode of transportation (Ogilvie et al., 2004).



03. RESEARCH DESIGN AND APPROACH

This research project was commissioned by DoT to support development of a strategy that articulates evidence-based policy interventions to increase eRideable usage in Perth.

3.1 METHODOLOGY

Noting the challenges identified through the literature review, a research methodology to fill some of the gaps and assist in identifying pathways for more detailed academic research was developed. The research employed a two-stage approach following human rights and ethics approval.

3.1.1 STAGE ONE

The first stage of research used publicly available sources to identify and categorise the range of public policy interventions in Australia and limited international jurisdictions that may shift people from cars to bikes and/or eRideables.

Eligibility criteria for government documents

Documents were considered eligible if they:

- originated from an Australian jurisdiction
- were published after 2017 (as earlier interventions were deemed less relevant to eRideable technologies).

Additionally, international jurisdictions were included in the review. Inclusion was based on established active transport strategies and relevance to the research context based on similar systems of government, with separate municipal services (London, UK), and similar climactic conditions (California, USA).

Eligibility criteria for interventions

Interventions referenced in these documents were deemed eligible for inclusion if they were intended to:

- incentivise or support the use of eRideables
- incentivise or support the use of bikes (given the similarities between bikes and eBikes)
- disincentivise the use of cars over the use of bikes or eBikes.

Data was extracted on the interventions, including a brief description of the intervention, and specifying whether the intervention was specific to eRideables or bikes. An iterative process was employed to categorise the intervention into broad themes. The resulting list was then validated through interviews with experts.

3.1.2 STAGE TWO

The second stage started with semi-structured interviews with policy practitioners from government active transport teams, as well as key stakeholders from the eRideable industry to support triangulation of stage one.

Participants

Fourteen potential agencies were invited to participate in stage two interviews based on recommendations from the sponsor agency. Many of these entities are part of Cycling and Walking Australia and New Zealand (CWANZ), a regional group focused on promoting walking and cycling for transport and recreation.

Eight interviews were conducted, divided into two groups:

● **GROUP A**

State and federal government departments responsible for active transport policy. Individuals were selected based on their seniority and having a position/role where they lead or influence transport policy, projects, or initiatives involving use of eRideables. Participants were also identified through public records, organisational charts, and direct approaches to government entities.

● **GROUP B**

EScooter industry representatives and non-government cycling organisations and think tanks. Individuals were selected based on their employment/involvement in groups influencing active transport policy, their understanding of current active transport trends, and their experience with infrastructure development. In particular, the University of Western Australia (UWA) and iMOVE were selected because the project sponsor is already working closely with these organisations to better understand eRideable use.

Procedure

Interviews were conducted via Microsoft Teams. Before the interviews, participants provided informed consent, and their identities have been anonymised in this report to maintain confidentiality. Interview questions were structured to test attitudes towards the policy interventions identified in the first stage. The research team reviewed and refined the automated transcripts to ensure accuracy. Subsequently, the transcripts from Microsoft Teams were analysed using Atlas.ti, a qualitative analysis software that employs a coding process to identify key themes and sub-themes and attitudes towards the feasibility and efficacy of different interventions.



3.1.3 RELIABILITY AND VALIDITY OF DATA

Challenges related to the research methodology were identified early and mitigated. Cross-referencing findings from the jurisdictional scan with interviews and other sources helped with data verification and enhanced clarity, minimising the difficulties arising from the lack of nomenclature.

Interviews raise challenges of subjectivity and bias in perception by both the interviewer and interviewee (Chenail, 2011). To ensure consistency, we developed a semi-structured interview guide. Interview data was triangulated with other data sources (from the background/literature review and the jurisdictional scan) to help with validation. Finally, members of the team independently coded and interpreted qualitative data, and a consensus process was used to minimise individual bias.

3.1.4 STAGE THREE

A public survey to test Perth road-user amenability to policy interventions that were identified as consistently successful from stage two was planned for stage three. Stage one and two highlighted that there were too few eRideable specific policy interventions to create a reliable survey.

Stage two interview subjects consistently reiterated the need for solutions to be place-based. Eleanor Ostrom's theories on collective action and the governance of common resources provide a valuable framework for understanding how surveys may or may not support the co-design and co-production of eRideable policy interventions in a community.

Surveys assist in gathering broad community input and integrating local knowledge to solutions, but they must be conducted by parties with connection to community who have influence on outcomes and in a context of trust (Ostrom, 1996). Time is a key factor in building the trust necessary for co-design and/or production, which could not be established by a student research team during this time-limited research project running from February to November 2024. Stage three was therefore abandoned.



04. RESULTS

The results of each of the two stages of research are detailed below.

4.1 STAGE ONE – JURISDICTIONAL SCAN

The first stage of research used government sources to identify and categorise the range of public policy interventions that relate to transport, active transport, and eRideables. An extended table is at Appendix 2.

Eleven (11) documents were deemed eligible from Australian jurisdictions. Two documents were eligible from California, and two documents were eligible from London.

TABLE 1. NUMBER OF ELIGIBLE GOVERNMENT DOCUMENTS BY JURISDICTION

New South Wales	2
Queensland	2
Victoria	2
South Australia	1
Tasmania	1
Australian Capital Territory	1
Western Australia	1
Northern Territory	1
California, USA	2
London, UK	2



4.1.1 DATA ANALYSIS

There were 165 instances of eligible interventions identified in the reports from Australian jurisdictions, and 87 from the overseas jurisdictions. A further breakdown of the number of eligible interventions by jurisdiction is below in Table 1.

TABLE 2. NUMBER OF ELIGIBLE INTERVENTIONS BY JURISDICTION

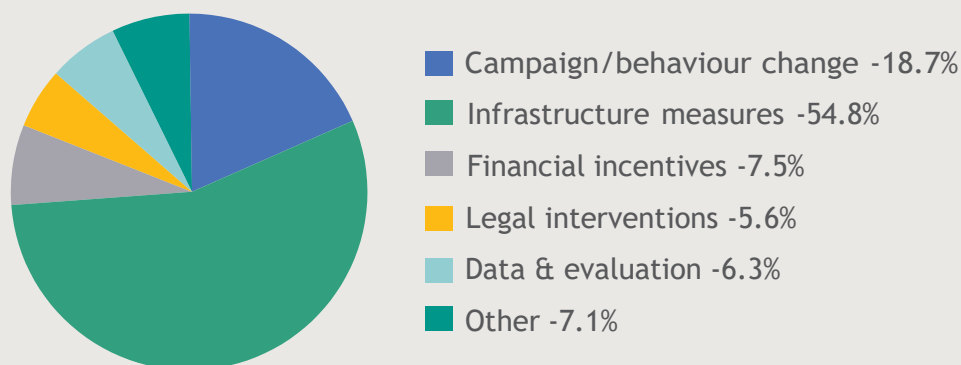
JURISDICTION	COUNT	SHARE OF TOTAL
Queensland	52	20.6%
California, USA	52	20.6%
New South Wales	38	15.1%
London, UK	35	13.9%
South Australia	25	9.9%
Australian Capital Territory	13	5.2%
Victoria	12	4.8%
Western Australia	11	4.4%
Northern Territory	10	4.0%
Tasmania	4	1.6%
TOTAL	252	100%

An iterative process was employed to categorise the type of government intervention. Initially, interventions were categorised into six categories:

1. campaign/behaviour change
2. infrastructure measure
3. financial incentives
4. legal interventions
5. data and evaluation
6. other.

Most interventions (138 of 252, or 54.8%) were categorised as infrastructure measures. The next most common category was campaign/behaviour change (18.7%). A further breakdown of the interventions by category is in Table 3 below.

FIGURE 1: INTERVENTIONS BY CATEGORY



Infrastructure measures were further categorised into seven sub-categories:

1. facilities (including parking and end-of-trip facilities)
2. planning
3. public transport
4. cycle network
5. separating cycleways
6. navigation or signage
7. traffic safety/calming.

Most infrastructure measures were related to cycle networks (32), followed by planning (24) and facilities (16). A breakdown of the infrastructure measures by sub-category is in Table 4 below.

TABLE 3. INFRASTRUCTURE INTERVENTIONS BY SUB-CATEGORY		
TYPE OF INFRASTRUCTURE	COUNT	SHARE OF TOTAL
Facilities	19	13.8%
Planning	29	21.0%
Public transport	12	8.7%
Cycle networks	39	28.3%
Separating cycleways	7	5.1%
Navigation/signage	9	6.5%
Traffic safety/calming	9	6.5%
Other	14	10.1%
Total	138	100.0%

Interventions were categorised to identify if they were fully targeted at eRideables (as opposed to traditional active transport or cycling), partly targeted (eRideables were explicitly mentioned), or not targeted at all.

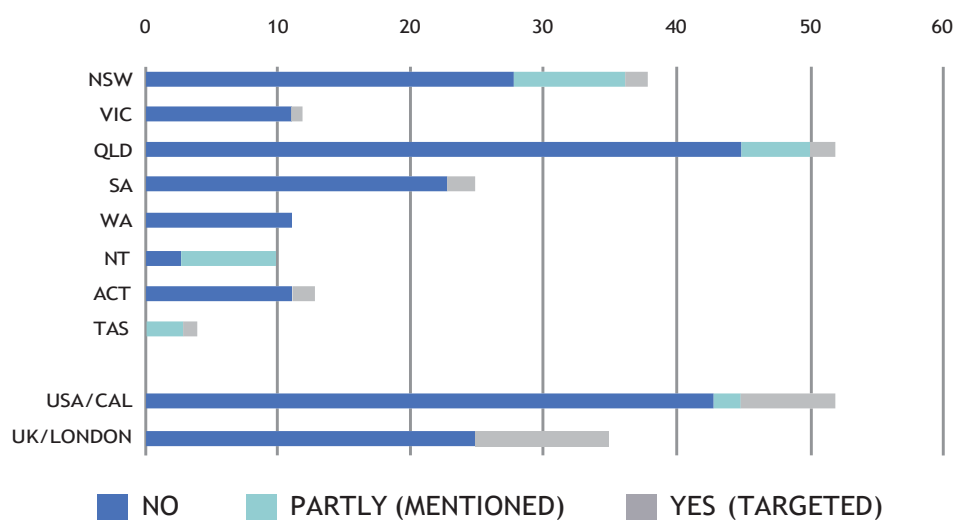
Only 27 interventions were specifically targeted to eRideables, with a further 25 in part referencing eRideables.

TABLE 4. NUMBER OF INTERVENTIONS THAT ARE TARGETED, PARTLY TARGETED, OR NOT TARGETED TO ERIDEABLES		
TARGETED TO ERIDEABLES	COUNT	SHARE OF TOTAL
Fully targeted	27	10.7%
Partly targeted	25	9.9%
Not targeted	200	79.4%
Total	252	100.0%

Of the 27 interventions fully targeted to eRideables, five were not considered ‘direct’ interventions as they were focused on preparatory and enabling work, such as conducting further research, better understanding related issues, or developing plans. Overseas jurisdictions were more likely to have interventions targeted to eRideables than Australian jurisdictions, with the majority of targeted interventions being from London and California.

A full list of the interventions is at Appendix 3.

FIGURE 2: INTERVENTIONS BY JURISDICTION, AND IF TARGETED TO ERIDEABLES



4.2 STAGE TWO – SEMI-STRUCTURED INTERVIEWS

Analysis of the interviews resulted in identification of five themes:

1. infrastructure
2. evidence and data
3. funding
4. law and regulation
5. community engagement.

Subthemes emerged from the key themes, creating connections between the key themes. This is demonstrated in Table 6. A further layer of coding was applied. Quotations were later ascribed to themes, subthemes, and codes.

TABLE 5. THEMES, SUBTHEMES, AND CODES FROM INTERVIEWS

THEME	SUBTHEMES	CODES
Infrastructure	Transitional infrastructure Integrated transport system Supporting local government	Transit oriented development Decreased congestion Travel options Trials
Evidence and data	Data-driven decision-making Limited evaluation and data	Climate change Emissions Health
Law and regulation	Definitions	Politics Risk
Funding	Cost sharing	Budget spends Local Government Areas Developers Financial incentives Economic opportunity
Community consultation	Engagement with youth	Community attitudes Engagement with youth Neighbourhood partnerships Education Perceptions of safety Advocacy

4.2.1 INFRASTRUCTURE

Participants stressed the importance of adequate and appropriate infrastructure to promote eRideable use. They suggested that infrastructure should prioritise safety for all users, meet their travel needs, and encourage active travel over car use.

“If we’re discussing eBikes ... then we’re just talking about bikes because the fundamental infrastructure requirements are the same. The only key difference is that you’ve got bigger range opportunity and then there’s particular demographics of riders that will use an eBike who might not use a conventional bike.”

4.2.2 INTEGRATED TRANSPORT SYSTEMS

Participants described the importance of integrating public transport systems with active transport infrastructure. They noted that providing separate bicycle paths to train stations and bus depots was a common approach, in conjunction with ensuring adequate end-of-trip facilities, including secure storage for eRideables.

“We have a system of secure cages at train stations ... If you have a high-value bike, we see that as really important.”

“We’re feeding into the integration with first and last leg. So, on the public transport side of things, you’re looking at the expansion of catchments for public transport.”

“That’s the greatest power of them, is that first-last mile connectivity that makes public transport more viable.”

Participants emphasised the importance of collaborating with local governments to create integrated transportation networks that are both safe and connected across an entire journey. This will be further explored in relation to the theme of community consultation.

“If you don’t provide safe infrastructure, people won’t use it. And if it’s not connected, people won’t use it.”

“The worst part of your journey defines the trip as a whole.”

Participants noted that in high-growth areas, it has been a challenge to ensure that active transport routes connect new community developments that are established near each other.

“Unsequenced developments mean that we don’t have the rollout of active transport networks simultaneous with new communities.”

However, there was also an acknowledgement from participants that dedicated active transport and eRideable specific infrastructure – such as separated cycleways – are not always the most cost-effective option, especially in lower traffic neighbourhood streets. There is also a role to play for traffic calming infrastructure (such as curb outstands or speed humps), as well as regulation around speed limits.

“Infrastructure helps, but ... it doesn’t need to be infrastructure ... reducing traffic volumes and reducing traffic speeds, having shared spaces is in a lot of contexts a lot cheaper and more effective way of doing it.”

“It’s not only about thinking about protected cycling lanes, but also thinking about local streets that are comfortable for cycling ... that encourage vehicles to travel and operate at lower speeds... you still need, of course, protected bike lanes on main roads.”

4.2.3 TRANSITIONAL INFRASTRUCTURE

The use of pop-up or transitional infrastructure was discussed by participants and relates to the theme of community consultation. International evidence suggests that it is possible to change modes of transport by reallocating road space that was initially designed for cars.

“Cities like London, Paris, etc. roll out massive interim active mode infrastructure to demonstrate that you can move way more people just reallocating the road space we’ve got.”

The benefit of being able to test and alter proposed routes when using temporary infrastructure was also discussed by participants.

“We still see a role for transitional infrastructure to test and provide cost-effective solutions for government, because otherwise building a kilometre of permanent bike lanes [is] not a cheap thing to do at all.”



4.2.4 SUPPORTING QUALITY AND CONSISTENCY ACROSS LOCAL GOVERNMENT

Jurisdictional boundaries were identified as a point where system integration can fail. For example, local council areas can have unique design guidelines that can result in infrastructure lacking in connectivity, or design or nomenclature can differ on either side of a municipal boundary. Different council areas can have agreements with different eRideable hire companies, meaning the devices cannot be used across boundaries.

“What is a separated cycleway versus a shared path? Hobart is calling them principal urban cycling networks, but Launceston is calling them something very different ... If we go up there, am I going to be riding on the same type of infrastructure?”

Participants identified that there was a role for higher levels of government to provide guidance for local authorities to deliver well-designed infrastructure, ensure consistent naming, and support integration through cross-jurisdiction collaboration.

“State government] providing guidance to councils because, they’re the ones going to be delivering most of the infrastructure because it’s mostly on their road network. And so, I’m ultimately hoping to create a suite of documents that are our guidance documents [for local government].”

“In some areas in WA you can now see that we’ll have two local governments with schemes and you can ride between those areas ... it expands how people can use, say they live in one local government area and they commute into the city, they can utilise the eScooter for the entire commute.”



4.2.5 EVIDENCE, DATA AND DIGITAL TECHNOLOGY

Data-driven decision-making

The importance of data-driven decision-making was a theme discussed by participants. The inadequacy of the data currently available was also highlighted.

“There is a bit of a gap in our knowledge around the private usage.”

Participants described how data from existing contracted eRideable providers and external sources could reveal patterns of use, highlight areas needing additional infrastructure, and support better contract management of service providers. For example, data can pinpoint popular routes, allowing governments to prioritise improvements such as dedicated lanes or parking facilities.

“Spend on the infrastructure and then analyse the hell out of the data.”

Using digital technology to improve knowledge and trip experience

Participants noted the potential for greater use of technology to better understand the use of eRideables and how they integrate with the broader transport network, as well as to support trip planning for eRideable users.

Participants noted that tracking movement in cities through phone location settings, city cameras, and automated travel classification tools offers the potential to generate richer data on urban movement than previously available.

“But the video analytics and LiDAR analytics are being used more commonly now, which enables a far greater level of disaggregation of active mode users.”

“As soon as their phone moves and you know the person is now on the move in the morning, that phone sends off a ping ... based on the velocity of that ping you can tell what mode of transport they’re on.”

It was also noted that there was potential to better support eRideable travel by using technology to integrate information in a more centralised way. For example, there is potential to make information about the location of eRideables available for hire through the TransPerth journey planner or on third party mapping software, such as Google Maps. It could then be linked to information about eRideable-specific infrastructure and trip-planning tools, enabling the mapping of multi-model journeys.

“Where there are shared programs, pop the little eScooter [on the map] ... If there’s an eScooter program or an eMobility program, having that visible when people are planning their journey, that integrative model would be I think quite helpful ... So, when people are planning their journey, and they can see how they integrate that first/last mile integration and whether an eScooter or micromobility device is an alternative to their car.”

Similarly, there may be potential to streamline multimodal travel if users were able to pay for both eRideable hire and public transport through a single payment location.

“[In different jurisdictions] we’re a part of mass integration ... That is something that we have worked in partnership with [government].”

Despite the growing use of eRideables, there has been limited evaluation of their effectiveness and impact due to the narrow scope of current datasets.

“There’s some evidence that, for example, in the eScooter space, privately owned eScooters, we’re getting really high sales, but usage is actually not as high as you might expect because they’re being used for recreational purposes.”

Participants indicated that available data only captures hired eScooter usage, which represents a small subset of the broader eRideable landscape.

“With public eScooters, we have the most complete data of any mode. But public eScooters are a small fraction of total scooters, which are a small fraction of micro mobility, which is a small fraction of active modes.”

One jurisdiction also noted the potential for eRideable hire data to be shared between providers and the local governments they have commercial agreements with, allowing the aggregation of data across a broader jurisdiction.

“They were using data on usage, which was coming from the provider. But our main cities will have more than one provider in there. So, they were engaging a third party to aggregate that data and then provide it back to them in a way that can help them to administer the whole program. So, then we pick that up and do that [more broadly], so we have a [jurisdiction-wide] database of public eScooter usage.”

This limited data makes it challenging to assess the full potential and impact of eRideables. To address this gap, more comprehensive data collection and analysis are needed, including for privately-owned eRideables, eBikes, and other forms of micromobility. This data is crucial for evaluating the effectiveness of current policies and identifying areas for improvement.

Participants also pointed to trialling pop-up infrastructure, behaviour change initiatives, eBike libraries, and other policies to encourage take-up as an opportunity to cost-effectively evaluate the efficacy of interventions in different contexts.

“But we do have the ability to fund trials. So, the intent of these trials was to understand what models work in what contexts. And if they were successful in getting a high conversion rate ... should we update our investment decision-making framework?”

4.2.6 FUNDING

Participants emphasised that budget constraints impact governments' ability to deliver interventions that support the switch to eRideables. Funding related to infrastructure was viewed as the costliest type of intervention. While a lack of federal funding for active transport was discussed, the importance of state funding and cost-sharing with stakeholders such as local governments and developers was also highlighted.

“We saw with the recent federal budget (2024) where they think they’re allocated 100 million for active transport infrastructure, which is not much money at the national level at all.”

“Some of the rollout of the active transport network in new communities happens directly through developers developing land. So, they’re building the road network as they build out the new community.”

Positive provision policies were highlighted as an effective approach to ensuring active travel infrastructure is provided as part of funded transport projects.

“We have a positive provision policy, so ... every project that transport funds in theory should have a walking and cycling element of it as part of the core aspect.”

“If you’re doing a major road upgrade or you’re building a new road, yes, you absolutely need to provide active transport access including cycling along that road.”

Some participants mentioned the role of developers in contributing to local infrastructure upgrades. One participant discussed the Growth Area Infrastructure Charge model in Victoria. This requires developers in growth areas to contribute to a fund administered by the state government to deliver priority infrastructure in new suburbs – including active transport infrastructure.

“Developers pay into that fund, and that fund is then used to do certain things, and it could be for example new schools or could be active transport infrastructure and so on.”

Another participant noted the potential for road infrastructure schemes co-funded with local governments to be contingent on delivering suitable active transport infrastructure. However, the participant also cautioned that overly prescriptive funding requirements can deter investment in active transport or eRideable use entirely.

“We will not be able to fund any new walking and cycling projects for the next three years, so it’s quite stark.”

4.2.7 COMMUNITY ENGAGEMENT

Participants consistently reported that community engagement is essential for successfully integrating eRideables into the transport network. Early and ongoing engagement with local communities can lead to better-designed infrastructure and policies that address public needs and concerns.

“Working with the local community to see how we can achieve the movement and ... the objectives of your community.”

When agencies involve the community in design transport routes, safety features, and parking solutions, agencies can cultivate a sense of community ownership. People are more likely to embrace the change when they have a say.

“Collaborating with the communities that are going to be impacted is a very powerful tool in getting support. If you do something to a community without them being engaged, that doesn’t go well because you’re already starting from a lower base because the community doesn’t feel like they’ve been engaged.”

Engagement with youth

Participants emphasised the importance of engaging youth in active transport as a critical factor in fostering a sustainable pipeline of eRideable users. While young people (including young adults) are the biggest cohort of eRideable users currently, many trips are just for experimentation or recreation. The interviews emphasised the importance of using schools as venues to promote better design, program interventions, and safety education.

“It’s worth engaging with the youth groups because of this opportunity that it opens up.”

“Schools are a great catalyst for [change] ... If you get a good school which bought into it and a group of active parents that make up a large volume of the traffic around the school ... If you can get their buy-in and get an exemplar, and then just watch it play out.”

Supporting economic opportunities

Participants also noted the ability of eRideable provision to support connection to opportunities in socioeconomically disadvantaged communities, where cost and connectivity had previously created barriers to transport accessibility.

“[Through delivering an eBike library for social housing residents] we’re increasing accessibility to jobs. So, like some of the stories we’re getting out of this with people being able to get to job interviews on an eBike because they don’t have a driver’s licence and again expanding in the catchment of potential employment opportunities, and now commuting to work on an eBike.”

These programs could be delivered in conjunction with local communities to maximise uptake.

“Local advocacy groups, as well, as the kind of unit to administer the schemes ... So, the intent of these trials was to understand what models work in what contexts. And if they were successful in getting a high conversion rate, helping maximise the benefits of investment in infrastructure.”

4.2.8 LAW AND REGULATION

Definitional and legislative challenges

Participants highlighted the lack of consistent definitions for eRideables as a complicating factor in the creation and enforcement of regulation at all levels of government. Participants pointed out that this leads to confusion among users and law enforcement.

“So, in our legislation, there's those two definitions [for eBikes].”

“[EScooters are] defined as a pedestrian device, which then requires them to be used on the path, and only on the road where it's not practical or safe to be using the path.”

“the question ... around that rule change or the rule extension for eScooters about not requiring you to register them as vehicles.”

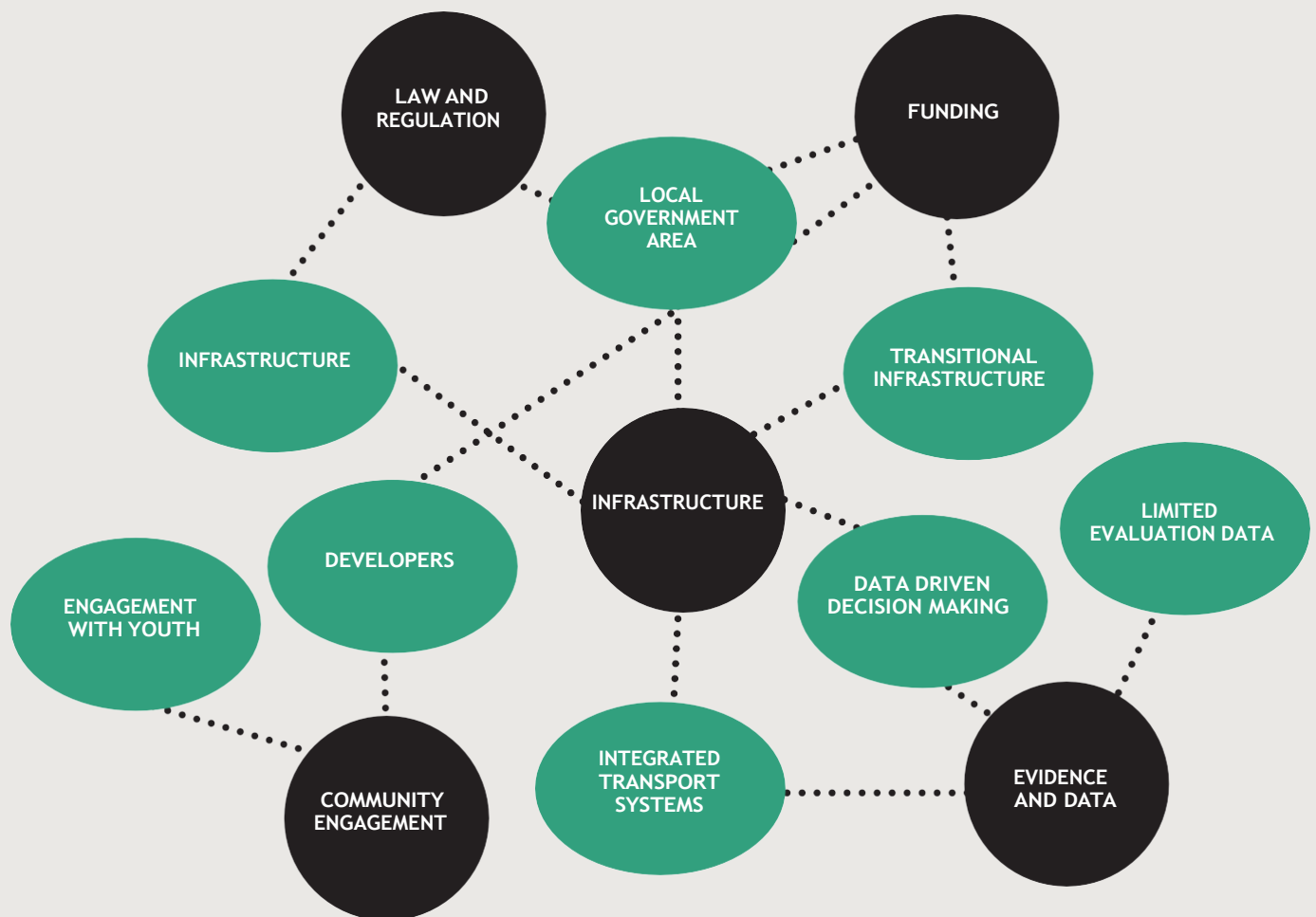
These inconsistencies hinder coherent policy settings as different eRideables have distinct requirements. Addressing these issues is critical to formulating clear, consistent, and enforceable regulations that ensure the safe and effective use of eRideables.

“We're in this bizarre position at the moment where you cannot legally use an eScooter in a cycle lane, but you can on a footpath.”

Thematic analysis map

This diagram explores the themes that emerged from interviews, and illustrates the complex intersections across them. Key themes that emerged are identified in black.

FIGURE 2 – THEMATIC ANALYSIS MAP







05. DISCUSSION AND RECOMMENDATIONS

The results of the two phases of research provide an evaluation of the challenges faced by policy makers in delivering interventions that support eRideable usage, leading to a series of findings.

The findings resonate with existing literature, reinforcing the importance of infrastructure, regulation, data-driven decision-making, and community engagement in promoting active transport and eRideable adoption.

Our research also addresses gaps in the literature. It provides insights specific to the Australian context and highlights the lack of research on the long-term impacts of eRideables and the influence of contextual factors on adoption and use. The semi-structured interviews fleshed out the successes and failures of some interventions and jurisdictional approaches to active transport and eRideable use.

The examination of policy interventions in jurisdictions with active travel policies and insights gained from interviews provides a strong indication of the hallmarks of effective policy interventions for active travel. The few interventions specifically targeting eRideable usage and their marked disparity offer limited insight as to what could increase the shift towards their use.

FINDINGS

- The challenges of encouraging use of eRideables are like traditional active transport modes, but nuances between eRideables and traditional modes must be accounted for.
- Definitional inconsistency means it is difficult to translate findings from other jurisdictions to make evidence-based recommendations about specific policy interventions that should be adopted in Perth.
- Control, responsibility and accountability between state and local governments is ill-defined leading to regulatory fragmentation.

RECOMMENDATIONS

I. Get the essential aspects of public policy right

- Define DoT's role in the ecosystem of eRideables in Perth. This should be done in collaboration with local government and other agencies (i.e. Planning, Health) so that roles and responsibilities are agreed and understood.
- Advocate across jurisdictions for consistent definitions of eRideables.

5.1 INFRASTRUCTURE

The interviews highlighted several key themes that underscore the complexity of a shift from cars to eRideables. Infrastructure emerged as a central concern, with experts emphasising the need for safe, connected, and convenient infrastructure that caters to the specific needs of eRideables. Integration with existing transport networks and the strategic use of transitional infrastructure were also highlighted as crucial to enhance eRideable usage and extend the range of public transport. Infrastructure is not limited to active travel paths; it also means designing community streets that are safe for travel.

Funding constraints were acknowledged as a significant challenge, highlighting the need for innovative funding mechanisms and the necessity for cost-sharing arrangements between authorities and jurisdictions to support infrastructure development and program implementation.

FINDINGS

- By facilitating easy connections between residences and public transport connections, eRideables could play a key role in reducing reliance on cars for short journeys.

RECOMMENDATIONS

2. Support the delivery of appropriate infrastructure

- Develop a best-practice infrastructure design guide that supports the use and public storage of eRideables.

3. Consider options for sustainable funding mechanisms

- Consider a positive provision policy, where all aspects necessary to facilitate active transport form part of all new infrastructure.

52 IMPROVING DATA COLLECTION

Data collection and analysis were identified as critical for evidence-based policymaking. The current limitations of available data, particularly regarding private eRideable use, underscore the need for more comprehensive data collection.

This research was undertaken during a period of significant political and social discourse about hire companies contracted to provide access to eRideables. Several Australian jurisdictions recently terminated contracts with providers due to concerns over misleading conduct, breaches of contract, and issues with user behaviour and community safety. This adds another layer of complexity to the policy landscape as it brings into question the integrity of available data.

In October 2024, the Victorian Government introduced requirements for hire companies operating in Victoria along with regulatory changes legalising eScooters. Requirements around their use with sanctions and penalties for breaches of the law will improve data collection from private companies that choose to operate in Victoria and could be adapted to other jurisdictions, including WA.

FINDINGS

- Data about privately owned eRideables is insufficient.
- There are opportunities to improve integration of data on eRideable hire usage across jurisdictions and utilise new technology to compile more comprehensive data on private usage.

RECOMMENDATIONS

4. Use data and evaluate

- Integrate shared schemes into existing DoT maps and collaborate with private sector to make additional mapping publicly available.
- Establish data capture points to assess quantum of use of eRideables, particularly so that shared scheme use can be excluded and private usage rates can be better established.

The structure of government in Australian States creates challenges in the regulation of eRideables. Interviewees described the difficulties of disparate approaches to regulation of eRideables across local government areas within states, creating uncertainty for policy makers, users and hire companies. Friction created by local government boundaries was noted in several of the interviews, particularly in relation to inconsistent road rules and eRideable hire scheme operation. Dangerous behaviour by riders has been a significant contributor to injuries relating to eRideables in Australian jurisdictions. Yet interviews indicated that a lack of definitional clarity or consistency in rules made it difficult to educate users and undertake enforcement.

In the ACT, where territory and municipal powers are combined, there was a consistent approach to transport planning, infrastructure, design and regulation which interviewees reflected on positively. In Western Australia, collaboration between the State Government and Local Governments is crucial to defining spans of control, accountability, and responsibility so that both levels of government can ensure safe and sustainable integration of these modes of transport into urban environments. This clarity lays a strong foundation for developing policy interventions that address safety, accessibility and reduces the risk of regulatory overlap and sets a solid foundation for commercial hire companies

and any government pilot programs. Reducing layers of regulation should provide greater responsiveness to swiftly evolving eRideable technologies.

An early reflection from the jurisdictional scan and the interventions is that accountability for the delivery rested almost solely with government infrastructure and transport departments. While they are the logical leaders of transport policies, it creates a risk of bias towards infrastructure or road use regulatory solutions.

The literature and interviews suggested that, rather than infrastructure development, the more critical aspect of active travel policies is achieving behavioural change. Infrastructure agencies may not be best placed to influence such change. Instead, active travel policies may benefit from leveraging the knowledge and skills of sectors such as health, with their behavioural science-based approach to behaviour change, education's ability to support habit forming in the next generation of users, and tourism or the community sector's targeting of subsections of transport users. An approach that spans conventional departmental boundaries and accountabilities may be beneficial to innovative interventions.

FINDINGS

- Regulatory fragmentation is a barrier to undertaking education campaigns or enforcing a safe operating environment for eRideables.
- Resourcing programs or campaigns outside transport and infrastructure or taking a whole-of-government approach could deliver improved outcomes.

RECOMMENDATIONS

5. Provide and enforce clear, consistent rules

- Aim for a consistent approach to road rules across the metropolitan area.
- Develop a best-practice guide for rulemaking for eRideables across all local government areas in WA, and advocate to minimise friction across local government boundaries.
- Develop state-based requirements that are pre-conditions for operation of eRideable hire companies within WA.
- Ensure regulatory and contractual enforcement across all aspects of eRideable hire and use. This would serve a dual purpose of providing a safer operating environment for all modes of active transport while ensuring a level playing field for hire operators.

Community-led initiatives play a crucial role in promoting eRideable adoption. Rather than relying solely on top-down approaches from transport authorities, empowering communities to engage in grassroots efforts to increase eRideable use can foster wider acceptance and encourage behavioural change for all transport network users. This approach fosters a sense of ownership and participation and allows for the development of targeted strategies to address specific community needs and preferences.

Grant programs designed to incentivise community-driven activities can be particularly effective. The 2023 Queensland Bike Riding Encouragement Community Grants Program exemplifies this approach. It supports a range of initiatives, from ‘buddy programs’ for new riders to workshops tailored to specific groups for innovative eBike borrowing schemes.

By funding such programs, governments can leverage local knowledge and

networks to promote eRideables within communities. This approach also fosters broader policy integration and boundary spanning. For example, community-led initiatives may naturally integrate elements of health promotion, environmental awareness, and social inclusion, going beyond the traditional focus of transport authorities. In this way, grant-based approaches can facilitate the kind of horizontal policy integration needed to effectively address the complex factors surrounding eRideable adoption. Instead of transport authorities needing to ‘own’ all the solutions, they can empower communities to shape the future of mobility.

Where DoT does undertake pilot or trial interventions, interviewees confirm they should be of bold design. There are so few interventions specifically targeting eRideable usage that local intervention of any type will be a welcome addition to the evidence base and assist in uncovering the distinct drivers for people to shift to eRideable usage.

FINDINGS

- Taking a targeted approach to partner with specific communities can deliver increased return on investment and more rapid behaviour change.
- There are few policy interventions specifically targeting eRideable usage. Trials or pilots of interventions could be developed creatively and collaboratively and add to the evidence base.



RECOMMENDATIONS

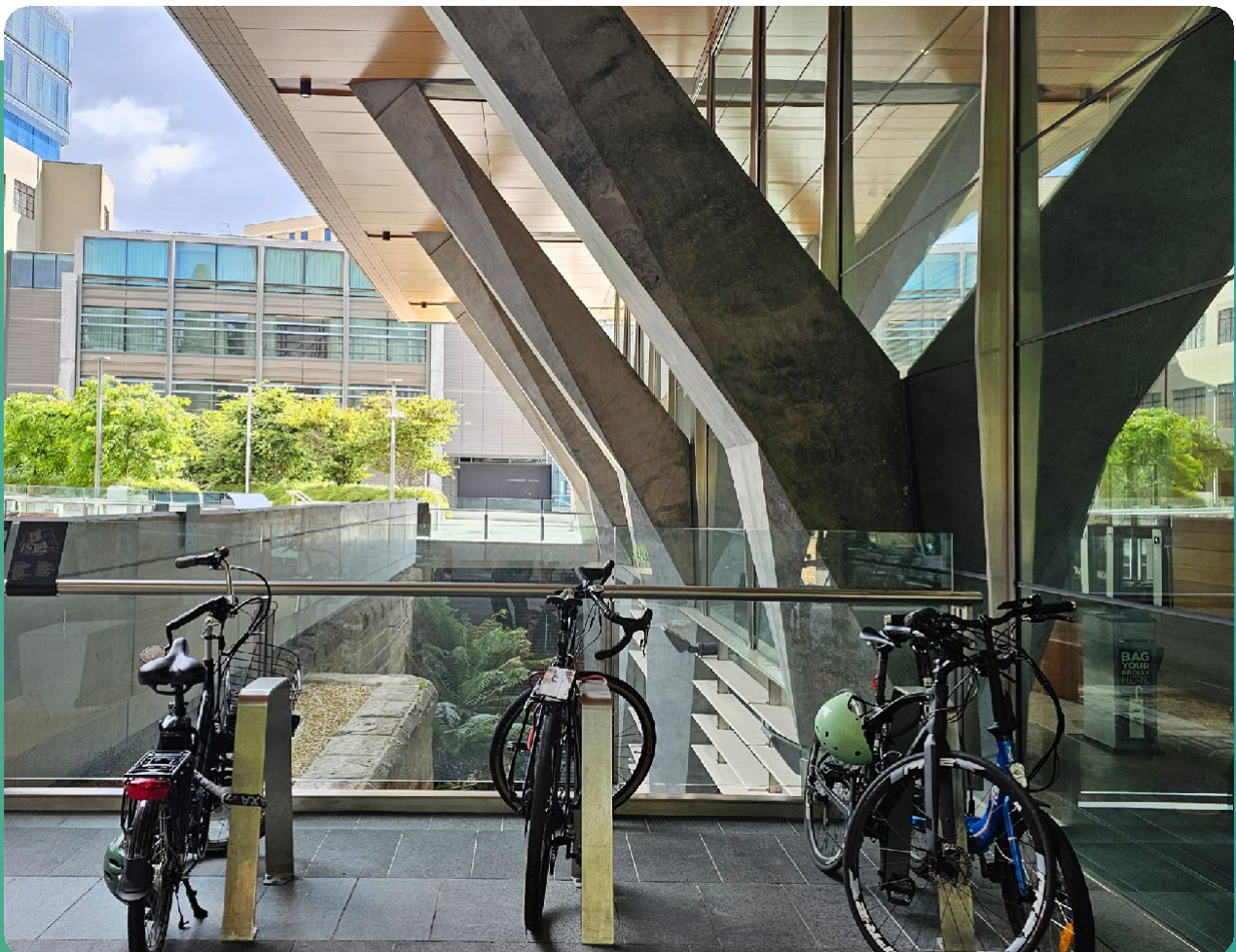
6. Empower communities to become active participants

- Develop a guide for local government to engage in co-design for place-based active travel solutions.
- Engage in a community campaign to encourage active travel for the first and last kilometres of longer journeys and for smaller trips.
- Consider a community grants program aimed at encouraging local uptake of eRideables.
- Trial or pilot interventions that are bold, creative and/or unconventional to add to the evidence base.

Future research could encompass a broader cross section of the community to understand both the barriers to uptake of eRideables and why users choose eRideables. As noted in the methods section, a substantial investment in obtaining good qualitative data on citizen's preferences about eRideables use in an agency's own jurisdiction is necessary before further large survey research will be valuable.

Cross-referencing data across transport agencies, local government, and eRideable companies could further this research, and methods that capture private usage would add value to the reliability and richness of the data.

Place-based approaches that consider the context- and location-specific aspects of an area may impact the transferability of policy or infrastructure interventions. A comparative analysis of jurisdictions could be considered to identify common elements and adaptable strategies. Although this is somewhat addressed through the semi-structured interviews, it would provide an innovative and novel research avenue.



06. CONCLUSION

This research assesses the challenges faced by policy makers in promoting eRideable usage. Insights from interviews and literature reveal that infrastructure, data-driven decision-making, community engagement, and cross-sector collaboration are critical for success. The ongoing challenges posed by the integrity of data further complicate the landscape, necessitating more robust mechanisms for data verification.

The research emphasises the role of community engagement in fostering a culture that embraces eRideables as a legitimate form of transport. Grassroots initiatives, supported by targeted funding programs, can effectively address community needs and promote behavioural change.

There remain gaps in the insights available, which present avenues for future research. These include understanding the long-term impacts of eRideable adoption, examining the use of privately-owned eRideables, and adapting to the evolving technological landscape.

The implications of researching this fast-moving technology extend beyond Perth, offering valuable lessons for policymakers in other cities seeking to promote sustainable transportation modes. By taking an integrated approach that addresses regulatory, infrastructure, data-driven, financial, and community engagement aspects, policymakers can create an enabling environment for eRideable adoption. This can lead to reduced car dependency, improved public health, decreased congestion, and enhanced liveability.

In conclusion, to encourage a shift from car dependency to eRideable usage in Perth, a boundary spanning, multi-faceted

approach by the WA DoT is necessary. This would include defining its role in the eRideable ecosystem, supporting local government engagement, developing behaviour change campaigns, enhancing data collection efforts, and establishing sustainable funding mechanisms. By integrating these policy tools and leaning on its relationships with other policy makers and agencies in the transport sector and with local communities, DoT can facilitate a more effective transition to active travel, enhancing mobility and sustainability within the region. Further research is essential to explore the long-term impacts of eRideables and the contextual factors influencing their adoption, providing a foundation for future policy development.

Place-based approaches that consider the context- and location-specific aspects of an area may impact the transferability of policy or infrastructure interventions. A comparative analysis of jurisdictions could be considered to identify common elements and adaptable strategies. Although this is somewhat addressed through the semi-structured interviews, it would provide an innovative and novel research avenue and further evidence to support interventions that help car users in Perth to Make the Shift.



07. **APPENDICES**

Appendix 1: Semi structured interview guide

Appendix 2: Policy interventions

Appendix 3: Frequency of codes from semi structured interviews

‘MAKE THE SHIFT’ SEMI-STRUCTURED INTERVIEW GUIDE

PARTICIPANT DETAILS

Name:

Jurisdiction:

Department :

1. INTERVIEW INTRODUCTION

Introduction of interviewers.

Background: ANZSOG WBP and partnership with WA DoT

Length: approximately 60 minutes

Purpose:

Verbal consent: Confirm that the participant has read the explanatory statement and is happy to proceed.

Breaks: Advise the participants that they are able to take a break at any time if needed.

2. BACKGROUND INFORMATION

- Ask the participant to introduce themselves.
- Role, background, length of employment, role in development of implementation of relevant policy.
- Confirm definitions and categories e.g. what is considered an e-rideable? Are bikes and e-bikes in the same category?

3. WHAT IS THE DEPARTMENT AIMING TO ACHIEVE / DRIVING FACTORS

- Can you tell us about your jurisdictions e-rideable policy and the process of it being developed? Where does this sit in the hierarchy (departmental and state)
- Can you tell us about the primary objective of the e-rideable policy?

Prompts:

- *Can you discuss how much weight is given to other perspectives (health vs environment vs livable city).*
 - *Tell us about the long-term vision? Tell us about the short-term goals?*
- Where does this policy sit in the broader political priorities of the jurisdiction?
- Tell us about who the greatest influence in this space (state/local/commonwealth)?
- Perceptions of safety are a significant barrier to take-up of active transport. Can you discuss how this strategy addresses safety?
- Infrastructure investment, such as dedicated network paths can be effective in encouraging use. How does the strategy handle issues such as network connectivity?
- Are personal mobility infrastructure needs recognized in planning regulations?
- What role do you see private e-rideable hire companies playing in the strategy?
- Tell us your views on how you think your approach compares with other jurisdictions? Can you tell us about actions have you sought to emulate or avoid?

4. IMPLEMENTATION AND EVALUATION

- Can you tell us about the success and challenges of the implementation of the e-rideable strategy?
- Through what process is e-rideable and active transport investment funded?
- Tell us about your department's collaboration with other government bodies? (commonwealth/state/local interface)

5. COMMUNITY VIEWS

- Can you discuss the community consultation process that led to the policy implementation?
- How comprehensive do you think the evidence base on motivators and barriers to greater e-rideable uptake are?
- Please tell us about your views on the effectiveness are peak bodies and other stakeholder groups in advocating for policies that support greater uptake of e-rideables?
- Tell us about community views that may act as a barrier to implementing certain policies?

6. OTHER CONSIDERATIONS

- Peak bodies
- Other stakeholders
- Barriers to policy development and implementation

LESSONS LEARNED AND ADVICE FOR OTHER JURISDICTIONS

- What advice would you give to other jurisdictions?
- If funding wasn't a barrier, but still having regard for value for money, what would be your top policy priorities in your jurisdiction?

Appendix 2: Policy interventions

GOVERNMENT DOCUMENTS REVIEWED FOR JURISDICTIONAL SCAN						
Jurisdiction	Title	Year	Reference	Link	Eligible for inclusion	If no, reason
NSW	NSW Active Transport Strategy	2022	NSW (2022)	Transport for NSW Active Transport Strategy	Yes	
NSW	Future Transport Strategy: Our Vision for Transport in NSW	2022	NSWa (2022)	Future Transport Strategy: Our vision for transport in NSW	Yes	
QLD	Queensland Cycling Action Plan 2023-25	2023	QLD (2023)	Queensland Cycling Action Plan 2023-2025 (publications.qld.gov.au)	Yes	
QLD	Queensland Transport Strategy	2020	QLDa (2023)	Queensland Transport Strategy - Queensland Transport Strategy - Publications Queensland Government	Yes	
TAS	Tasmanian Walking and Cycling for Active Transport Strategy	2010		Tasmanian_walking_and_cycling_for_active_transport_strategy.PDF (stategrowth.tas.gov.au)	No	Too old
TAS	Tasmania's climate change action plan 2023-25 - Implementation plan	2023	TAS (2023)	https://recfit.tas.gov.au/_data/assets/pdf_file/0004/459247/Implementation_Plan_Tasmania_s_Climate_Change_Action_Plan_2023-25.pdf	Yes	
ACT	Active Travel Plan 2024-2030	2024	ACT (2024)	https://hdp-au-prod-app-act-yoursay-files.s3.ap-southeast-2.amazonaws.com/3717/0678/1087/Active_Travel_Plan_2024-30.pdf	Yes	
ACT	Design guide - best practices for intersections and other active travel infrastructure	2024		https://hdp-au-prod-app-act-yoursay-files.s3.ap-southeast-2.amazonaws.com/1417/0678/1228/Design_Guide_-_Best_practices_for_urban_intersections_and_other_active_travel_infrastructure_in_the_ACT_2024.pdf	No	Subsumed by Active Travel Plan
VIC	Victorian Cycling Strategy 2018-28	2018	VIC (2018)	https://content.vic.gov.au/sites/default/files/2023-09/Victorian-Cycling-Strategy-2018-28.pdf	Yes	
VIC	Victorian Climate Change Strategy	2021	VIC (2021)	https://www.climatechange.vic.gov.au/_data/assets/pdf_file/0026/521297/Victorian-Climate-Change-Strategy.pdf	Yes	
SA	State Infrastructure Strategy Discussion Paper			https://www.infrastructure.sa.gov.au/_data/assets/pdf_file/0010/945154/ISA032-SIS-Discussion-Paper-12.pdf	No	Did not include specific interventions
SA	Draft South Australia Cycling Strategy 2022-2032	Draft	SA (2022)	https://www.dit.sa.gov.au/_data/assets/pdf_file/0016/1004272/Cycling_Strategy_Refresh_Draft_11022022.pdf	Yes	
WA	WA Bicycle Network Plan 2014-2031	2017		https://www.transport.wa.gov.au/mediaFiles/active-transport/AT_CYC_P_WABN_Plan.pdf	No	Too old
WA	WA Bicycle Network Progress Report 2022-23	2022	WA (2022)	https://www.transport.wa.gov.au/mediaFiles/active-transport/AT_P_WABN_Annual_Progress_Report_2022_23.pdf	Yes	
WA	Active Transport Infrastructure Policy	2021		Active Transport Infrastructure Policy - endorsed December 2021	No	Did not include specific interventions
WA	Supplementary Policy to Infrastructure Policy	2022		https://www.transport.wa.gov.au/mediaFiles/active-transport/AT_P_SupplementActiveTransportInfrastructurePolicy.pdf	No	Did not include specific interventions

Appendix 2: Policy interventions

WA	WA Mountain Bike Strategy	2015		http://www.dsr.wa.gov.au/docs/default-source/file-about-us/file-plan-for-the-future/western-australian-mountain-bike-strategy-(lo-res).pdf?sfvrsn=4	No	Too old
NT	City of Darwin Movement Strategy 2030	2021	NT (2021)	https://www.darwin.nt.gov.au/sites/default/files/publications/attachments/CoD_MovementStrategy_v5.pdf	Yes	
				Australian Reports In Scope / Eligible	11	
International Documents						
CAL	Towards and Active California, State Bicycle and Pedestrian Plan	2017	CAL (2017)	TOWARD AN ACTIVE CALIFORNIA STATE BICYCLE + PEDESTRIAN PLAN	Yes	Bicyclist includes a Class 1 and Class 22 e-bike, cargo bike
CAL	2023 Progress Update: Towards and Active California, State Bicycle and Pedestrian Plan	2023	CAL (2023)	https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/active-transportation-complete-streets/2023-sbpp-progress-report-a11y.pdf	Yes	
UK_London	Mayor's Transport Strategy - 2018	2018		https://www.london.gov.uk/programmes-strategies/transport/our-vision-transport/mayors-transport-strategy-2018?intcmp=46686	No	Refers to healthy travel and cycling - which includes e-bike
UK_London	Mayor's Transport Strategy - 2022 revision	2022		https://www.london.gov.uk/programmes-strategies/transport/our-vision-transport/mayors-transport-strategy-2018?intcmp=46686	No	Refers to healthy travel and cycling - which includes e-bike
UK_London	Cycling Action Plan 2	2022	UK (2022)	https://content.tfl.gov.uk/cycling-action-plan.pdf	Yes	Bikes and micromobility.
UK_London	Cargo Bike Action Plan 2023	2023	UK (2023)	https://content.tfl.gov.uk/tfl-cargo-bike-action-plan-2023-acc.pdf	Yes	Cargo bikes, e-cargo bikes, micromobility
				International Papers in Scope	4	
				Total Papers in Scope	15	

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
NSW	Integrate safe and separate, first and last mile walking and cycling connections and trip facilities into plans and projects to promote active transport for all travel purposes for people of all ages and abilities	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	NSW (2022) Action 1
NSW	Partner with councils, Local Aboriginal Land Councils and other NSW Government agencies to support 15-minute neighbourhoods	(2) Infrastructure Measures	(b) Planning	No	NSW (2022) Action 2
NSW	Ensure 15-minute walking, cycling and micromobility networks are planned or under development within the catchment prior to new train stations, major bus stops and interchanges and ferry wharves opening	(2) Infrastructure Measures	(b) Planning	Partly (mentioned)	NSW (2022) Action 3; NSWa (2022) P2.1c
NSW	Investigate options to support council-led walking, cycling and place making initiatives, to make it easier to activate local streets and centres	(2) Infrastructure Measures	(b) Planning	No	NSW (2022), Action 04
NSW	Establish Neighbourhood Deals to invest in making our streets and public places safer, greener and more liveable	(2) Infrastructure Measures	(b) Planning	No	NSW (2002) Action 05
NSW	Partner with the Department of Education and key stakeholders to improve safe walking, cycling and public transport access to schools	(2) Infrastructure Measures	(c) Public Transport	No	NSW (2022) Action 06
NSW	Facilitate freight industry adoption of e-bikes and other clean technologies	(3) Financial incentives		Yes (targeted)	NSWa (2022) E1.5b
NSW	Engage with Department of Planning and Environment to ensure active transport infrastructure planning is included as part of precincts	(2) Infrastructure Measures	(b) Planning	No	NSW (2022), Action 08
NSW	Prepare a guidance framework for increasing public transport patronage and access equity by helping improve public transport interchange layouts	(2) Infrastructure Measures	(c) Public Transport	No	NSW (2022) Action 09
NSW	Improve cycle access to centres, stations, key precincts, and major parks and gardens - including the provision of suitable bike parking facilities.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	NSW (2022) Action 10
NSW	Provide safe and connected cycleways for people that can be used by all current and future forms of micromobility	(2) Infrastructure Measures	(e) Separating Cycleways	Partly (mentioned)	NSW (2022) Action 11
NSW	Develop and commence delivery of Strategic Cycleway Corridors for each of the six cities.	(2) Infrastructure Measures	(d) Cycle Network	No	NSW (2022) Action 12
NSW	Ensure micromobility devices embedded safely in networks	(2) Infrastructure Measures	(d) Cycle Network	Yes (targeted)	NSW (2022) Action 13; NSWa (2022) C4.5e
NSW	Work with local Aboriginal communities and Local Aboriginal Land Councils to develop appropriate visual acknowledgements of Country along walking and cycling routes	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	NSW (2022) Action 15
NSW	Develop a Regional and Outer Metropolitan Cycling and Micromobility Plan	(2) Infrastructure Measures	(b) Planning	Partly (mentioned)	NSW (2022) Action 16
NSW	Work with the Department of Regional NSW, Destination NSW, and councils to identify, deliver and promote safe cycling connections between regional towns along non-operational rail corridors.	(2) Infrastructure Measures	(d) Cycle Network	No	-2022
NSW	Improve car-free access to national parks and other natural assets	(2) Infrastructure Measures	(d) Cycle Network	No	NSW (2022) Action 18
NSW	Apply the Providing for Walking and Cycling in Transport Projects Policy and delivery of plans, service changes and new infrastructure projects to help enable continued improvements in walking, cycling and place outcomes.	(2) Infrastructure Measures	(b) Planning	No	NSW (2022) Action 19

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
NSW	Prioritise street space to walking, cycling and public transport where new projects provide alternative connections or bypasses for through traffic	(2) Infrastructure Measures	(c) Public Transport	No	NSW (2022) Action 20
NSW	Apply road user space allocation principles in partnership with relevant stakeholders	(2) Infrastructure Measures	(b) Planning	No	NSW (2022) Action 21
NSW	Deliver reduced speeds and speed limits in urban places and local streets	(4) Legal interventions		No	NSW (2022) Action 22
NSW	Facilitate development of dynamic kerbside management for access by public transport, micromobility services and urban freight deliveries	(2) Infrastructure Measures	Other	Partly (mentioned)	NSWa (2022) Action E2.3c
NSW	Deliver infrastructure safety treatments, including through the Towards Zero Safer Roads Program.	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	NSW (2022) Action 23
NSW	Continue investing in pedestrian crossings, refuge islands and traffic calming measures	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	NSW (2022) Action 24
NSW	Support local communities and councils who wish to implement lower speed limits in their local areas	(4) Legal interventions		No	NSW (2022) Action 25
NSW	Develop and adopt principles for the management of State Roads that have a significant place function.	(2) Infrastructure Measures	(b) Planning	No	NSW (2022) Action 26
NSW	Devise main street place indicators for State Roads in urban centres, ensuring consistency with the NSW Movement and Place Framework	(2) Infrastructure Measures	(b) Planning	No	NSW ((2022) Action 27
NSW	Prioritise a program that delivers successful place outcomes in and around main street sections of State Roads in urban, regional and rural settings	(2) Infrastructure Measures	(b) Planning	No	NSW (2022) Action 28
NSW	Work with other state government organisations for asset renewals including the use of disused rail trails and utilise opportunities along pipelines and enabling routes along canals.	(2) Infrastructure Measures	(d) Cycle Network	No	NSW (2022) Action 29
NSW	Use real-time smart traffic systems to enhance the amenity of State Roads, such as speed limit reductions and increased priority for pedestrians	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	NSW (2022) Action 30
NSW	Integrate existing and future smart systems to enable more efficient and resilient networks.	(2) Infrastructure Measures	(d) Cycle Network	No	NSW (2022) Action 31
NSW	Support high quality digital connectivity and smart city technologies on major transport infrastructure and services.	(2) Infrastructure Measures	Other	No	NSW (2022) Action 32
NSW	Implement signalised intersection upgrades to include missing crossings for pedestrians and bike riders	(2) Infrastructure Measures	(f) Navigation / signage/ signage	No	NSW (2022) Action 33
NSW	Deliver place-based initiatives with 10 selected councils that respond to local needs and draw on the experiences of women and girls throughout the different stages of the Safer Cities Program to ensure their insights are incorporated	(6) Other		No	NSW (2022) Action 34
NSW	Support high quality digital connectivity and smart city technologies on major transport infrastructure and services. (Smart city technologies include EV charging for micromobility and e-bikes).	(2) Infrastructure Measures	Other	Partly (mentioned)	NSWa (2022) Actions C1.3a (p34)
NSW	Simplify rules for Local Traffic Committees to reduce administration of approval of minor projects for walking, cycling or micromobility connections	(6) Other		Partly (mentioned)	NSWa (2022) Action C2.1(d)
NSW	Support the integration of emerging modes through ... a fit-for-purpose regulatory framework.	(4) Legal interventions		Partly (mentioned)	NSWa (2022) Action C2.3a

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
NSW	Support the integration of emerging modes through trials (such as the e-scooter trials), partnerships, and collaboration.	(6) Other		Partly (mentioned)	NSWa (2022) Action C2.3a
QLD	Provide grants to local governments through the Active Transport Investment Program to plan, design, construct and promote fit-for-purpose infrastructure on the highest priority routes on local government-controlled portions of the principal cycle network	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.01
QLD	Invest in the planning, design, delivery and promotion of fit-for-purpose infrastructure on state-controlled portions of the principal cycle network through the Department of Transport and Main Roads (TMR) investment programs, including where active transport is delivered as part of other TMR projects.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.02
QLD	Invest in the maintenance, rehabilitation and improvement of TMR-controlled off-road bikeways through the Maintenance, Preservation and Environment and Road Operations investment programs.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.03
QLD	Publish and promote a consolidated Queensland Principal Cycle Network Plan and Priority Route Maps to guide local and state government delivery of a connected and cohesive cycle network.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.04
QLD	Investigate funding and innovative delivery options to roll out complete cycle networks to connect communities and suburbs. Work in partnership with local governments to identify potential pilot communities.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.05
QLD	Collaborate with local governments to pilot and evaluate temporary (or 'lighter quicker cheaper') infrastructure to improve the active transport network and promote the benefits of reallocating road space for bike riding and walking.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.06
QLD	Coordinate implementation of the Brisbane to Border Cycle Route Masterplan, including initiatives to progress delivery of missing links.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.07
QLD	Refresh the TMR Cycling Infrastructure Policy training and develop new supporting resources to ensure the policy is consistently and effectively applied in all stages of projects on the state-controlled network.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 01.08
QLD	Undertake a study to identify major principal cycle routes in existing corridors suitable for retrofitting with separated bicycle infrastructure. Work with local governments to plan for future delivery of safe and continuous bikeways in high priority corridors.	(2) Infrastructure Measures	(e) Separating Cycleways	No	QLD (2023) Action 01.09
QLD	Review and publish updated guidance on physically separated cycling infrastructure to support wider implementation including identifying opportunities to retrofit into existing infrastructure.	(2) Infrastructure Measures	(e) Separating Cycleways	No	QLD (2023) Action 01.10
QLD	Expand and deliver training resources and courses in a variety of formats to continue to build government and industry capability in cycling infrastructure planning, design and maintenance.	(2) Infrastructure Measures	(e) Separating Cycleways	No	QLD (2023) Action 01.11
QLD	Conduct a trial of signage and customer information to encourage bike riding and walking to rail and busway stations, targeting areas within 10 minutes by bike or a 15-minute walk	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	QLD (2023) Action 01.12
QLD	Update focal point maps for the principal cycle network to support accurate and consistent signing of the network.	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	QLD (2023) Action 01.13
QLD	Prepare case studies about how to develop end-of-trip facilities in community/public locations.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	QLD (2023) Action 01.14
QLD	Work with stakeholders to improve bike parking at public transport, including preparing a methodology to ensure adequate bike parking capacity across the public transport network	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	QLD (2023) Action 01.15
QLD	Integrate cycle network connections and bicycle parking provisions into planning for all new and upgraded sports facilities to be delivered for the Brisbane 2032 Olympic and Paralympic Games.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	QLD (2023) Action 01.16

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
QLD	Update catchment planning guidance to make riding to new and upgraded public transport stations easy and attractive. Identify priority locations for planning, including at stations with potential to assist with the delivery of Brisbane 2032 Olympic and Paralympic Games. Work with key stakeholders to scope future works and identify funding and delivery options.	(2) Infrastructure Measures	(c) Public Transport	No	QLD (2023) Action 01.17
QLD	Engage with peak bike riding organisations and active transport user groups to inform the detailed design of on-board bike storage facilities in new trains being delivered through the Queensland Train Manufacturing Program.	(2) Infrastructure Measures	(c) Public Transport	No	QLD (2023) Action 01.18
QLD	Consider approaches to support bike riding accessibility through the Long Distance Passenger Rail business case, such as opportunities to support bike tourism in regional Queensland through rollingstock design.	(2) Infrastructure Measures	(c) Public Transport	No	QLD (2023) Action 01.19
QLD	Integrate bike riding as a key transport mode in the planning and subsequent delivery of the Mobility as a Service mobile application to encourage take-up of riding using private or public/shared bikes and e-bikes as a more sustainable transport option.	(2) Infrastructure Measures	(c) Public Transport	Partly (mentioned)	QLD (2023) Action 01.20, QLD(b) p52
QLD	Support community organisations to deliver bike riding road safety education initiatives targeting children and adults through Community Road Safety Education Grants.	(1) Campaign / behaviour change		No	QLD (2023) Action 02.01
QLD	Support and collaborate with local governments and community organisations to deliver localised communication campaigns to increase awareness and the use of new bike riding infrastructure among priority populations such as women and children, people on low incomes and regional and remote communities.	(1) Campaign / behaviour change		No	QLD (2023) Action 02.02
QLD	Support community organisations and local governments to deliver local programs and events to encourage more Queenslanders of all ages and abilities to ride bikes, including e-bikes, through: Infra+ grants within the Cycle Network Local Government Grants Program	(1) Campaign / behaviour change		Partly (mentioned)	QLD (2023) Action 02.03
QLD	Support community organisations and local governments to deliver local programs and events to encourage more Queenslanders of all ages and abilities to ride bikes, including e-bikes, through Bike Riding Encouragement Program Community Grants	(1) Campaign / behaviour change		Partly (mentioned)	QLD (2023) Action 02.03
QLD	Support state or national cycling organisations to build their capacity and capability and that of their affiliates and develop initiatives and programs to increase bike riding participation opportunities for all Queenslanders.	(1) Campaign / behaviour change		No	QLD (2023) Action 02.04
QLD	Deliver communication that influences individuals, communities and organisations to participate in bike riding through channels such as proactive media, social media, blogs and e-newsletters.	(1) Campaign / behaviour change		No	QLD (2023) Action 02.05
QLD	Support community advocacy for bike riding through initiatives such as: *supporting Bicycle Queensland to develop capability and capacity within Bicycle User Groups * supporting other events and initiatives to amplify the community voice for bike riding	(1) Campaign / behaviour change		No	QLD (2023) Action 02.06
QLD	Deliver accessible digital products that map and promote major new and existing state-owned infrastructure and routes to encourage bike riding and support ride journey planning.	(1) Campaign / behaviour change		No	QLD (2023) Action 02.07
QLD	Support programs that encourage and build skills and confidence in women, including older women and women with disability, to ride bicycles for transport, health and wellbeing	(1) Campaign / behaviour change		No	QLD (2023) Action 02.08
QLD	Coordinate the Inter-Departmental Physical Activity Group to share information and collaborate across government to identify opportunities to support activities to get more people riding bicycles, walking and physically active.	(6) Other		No	QLD (2023) Action 02.09
QLD	Research recent Australian and international practices re offering incentives for bike riding and publish findings	(3) Financial incentives		No	QLD (2023) Action 02.10

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
QLD	Deliver refreshed Stay Wider of Every Rider social media posts to continue to educate motor vehicle drivers on minimum passing distances for bicycles.	(1) Campaign / behaviour change		No	QLD (2023) Action 03.01
QLD	Develop and publish guidance to support government and the media to foster positive attitudes about bike riding and bike riders and to promote a culture of 'sharing the road' through written and visual communication.	(1) Campaign / behaviour change		No	QLD (2023) Action 03.02
QLD	Support the development and delivery of educational initiatives that build empathy and understanding between road users to encourage safe sharing of the road and reduce risks to people riding on the road	(1) Campaign / behaviour change		No	QLD (2023) Action 03.03
QLD	Review and update the Planning for Safe Transport Infrastructure at Schools guideline and consolidate into the Queensland Road Safety Technical User Volumes: Guide to Schools to improve planning for active transport infrastructure around schools.	(2) Infrastructure Measures	(b) Planning	No	QLD (2023) Action 03.04
QLD	Support local governments to plan, design and construct rail trails on disused rail corridors to increase regional trail riding experiences and associated economic opportunities.	(6) Other		No	QLD (2023) Action 04.01
QLD	Support the development of state- and privately led mountain biking trail and recreational trail projects to grow the number of bicycle tourism experiences across Queensland, including the Cross Country Short Track at the Gold Coast Cycle Centre ¹ , the Wangetti Trail and the proposed Koala Coast Ecotourism Trail.	(6) Other		No	QLD (2023) Action 04.02
QLD	Work with partner agencies to identify links between multiple recreational cycling precincts to enable enhanced connectivity and tourism outcomes.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 04.03
QLD	Incorporate bike riding into strategies and initiatives aimed at expanding and promoting nature-based tourism in Queensland	(6) Other		No	QLD (2023) Action 04.04
QLD	Implement mechanisms to gather data to measure and report on the growth of bicycle tourism in Queensland.	(5) Data & Evaluation		No	QLD (2023) Action 04.05
QLD	Ensure bicycle tourist needs and opportunities to support bike tourism are considered in regional tourism transport planning.	(2) Infrastructure Measures	Other	No	QLD (2023) Action 04.06
QLD	Continue implementation of the Brisbane Valley Rail Trail (BVRT) Strategic Plan to develop the BVRT as a world-class tourism asset.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 04.07
QLD	Continue to investigate opportunities to develop recreational trails, including a consistent approach to marketing priority trails in South East Queensland and Far North Queensland.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 04.08
QLD	Establish an interagency coordination group to progress development of the Moreton Bay Cycleway as an important transport and recreation asset and as an iconic tourism route.	(2) Infrastructure Measures	(d) Cycle Network	No	QLD (2023) Action 04.09
QLD	Invest in strategic advertising to attract intrastate, interstate and international visitors to the BVRT and help drive local economic growth in adjoining towns and experiences in the Brisbane Valley region.	(1) Campaign / behaviour change		No	QLD (2023) Action 04.10
QLD	Partner with academic sector to deliver research into bicycle riding, including: contribution of e-bikes in encouraging mode shift from vehicles	(5) Data & Evaluation		Yes (targeted)	QLD (2023) Action 05.01
QLD	Conduct research to understand how to best encourage e-bike trial and purchase through communication. Develop communication messaging	(1) Campaign / behaviour change		Yes (targeted)	QLD (2023) Action 05.02
QLD	Investigate and trial new bike counter and display technologies and other methods to make count data available to the community. Continue to install bike counters and undertake surveys to understand and report on trends in infrastructure use, travel patterns and behaviour.	(5) Data & Evaluation		No	QLD (2023) Action 05.03
QLD	Further improve cycling demand forecasting methodologies to help quantify the potential use of new bike facilities for use in project planning and business case development.	(5) Data & Evaluation		No	QLD (2023) Action 05.04

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
QLD	Support and contribute to a national project to develop consistent standards for capturing bike riding infrastructure data for use in mapping applications to improve journey planning, wayfinding, and navigation.	(5) Data & Evaluation		No	QLD (2023) Action 05.05
QLD	Consider new and emerging mobility services when undertaking area planning and corridor studies to optimise multi-modal integration	(2) Infrastructure Measures	(b) Planning	Partly (mentioned)	QLDa (2023) p29
QLD	Partner with industry to provide more shared active transport services, like bikes and e-scooters, across the State	(3) Financial incentives		Partly (mentioned)	QLDa (2020) p53
VIC	Improve infrastructure for pedestrians and cyclists using the safe systems infrastructure approach to create safer, lower stress, better connected network	(2) Infrastructure Measures	(d) Cycle Network	No	Vic (2018) Action 1.1 p17
VIC	Implement safer-lower stress cycling experience on strategic cycling corridors and to guide investment in cycling infrastructure using experiences from Amsterdam, Copenhagen, London, San Fran and Portland	(2) Infrastructure Measures	Other	No	Vic (2018) Action 1.2 p20
VIC	Increase strategic cycling corridors to train stations, improve cyclists on buses and vLine trains, improve end of trip facilities and public transport interchanges	(2) Infrastructure Measures	(d) Cycle Network	No	Vic 2018-28 Action 1.5 p25
VIC	Support the concept of 20 minute neighbourhoods	(2) Infrastructure Measures	(d) Cycle Network	No	Vic (2018) Action 1.6 p26
VIC	Victorian Government to require high-quality cycling infrastructure as part of major transport projects through Government policy	(4) Legal interventions		No	Vic (2018) Action 1.7 p26
VIC	Work with Local Governments to update the VPP Clause 52.34 to increase the number and standard of bicycle parking and end of trip facilities.	(4) Legal interventions		No	Vic (2018) Action 1.8 p28
VIC	work with advocacy groups and other stakeholders to help with education and support programs that increase the number and frequency of people in underrepresented groups cycling	(1) Campaign / behaviour change		No	Vic (2018) Action 2.2 p31
VIC	Vic Gov will work with local councils to improve cycling routes and facilities at schools which will help increase the number of school children cycling.	(1) Campaign / behaviour change		No	Vic (2018) Action 2. 3 p32
VIC	Government to work with Councils to ensure they have the powers they need to meet the challenges posed by emerging technologies	(4) Legal interventions		Yes (targeted)	Vic (2018) Action 2.4 p34
VIC	Increase the ability to have cycling infrastructure on public transport.	(2) Infrastructure Measures	(c) Public Transport	No	Vic (2018) Action 2.4 p34
VIC	Invest in cycling tourism, support key events within Victoria	(3) Financial incentives		No	Vic (2018) Action 2.5 p36
VIC	Aim for 25% of trips to be by foot or cycle by 2030	(2) Infrastructure Measures	(b) Planning	No	VIC (2021)
SA	Continue Way2Go Bike Ed: Promoting active, safe and green travel for primary school children and their families. It is built on a partnership between local councils, school communities and the Department of Infrastructure and Transport.	(1) Campaign / behaviour change		No	SA (2022), Action 1.3, pp 21, 25.
SA	Develop a taskforce with representatives from relevant Government departments to support a “whole of Government approach”	(6) Other		No	SA (2022), Action 1.1 p24.
SA	Create targeted advertising campaign and behaviour change programs to highlight the benefits and advantages of riding for a range of targeted user groups (commuters, school children, for recreation, etc.)	(1) Campaign / behaviour change		No	
SA	Provide information, tools and resources on a range of topics that cater to all stages of cycling confidence.	(1) Campaign / behaviour change		No	SA (2022) Action 1.2 p25.
SA	Investigate digital innovation to promote riding opportunities for youth.	(1) Campaign / behaviour change		No	SA (2022) 1.3

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
SA	Support bike share (including e-bikes) programs through advertising	(1) Campaign / behaviour change		Yes (targeted)	SA (2022) Action 1.4 p25.
SA	Work with industry to understand use of bikeshare programs and determine attraction factors.	(5) Data & Evaluation		Yes (targeted)	SA (2022) Action 1.4 p25.
SA	Actively seek opportunities to influence legislation to improve outcomes for people who ride. Including enforcement of existing legislation such as the one metre passing rule.	(4) Legal interventions		No	SA (2022) Action 1.5 p25.
SA	Develop health benefit promotion program in partnership with SA Health and relevant industry stakeholder groups	(1) Campaign / behaviour change		No	SA (2022) Action 1.6 p25.
SA	Develop a “Major Event Active Transport Plan” to support the rollout of infrastructure (permanent or temporary), journey planning information and advocacy on active transport to major events.	(2) Infrastructure Measures	Other	No	SA (2022) Action 1.7 p25.
SA	Support clear and consistent way-finding signage.	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	SA (2022) Action 1.7 p25.
SA	Continue to work with community organisations and Local Government to support the use of local streets for cycling, physical activity and movement.	(1) Campaign / behaviour change		No	SA (2022) Action 1.7 p25.
SA	Deliver priority projects to further develop sections of the Greenway strategic cycling network.	(2) Infrastructure Measures	(d) Cycle Network	No	SA (2022) Action 2.1 p27.
SA	Deliver priority projects for the inner suburban bicycle boulevards.	(2) Infrastructure Measures	(d) Cycle Network	No	SA (2022) Action 2.2 p27.
SA	“Establish a program to identify high-priority routes and engage with key stakeholders as to opportunities to deliver separated infrastructure. Deliver priority bike lane separation projects on key arterial roads.”	(2) Infrastructure Measures	(e) Separating Cycleways	No	SA (2022) Action 2.3 p27.
SA	Identify and prioritise completion of critical infrastructure gaps in the cycle network.	(2) Infrastructure Measures	(d) Cycle Network	No	SA (2022) Action 2.4 p27.
SA	Develop a Bikeway Design Guide and Toolkit	(2) Infrastructure Measures	(b) Planning	No	SA (2022) Action 2.5 p27.
SA	Work with Local Government to establish and implement an agreed cycling infrastructure ownership and maintenance strategy for all existing and new cycling infrastructure.	(2) Infrastructure Measures	(d) Cycle Network	No	SA (2022) Action 2.6 p27.
SA	Work with Local Government and SATC to further develop appeal of regional cycling infrastructure, including urban areas in regional SA.	(2) Infrastructure Measures	(b) Planning	No	SA (2022) Action 2.7 p27.
SA	Integrate Bikeway Design Guide and Toolkit outcomes into Planning and Design Code.	(2) Infrastructure Measures	(b) Planning	No	SA (2022) Action 3.1 p29.
SA	Engage with the planning industry to educate and actively promote cycling opportunities and outcomes in land use planning.	(6) Other		No	SA (2022) Action 3.2 p29.
SA	Whole-of-Government policy that transport infrastructure funding programs must include dedicated funding for active transport infrastructure.	(2) Infrastructure Measures	(b) Planning	No	SA (2022) Action 3.3 p29.
SA	Review existing and planned cycle networks in the context of access to the public transport network, including stations, interchanges and hubs.	(2) Infrastructure Measures	(c) Public Transport	No	SA (2022) Action 3.4 p29.
SA	“Provide safe, secure, and well-designed bicycle storage facilities at key public transport stations, interchanges and hubs.”	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	SA (2022) Action 3.4 p29.

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
SA	Cycling projects and priorities to be reviewed and aligned with South Australia's Road Safety Strategy to 2031.	(1) Campaign / behaviour change		No	SA (2022) Action 3.5 p29
TAS	“Deliver a grant program to support Tasmanians to purchase an e-bike or e-scooter. This includes grants of up to \$250 for e-scooters and skateboards; \$500 for e-bikes \$1000 for cargo e-bikes. “	(3) Financial incentives		Yes (targeted)	TAS (2023) Action 2.3.2
TAS	Update the Tasmanian Walking and Cycling for Active Transport Strategy to capture the contemporary policy and infrastructure context regarding active transport across all levels of government. This action related to Priority Action 2.3 which focusses on reducing emissions from uptake of electric vehicles and active transport.	(6) Other	Strategic Planning	Partly (mentioned)	TAS (2023) Action 2.3.3
TAS	Work with local government to improve active transport and micro-mobility infrastructure and facilities.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Partly (mentioned)	TAS (2023) Action 2.3.4
ACT	Installing automated counters to track walking and riding on key points in the active travel network.	(5) Data & Evaluation		No	ACT (2024)
ACT	New street and intersection infrastructure will be built in consideration of the new Design Guide: Best practices for urban intersections and other active travel infrastructure in the ACT. The Design Guide will be used to complement the Municipal Infrastructure Standards to inform all new infrastructure to improve the safety and priority for people walking and cycling based on their ‘movement and place’ classification. Future updates to the Standards will be informed by these new guidelines.	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	ACT (2024) Priority 1
ACT	Progressively converting on-road cycle lanes on priority routes to safe separated facilities including both permanent infrastructure and use of ‘quick build’ infrastructure.	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	ACT (2024) Priority 1
ACT	Consider the expansion of lower speed zones in areas with high risk to vulnerable road users.	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	ACT (2024) Priority 1
ACT	Conducting regular community education campaigns focused on the safety and priority of vulnerable road users.	(1) Campaign / behaviour change		No	ACT (2024) Priority 1
ACT	Using condition data to inform a strategic asset renewal program of our community path network including shared paths and cycle paths and investigating opportunities to make planned path maintenance works publicly available	(2) Infrastructure Measures	(d) Cycle Network	No	ACT (2024) Priority 2
ACT	The Garden City Cycle Route is currently planned from Civic to North Watson. The first stage of delivery from Civic through Braddon is funded for detailed design and construction over three years. Potential future extension from Watson through Kenny to Gungahlin will establish it as a Principal Route with the final route to be determined.	(2) Infrastructure Measures	(d) Cycle Network	No	ACT (2024) Priority 2
ACT	Progressively building the identified priority missing links using protected cycleways or off-road shared or cycle path infrastructure, reviewing priorities on an annual basis.	(2) Infrastructure Measures	(d) Cycle Network	No	ACT (2024) Priority 2
ACT	Explore the rollout of an e-bike shared scheme in the ACT.	(6) Other		Yes (targeted)	ACT (2024) Priority 3
ACT	Innovative parking solutions and dedicated parking areas will be explored as part of the renewal of permits for dockless micromobility providers.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Yes (targeted)	ACT (2024) Priority 3
ACT	Explore options to provide secure bike cages in every town centre in Canberra, and developing new access passes for secure bike parking without the need to demonstrate public transport use.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	ACT (2024) Priority 4
ACT	Progressively expanding our network of bike repair stations, to ensure they are available in all town centres.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	ACT (2024) Priority 4

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
ACT	Developing workplace travel planning.	(1) Campaign / behaviour change		No	ACT (2024) Priority 5
USA_CAL	Provide ongoing implementation of existing Caltrans Complete Streets education and hands-on training	(1) Campaign / behaviour change		No	CAL (2017) Action M1.2 p41
USA_CAL	Develop District level plans to identify bicycle and pedestrian needs and priority projects on or parallel to and across the state highway system, with a focus on removing barriers, closing gaps, and building complete, comfortable networks that consider the context	(2) Infrastructure Measures	(d) Cycle Network	No	CAL (2017) Action M1.1 p41
USA_CAL	Increase state investment and encourage local and regional investment in complete bicycle and pedestrian networks	(2) Infrastructure Measures	(d) Cycle Network	No	CAL (2017) Action M1.3 p42
USA_CAL	Explore opportunities to develop a network of separated 'bicycle highways' to serve regional and interregional travel	(2) Infrastructure Measures	(e) Separating Cycleways	No	CAL (2017) Action M1.4 p43
USA_CAL	Consider bicyclist and pedestrian comfort when designing new or improved facilities for state highways, and encourage use of this approach by local agencies	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	CAL (2017) Action M1.5 p43
USA_CAL	Provide a comprehensive resource on best practice bicycle and pedestrian design treatments for California	(2) Infrastructure Measures	(d) Cycle Network	No	CAL (2017) Action M1.6 p44
USA_CAL	Consider expanding active transportation guidance to include micro-mobility, e-bikes, e-scooters, and green infrastructure.	(6) Other		Yes (targeted)	CAL (2023) p73
USA_CAL	Electric Bicycle Incentives Project provides up to \$2,000 of point-of-sale incentives to support the purchase of a new e-bike. Subsidies to increase access to e-bikes for disadvantaged communities, noting cost is often a financial barrier for e-bikes. It encourages adoption for low-income individuals of e-bikes as a replacement for motor vehicle trips.	(3) Financial incentives		Yes (targeted)	CAL (2023) p35
USA_CAL	Support e-bikes in State Parks: Resources to support use of e-bikes in State parks, including resourcing on locations and policies and FAQs	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Yes (targeted)	CAL (2023) p35
USA_CAL	Regional Micromobility Coordination effort among municipalities, transit agencies, universities, and military to establish best practices for effective micromobility operations.	(6) Other		Yes (targeted)	CAL (2023) p35
USA_CAL	Incorporate first mile/last mile planning for pedestrian access needs for all intercity/high speed rail and transit systems	(2) Infrastructure Measures	(c) Public Transport	No	CAL (2017) Action M2.1 p45
USA_CAL	Identify bicycle (including e-bikes) parking needs at transit, rail and park and ride services and define appropriate bicycle accommodation policies	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Partly (mentioned)	CAL (2017) Action M2.2 p45
USA_CAL	Support expanded use of electric bicycles / e-bikes in California, including the provision of a network of public electric bike charging infrastructure	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Yes (targeted)	CAL (2017) Action M2.5 p47
USA_CAL	Provide seamless integration of bike share and public transit fare systems on a regional or statewide scale	(2) Infrastructure Measures	(c) Public Transport	Partly (mentioned)	CAL (2017) Action M2.4 p46
USA_CAL	Facilitate opportunities for local freight delivery by bicycle, including e-bikes, including funding pilot implementation	(3) Financial incentives		Yes (targeted)	CAL (2017) Action M2.6 p47
USA_CAL	Explore development of a statewide bike share system that reaches the maximum number of Californians	(5) Data & Evaluation		Yes (targeted)	CAL (2017) Action M2.3 p46
USA_CAL	Provide guidance to state and local agencies on school and government building siting that considers walkability, bike ability, and proximity to transit	(2) Infrastructure Measures	(b) Planning	No	CAL (2017) Action M3.1 p49

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
USA_CAL	Link land use plans, zoning, and design standards to active transportation planning, integrating principles of location efficiency and urban form	(2) Infrastructure Measures	(b) Planning	No	CAL (2017) Action M3.2 p49
USA_CAL	Support the design of transit-oriented, location efficient development that creates density and urban form to encourage pedestrian, bicycle, and transit travel	(2) Infrastructure Measures	(b) Planning	No	CAL (2017) Action M3.3 p50
USA_CAL	Explore opportunities for a consolidated, universal, and flexible wayfinding system applicable to all modes of travel	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	CAL (2017) Action M3.4 p50
USA_CAL	Work with the Federal Highway Administration and other partners to develop a standard for bicycle and pedestrian infrastructure data	(2) Infrastructure Measures	Other	No	CAL (2017) Action M4.4 p52
USA_CAL	Appropriately consider bicycling, pedestrian, and transit concerns in traffic analysis methods	(2) Infrastructure Measures	Other	No	CAL (2017) Action M4.5 p52
USA_CAL	Develop a standard collection method for bicycle and pedestrian counts and create a central database for storing counts	(5) Data & Evaluation		No	CAL (2017) Action M4.1 p51
USA_CAL	Explore opportunities to leverage existing data collection by Caltrans and third parties to better understand use of the system by bicyclists and pedestrians	(5) Data & Evaluation		No	CAL (2017) Action M4.2 p51
USA_CAL	Improve state travel surveys to better represent bicycle and pedestrian travel	(5) Data & Evaluation		No	CAL (2017) Action M4.3 p52
USA_CAL	Promote awareness of and connections to key statewide bicycling and walking routes	(1) Campaign / behaviour change		No	CAL (2017) Action M5.1 p53
USA_CAL	Coordinate with state and local convention and visitors bureaus to market bicycling and walking options to tourists	(1) Campaign / behaviour change		No	CAL (2017) Action M5.2 p53
USA_CAL	Support and promote bicycling and walking events for all ages	(1) Campaign / behaviour change		No	CAL (2017) Action M6.1 p55
USA_CAL	Implement model encouragement programs to incentivize walking and bicycling to work for state and partner agency employees	(1) Campaign / behaviour change		No	CAL (2017) Action M6.2 p55
USA_CAL	Research applications of the science of behaviour change in transportation	(1) Campaign / behaviour change		No	CAL (2017) Action M6.3 p53
USA_CAL	Develop a standardized menu of services and condition expectations/ quality service standards for bicycle and pedestrian facilities and update the existing maintenance manual	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	CAL (2017) Action P1.1 p59
USA_CAL	Require consideration of bicyclists and pedestrians during temporary traffic control for construction or maintenance	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	CAL (2017) Action P1.2 p59
USA_CAL	Incorporate bicycle and pedestrian needs into asset management plans and associated programming and prioritization processes	(2) Infrastructure Measures	(b) Planning	No	CAL (2017) Action P2.1 p61
USA_CAL	Develop an Adopt-a-Bikeway program to assist with maintenance of bicycle facilities, similar to Adopt-a-Highway	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	CAL (2017) Action P2.2 p62
USA_CAL	Include maintenance staff in Project Initiation Document, planning, and design phases for projects to consider impacts	(2) Infrastructure Measures	Other	No	CAL (2017) Action P2.3 p62
USA_CAL	Develop equity focused plans at the regional or district level to proactively identify opportunities for safer highway crossings, including addressing personal safety	(2) Infrastructure Measures	Other	No	CAL (2017) Action S1.1 p27

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
USA_CAL	Work with regional and local agencies internally to apply the guidelines in Caltrans' Complete Intersections Guide, Main Street, California Guide, and National Association of City Transportation Officials guidelines	(2) Infrastructure Measures	Other	No	CAL (2017) Action S1.2 p28
USA_CAL	Develop and implement a systemic safety analysis approach to address infrastructure that poses a higher risk to vulnerable users	(2) Infrastructure Measures	Other	No	CAL (2017) Action S1.3 p28
USA_CAL	Include active transportation infrastructure concepts and bicycle/ pedestrian safety information in regular driver handbook updates	(1) Campaign / behaviour change		No	CAL (2017) Action S2.1, p29.
USA_CAL	Provide universal elementary school bicycle and pedestrian curriculum	(1) Campaign / behaviour change		No	CAL (2017) Action S2.4, p30.
USA_CAL	Advance an adult-oriented safe bicycling and walking curriculum	(1) Campaign / behaviour change		No	CAL (2017) Action S2.5 p31
USA_CAL	Incorporate Americans with Disabilities Act awareness into all active transportation educational programs	(1) Campaign / behaviour change		No	CAL (2017)) Action S2.6 p31
USA_CAL	Include bicycle and pedestrian content in driver testing exams for all new and re-licensing drivers	(4) Legal interventions		No	CAL (2017) Action S2.2 p29
USA_CAL	Explore periodic re-licensing of drivers	(4) Legal interventions		No	CAL (2017) Action S2.3 p29
USA_CAL	Engage colleges and universities in including current, best-practice bicycle and pedestrian design in engineering programs	(1) Campaign / behaviour change		No	CAL (2017) Action S3.1 p33
USA_CAL	Continue developing approaches to integrate hospital data into collision reporting	(5) Data & Evaluation		No	CAL (2017) Action S3.2 p34
USA_CAL	Develop improved exposure estimates for bicycling and walking	(5) Data & Evaluation		No	CAL (2017) Action S3.3 p34
USA_CAL	Explore the feasibility of conducting a pilot study of the information being compiled regarding collisions involving bicycles and pedestrians, leveraging investment in exposure estimates developed in S3.2	(5) Data & Evaluation		No	CAL (2017) Action S3.3 p34
USA_CAL	Explore use of technology and engineering methods to reduce speeding and aggressive driving	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	CAL (2017) Action S4.3 p35
USA_CAL	Research methods for setting and enforcing speed limits	(4) Legal interventions		No	CAL (2017) Action S4.4 p35
USA_CAL	Support updates to police officer training to curb road user behaviours that pose the greatest risk of collision, injury, and fatality	(4) Legal interventions		No	CAL (2017) Action S4.1 p35
USA_CAL	Support and fund diversion programs for bicyclists and pedestrians cited for a traffic offense	(4) Legal interventions		No	CAL (2017) Action S4.2 p36
UK_London	We will tackle dangerous behaviour through ... enhanced enforcement, focusing on the behaviours that create the greatest harm	(4) Legal interventions		No	UK (2022) Action 7
UK_London	Develop advice and messaging to support cargo bike benefits	(1) Campaign / behaviour change		Yes (targeted)	UK (2023)
UK_London	Use procurement policy to support cargo bike uptake	(3) Financial incentives		Yes (targeted)	UK (2023)
UK_London	Cargo bikes as preferred option in Low Traffic Neighbourhoods and vehicle emission-based schemes (micromobility)	(2) Infrastructure Measures	(b) Planning	Yes (targeted)	UK (2023)
UK_London	Establish micromobility hubs, including minimum and preferred micromobility hub requirements, developing process for public land for hubs, support integrated logistics trials.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Yes (targeted)	UK (2023)

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
UK_London	Develop a London safety standard for cargo bikes (e-cargo) that adopts best practice, and update and publish cargo bike guidance for operators and riders	(4) Legal interventions		Yes (targeted)	UK (2023)
UK_London	Expand the Cycleway network so that 40 per cent of Londoners live within 400 metres of the network by 2030.	(2) Infrastructure Measures	(d) Cycle Network	No	UK (2022), Action 1
UK_London	We will make appropriate use of trials and semi-permanent measures to test interventions that improve our road networks, and support boroughs to do the same. We will take steps to ensure we engage local communities, with the aim of speeding up the delivery of schemes that meet local needs and reduce road danger.	(2) Infrastructure Measures	(e) Separating Cycleways	No	UK (2022), Action 10
UK_London	We will improve cycle parking provision on-street, at stations, in schools and in residential areas to support a wide range of trips and Londoners, with a focus on the delivery of 42,000 new secure residential cycle-parking spaces by 2030	(2) Infrastructure Measures	(a) Facilities (including end of trip)	No	UK (2022), Action 11
UK_London	We will support national and local partners to combat cycle theft, including through a new Cycle Crime Prevention Partnership targeting cycle theft hotspots in London and through our own infrastructure and education programmes	(2) Infrastructure Measures	Other	No	UK (2022), Action 12
UK_London	Consider concessionary fares to support most disadvantaged Londoners to access a new modernised and electrified Santander Cycle scheme.	(3) Financial incentives		Yes (targeted)	UK (2022), Action 13
UK_London	Expand, modernise and electrify Santander Cycles hire scheme, including new fleet that supports future technology.	(6) Other		Yes (targeted)	UK (2022), Action 13
UK_London	Increase the number of dedicated parking bays for micromobility services to reduce clutter on footways.	(2) Infrastructure Measures	(a) Facilities (including end of trip)	Yes (targeted)	UK (2022), Action 14
UK_London	Work with micromobility operators, London Councils and London boroughs to optimise micromobility rental opportunities.	(6) Other		Yes (targeted)	UK (2022) Action 14
UK_London	We will engage with stakeholders and Government to explore ways to support the lowest earners, the self-employed and disabled people with the cost of purchasing a cycle. We also continue to support community groups and boroughs with measures to improve access to cycles to those in need.	(3) Financial incentives		No	UK (2022) Action 15
UK_London	Support community groups and boroughs with measures to improve access to cycles to those in need.	(3) Financial incentives		No	UK (2022) Action 15
UK_London	Engage stakeholders to explore ways to support the lowest earners, the self-employed and disabled people with the cost of purchasing a cycle.	(3) Financial incentives		No	UK (2022) Action 15
UK_London	Implement London's first Cargo bike action plan, to support the growth of cycle freight and its role in reducing motorised traffic.	(6) Other		Yes (targeted)	UK (2022) Action 16
UK_London	Improve digital journey planning and navigation tools by developing routing principles, embedding principles in the routing algorithm of our TfL Go journey-planning app and sharing them with third-party developers to improve other journey-planning services. We will work closely with third-party developers to harness their insights and datasets, and assist with their research and development. We will share, create and maintaining the datasets required to improve routing	(5) Data & Evaluation		No	UK (2022) Action 17
UK_London	Fund training of more than 40,000 children to Bike ability level 2 and more than 20,000 adults	(3) Financial incentives		No	UK (2022) Action 18
UK_London	Continue to provide and improve online Cycle Skills training	(3) Financial incentives		No	UK (2022) Action 18
UK_London	Enrol more schools in the STARS programme to reach 1,000 gold-accredited schools by the end of September 2025	(3) Financial incentives		No	UK (2022) Action 18
UK_London	Share best practice and ideas for replicable projects through online Community Ideas Hub	(1) Campaign / behaviour change		No	UK (2022) Action 19
UK_London	Provide financial support through the Walking/Cycling grant programme to fund 150 community-led projects per year	(3) Financial incentives		No	UK (2022) Action 19

Appendix 2: Policy interventions

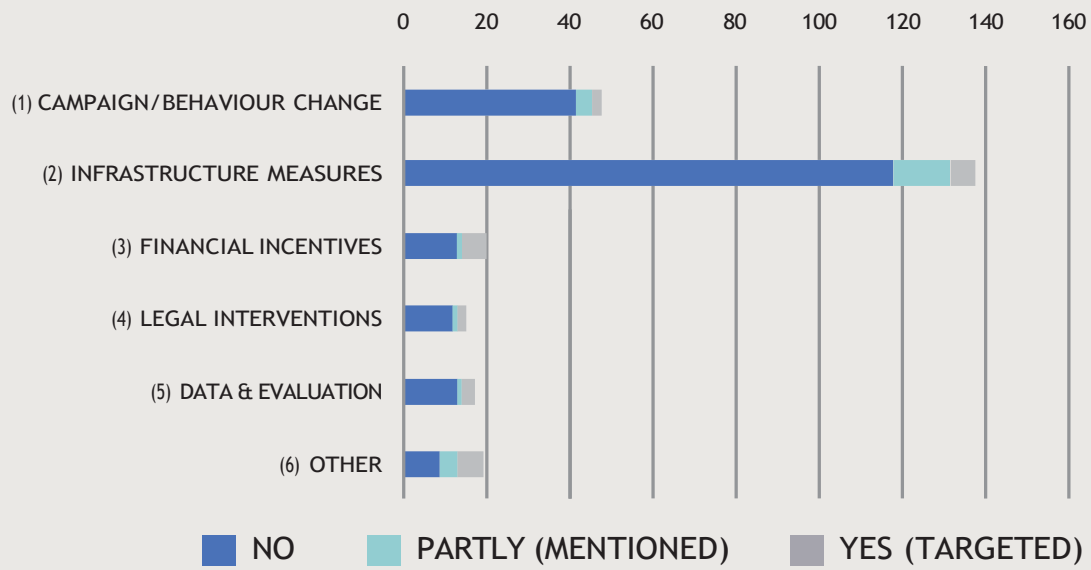
Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
UK_London	Develop and promote the tools that support London boroughs in the planning of balanced outcomes, maximising efficient use of road space. This will include the publication of the refreshed Strategic Cycling Analysis, alongside other strategic data to support planning for Healthy Streets, in 2023	(2) Infrastructure Measures	(b) Planning	No	UK (2022) Action 2
UK_London	Promote active travel for all as a sustainable, enjoyable and healthy mode of transport through an evidence-led approach that focuses on inspiring, informing and influencing Londoners to do more walking and cycling.	(1) Campaign / behaviour change		No	UK (2022) Action 20
UK_London	Promote active travel through an evidence-led approach that focuses on inspiring, informing and influencing Londoners to do more walking and cycling.	(1) Campaign / behaviour change		No	UK (2022) Action 20
UK_London	Work with partners to make case for investment in community projects and simplify grant application processes	(3) Financial incentives		No	UK (2022) Action 19
UK_London	Coordinate our investment in cycling infrastructure and other enabling measures to tackle all barriers to cycling and maximise the number of trips unlocked by our investment.	(2) Infrastructure Measures	Other	No	UK (2022) Action 3
UK_London	Support London boroughs to roll out Low Traffic Neighbourhoods that prioritise sustainable modes	(3) Financial incentives		No	UK (2022) Action 4
UK_London	Encourage boroughs to implement more School Streets, helping young Londoners to travel sustainably and actively to primary and secondary schools	(3) Financial incentives		No	UK (2022) Action 5
UK_London	Develop designs for 10 more Safer Junction locations by 2024, and bring forward a new, larger pipeline of transformative junction safety improvements on both our and borough roads, which will be identified and prioritised through a risk-based approach	(2) Infrastructure Measures	(g) Traffic Safety / Calming	No	UK (2022) Action 6
UK_London	Ensure that our design guidance documents use inclusive design principles, are based on the latest research and evaluation of infrastructure, and reflect changes to national standards, such as the Highway Code 2021 amendments	(2) Infrastructure Measures	(b) Planning	No	UK (2022) Action 8
UK_London	Work with construction and utility companies to educate them on temporary traffic management to ensure streets are accessible to all, including people using larger cycles, such as cargo bikes, or adapted cycles used as mobility aids.	(1) Campaign / behaviour change		No	UK (2022) Action 9
UK_London	We will tackle dangerous behaviour through education campaigns ... focusing on the behaviours causing the greatest harm	(1) Campaign / behaviour change		No	UK (2022) Action 7
WA	Your Move Schools Program - whole of school approach that enables school staff, parents and students to become active transport champions, embed active travel culture	(1) Campaign / behaviour change		No	WA (2022) p7
WA	Planning and design guidance suite, including Bicycle Planning Guidelines, Providing Bike Riding in LATM Schemes	(2) Infrastructure Measures	(b) Planning	No	WA (2022) p7
WA	Long Term Cycle Network for Perth and Peel	(2) Infrastructure Measures	(b) Planning	No	WA (2022) p8
WA	Regional 2050 Cycling Strategies - identify gaps in existing cycling networks, plan for future growth corridors and produce strategic and operational plans for regional centres	(2) Infrastructure Measures	(b) Planning	No	WA (2022) p24
WA	Expand Principal Shared Path (PSP) Network - high standard bicycle routes for longer, more direct cycling trips with minimal interruption from traffic. Including completing PSP network within 15 km radius of CBD.	(2) Infrastructure Measures	(d) Cycle Network	No	WA (2022) p11
WA	WA Bicycle Network (WABN) Grants Program - provides funding for local govt (dollar for dollar) for the planning, design, and implementation of bike riding infrastructure.	(2) Infrastructure Measures	(d) Cycle Network	No	WA (2022) p14
WA	Safe Active Streets Program - providing safe walking and riding routes through suburbs to local amenities and schools, including through Bike Boulevards	(2) Infrastructure Measures	(d) Cycle Network	No	WA (2022) p17

Appendix 2: Policy interventions

Jurisdiction	Intervention	Type of Intervention [Select (1) - (5)]	For infrastructure interventions, sub-type [select (a) - (f)]	Targeted to e-rideables?	Reference
WA	Connecting Schools Grant Program - schools performing well in Your Move School program can receive grant funding, primarily for end of trip facilities	(2) Infrastructure Measures	(d) Cycle Network	No	WA (2022) p17
WA	Journey planner and hazard reporting tool, including the multi-modal journey planning on Your Move website	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	WA (2022) p23
WA	Your Move - An active lifestyle program that helps people with information and support to make it easier for them to walk, wheel and ride to the places they need to go.	(1) Campaign / behaviour change		No	
WA	Rail Station Access Improvement Program	(2) Infrastructure Measures	(c) Public Transport	No	
NT	Complete an audit which identifies locations of cycling and micromobility infrastructure opportunities, including modification of intersections to promote safe cycling and micromobility	(5) Data & Evaluation		Partly (mentioned)	NT (2021) p24
NT	Create a priority cycling and micromobility infrastructure program that considers place-based and integrated infrastructure planning which align with the Darwin municipality Area Plans, including an annual program budget	(2) Infrastructure Measures	(b) Planning	Partly (mentioned)	NT (2021) p24
NT	Undertake a priority cycling and micromobility infrastructure program	(2) Infrastructure Measures	(d) Cycle Network	Partly (mentioned)	NT (2021) p24
NT	Increase net shade around key cycling and micromobility routes	(2) Infrastructure Measures	(d) Cycle Network	Partly (mentioned)	NT (2021) p24
NT	Advocate for shade and similar improvements along NTG routes	(2) Infrastructure Measures	(d) Cycle Network	No	MT (2021) p24
NT	Investigate options to promote safe cycling and micromobility activities	(1) Campaign / behaviour change		Partly (mentioned)	NT (2021) p25
NT	Promote cycling and micromobility as viable transport options for short trips	(1) Campaign / behaviour change		Partly (mentioned)	NT (2021) p25
NT	Create and maintain a comprehensive wayfinding and signage plan incorporating time to destination and key location information	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	NT (2021) p25
NT	Deliver the wayfinding and signage plan	(2) Infrastructure Measures	(f) Navigation / signage / signage	No	NT (2021) p25
NT	Continue to support the use of innovative cycling and micromobility options	(6) Other		Partly (mentioned)	NT (2021) p25
TAS	Continue bringing together key partners to develop a coordinated approach to support the uptake of electric vehicles in Tasmania. The Tas working group defines electric vehicles to include cars, e-bikes and e-scooters.	(6) Other		Partly (mentioned)	TAS (2023) Action 2.3.9

Appendix 2: Policy interventions

INTERVENTIONS BY TYPE, AND IF TARGETED TO ERIDEABLES

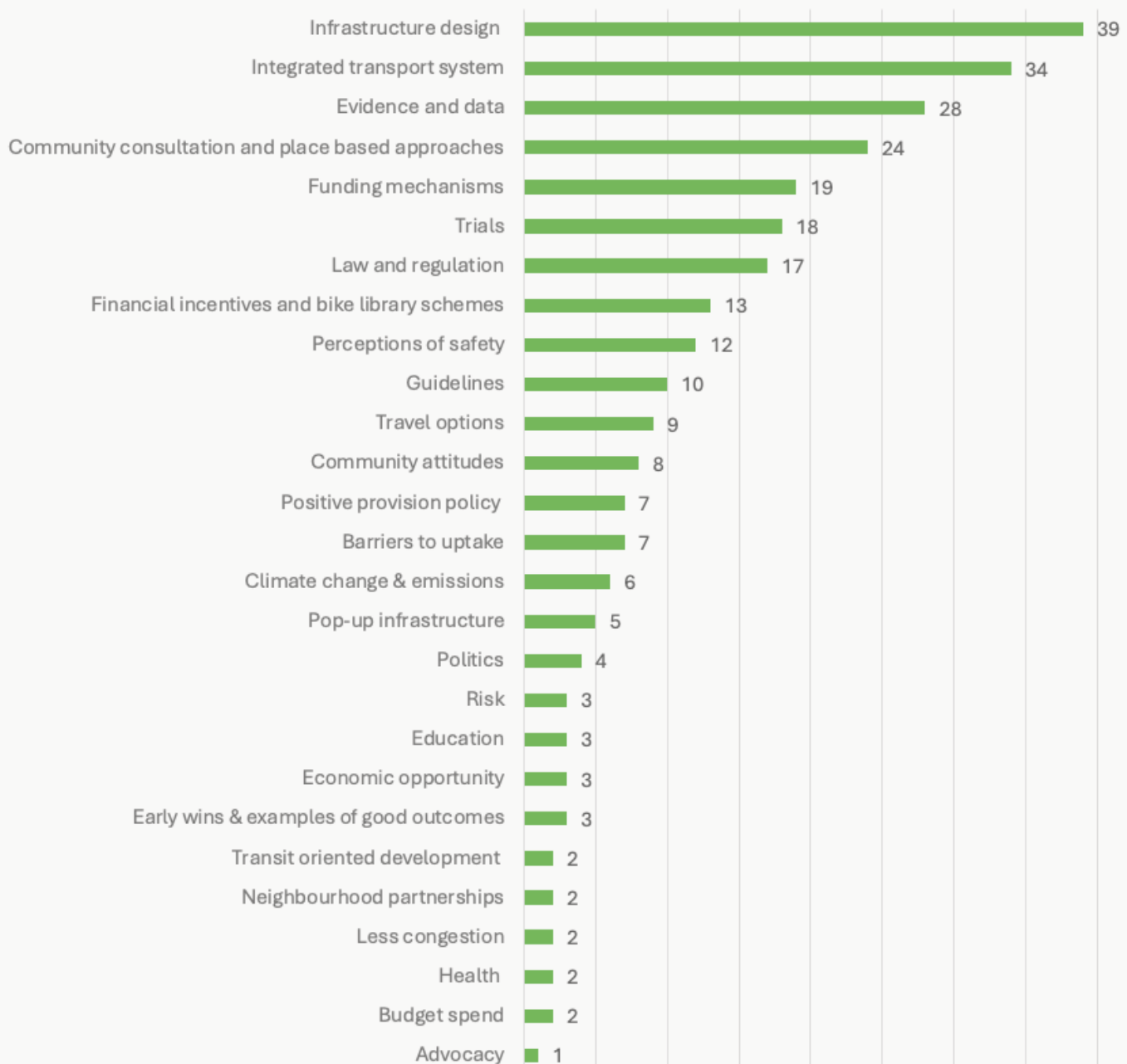


Appendix 3: Frequency of codes from semi structured interviews

The project team would like to thank staff from the following organisations who participated in the semi-structured interviews: - Beam - iMove Cooperative Research Centre - New Zealand Transport Agency - Royal Automobile Club of Western Australia - Tasmanian Government, Department of State Growth - Transport Canberra and City Services - Transport for New South Wales - Victorian Government, Department of Transport and Planning.

Thematic analysis was undertaken by assigning quotations from interviews transcripts to thematic codes. The frequency with which quotes were assigned to codes is summarised in the chart below.

FREQUENCY OF CODES RESULTING FROM SEMI-STRUCTURED INTERVIEWS



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