APPI
Australian Public Policy Institute

Policy Insights Paper

Harnessing data for safe, inclusive and sustainable mobility

Professor Amelia Thorpe, Associate Professor Marilyn Johnson and Derek Chong

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Contents

Acknowledgment of Country

The Australian Public Policy Institute acknowledges the Gadigal people of the Eora Nation and the Ngunnawal people upon whose ancestral lands our Institute stands.

We pay respect to Elders both past and present, acknowledging them as the traditional custodians of knowledge for these lands. We celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of Australia.

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Derek Chong is a highly experienced computational modeller, with qualifications in computer science, software engineering and aeronautical engineering, specialising in spatial data and simulations. He developed Phoenix, the bushfire risk program used in State Emergency Centres across Australia.

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Authorship

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Executive summary

Urban mobility is a major policy challenge in NSW, with transport infrastructure playing a crucial role in economic efficiency, environmental sustainability, social inclusion and road safety. The current review of the Roads Act 1993 (NSW) offers a significant opportunity to position NSW as a leader in safe, data-driven, and equitable urban mobility policy.

A significant challenge for successful mobility policy is that gaps remain in understanding where and how people cycle, which means that investment decisions linked to cycling infrastructure are based on partial evidence.

This project addresses key knowledge gaps by analysing GPS trip data from food delivery riders through a unique data-sharing agreement with Uber. Food delivery cyclists, offer unique insights into the broader road network as they make frequent, short trips across diverse locations. The research incorporated anonymised Uber data, naturalistic cycling study data (video and GPS), interviews with delivery riders and perspectives from state and local policymakers. Together, these data sources confirmed the importance of building knowledge about where people cycle. Motor vehicles are the top safety concern among riders. Delivery cyclists seek safe infrastructure, particularly separated bicycle lanes.

The study identified that key stakeholders recognise the potential for commercial data to inform transport planning. They also recognise the possibility of greater collaboration across government to enable evidence-based policymaking in this area.

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> Insights from the project highlight the **potential of commercial cycling data** to inform NSW’s transport, road safety and environmental goals.

Insights from the project highlight the potential of commercial cycling data to inform NSW’s transport, road safety and climate goals. Moving more people and freight by bicycle can reduce emissions and improve efficiency and road safety outcomes. Achieving these benefits requires improved infrastructure and governance that supports active transport objectives.

Comprehensive data, such as GPS routes, temporal patterns, speed behaviour and near-crash locations, can be used to better inform evidence-based policies. However, data access is constrained by commercial sensitivities and technical complexities that requires expert geospatial data analysis and strong digital security.

Privacy, particularly for consumers, and ethical oversight were also identified.

This paper identifies a series of evidence-based policy opportunities to position NSW as a leader in safe, efficient and equitable urban mobility.

Policy opportunities – at a glance

1 **Establish robust data-sharing pathways between governments and industry**

NSW governments could create a structured, privacy-conscious framework for ongoing, secure data-sharing with commercial delivery platforms.

2 **Identify and prioritise locations for infrastructure investment using existing and new data**

Combined data sources and stakeholder input could map and prioritise high-risk and underserved cycling routes for targeted infrastructure investment.

3 **Pilot data-driven safety and infrastructure programs**

Pilot programs would allow for testing new infrastructure and safety initiatives before statewide rollout.

4 **Prioritise separated cycling infrastructure over shared paths**

Physically separated bike lanes could be prioritised over shared paths to reduce conflicts and improve safety.

5 **Make infrastructure intuitive and self-enforcing**

Existing physical cues like kerbs or barriers could support safer roads, particularly if developed collaboratively with councils and rider groups.

6 **Simplify road rules for safe interactions among all road users**

Clear road rules supported by public education campaigns could help reduce confusion and conflict among road users.

7 **Invest in infrastructure that supports safe delivery zones**

Designated delivery areas with amenities like parking and shelters in high-demand zones could reduce footpath congestion and improve rider safety.

8 **Support non-punitive safety measures**

Focus on systemic improvements and education rather than fines.

Background

Urban mobility is a major policy challenge facing policymakers in NSW and around the world.

An efficient transport system underpins the success of most, if not all, public policies, as demonstrated by the NSW Government's investment of $41.4 billion over four years.[1]

This study aims to inform that investment.

Safe movement of people and goods is crucial for communities and the economy, yet road transport accounts for 85 per cent of all transport emissions. Where possible, trips need to shift from trucks and cars to active and public transport to maximise safety, efficiency and meet climate goals.

Infrastructure is essential to support that shift. Yet, infrastructure in the wrong locations is an inefficient use of public funds for everyone. Bike lanes in the wrong locations take space away from drivers without improving safety for cyclists. The result can be empty bike lanes that increase motorised traffic congestion and exacerbate tensions.

This project was designed to inform investment in transport infrastructure. By understanding where people ride bicycles, better evidence can be generated to avoid expensive investment mistakes.

Efforts to understand where people cycle have been patchy and over reliant on commuting and sport, providing only a partial picture to policymakers.[2] Commuting and sport are just two of the six types of cycling trips identified in the Napper Typology (Figure 1). To date, the trip type 'work' has been missing from our understanding of where people are riding bicycles in Australia.

It is crucial to consider all types of cycling trip data to inform infrastructure investment.

Commercial delivery riders are a unique cohort who travel across the entire network to thousands of destinations. Every trip is GPS tracked, offering the potential to generate new insights to inform active transport policy and investment.

Our collaboration with the City of Sydney identified that half (52 per cent) of the cyclists using pop-up bike lanes installed during COVID-19 were food delivery cyclists.[3]

Food delivery cyclists are more akin to 'ordinary' cyclists who are the focus of mode shift policies. Unlike other commercial cyclists, who are often highly skilled and experienced riders, our previous research interviewing commercial cyclists showed varying levels of experience, skills, and confidence.[4]

Thanks to our landmark, Australian-first data-sharing agreement between Uber and UNSW Sydney, this project analysed data from commercial cyclists to provide insights about the use of cycling infrastructure across the City of Sydney. Insights can support the NSW Government to deliver the objectives of numerous strategies, including Movement and Place, Future Transport Strategy, Active Transport Strategy, Clean Air Strategy, Freight and Ports Plan and Sustainable Sydney 2030-2050.

The study focused on how data from food delivery riders can inform action to improve the road environment for all road users.

Much of the policy and academic work on food delivery cyclists to date has focused on employment arrangements.[5] That work is important and has produced important safety improvements. This project is based on the premise that the food delivery industry could be the catalyst for greater road safety improvements, benefiting commercial cyclists and everyone on our roads.

There is great potential for commercial cycling to advance road safety, decarbonisation and other social, economic and environmental goals.[6] Moving food and other freight from cars and vans to bicycles could bring enormous benefits to NSW and Australia. By providing insights to inform decision-making about the road environment, this project can help to advance both road safety and mode shift objectives.

> Food delivery riders are a unique cohort who travel across the entire road network to thousands of destinations. **Every trip is GPS tracked.**

Policy context: active transport

Governments at all levels have committed to increasing active transport, recognising the enormous social, economic and environmental costs of relying too heavily on private cars. Key commitments in NSW are summarised in Table 1.

Currently, 64 per cent of short weekday trips (less than 2km) are made by car.[7] With safe infrastructure in the right locations, there is huge potential to increase cycling in Sydney.

Table 1 | Key NSW Government commitments

POLICY	COMMITMENTS
2026 Road Safety Action Plan	Halve deaths and reduce serious injuries for pedestrians and cyclists by 30 per cent on NSW roads by 2030.
Transport and Infrastructure Net Zero Roadmap and Action Plan, 2025	Invest in enabling low and zero emissions transport infrastructure (avoid and shift). Substantially increase use of active and public transport.
Climate Change (Net Zero Future) Act 2023	Reduce carbon emissions from transport to help cut overall emissions and reach Net Zero by 2050.
Active Transport Strategy 2022	Double the number of children walking or riding to school in cities and major centres. Build at least 1,000km of new cycleways and supporting infrastructure.
Transport for NSW Road User Space Allocation Procedure, 2023	Allocate road space according to the road user hierarchy: 1) people spending time; 2) walking; 3) cycling; 4) public transport; 5) freight and services; 6) private vehicles and point-to-point.
Roads Act Review Issues Paper, 2025	Reviewing the Roads Act 1993 (NSW) to achieve "More contemporary uses for roads and streets that are safe and responsive to community needs".

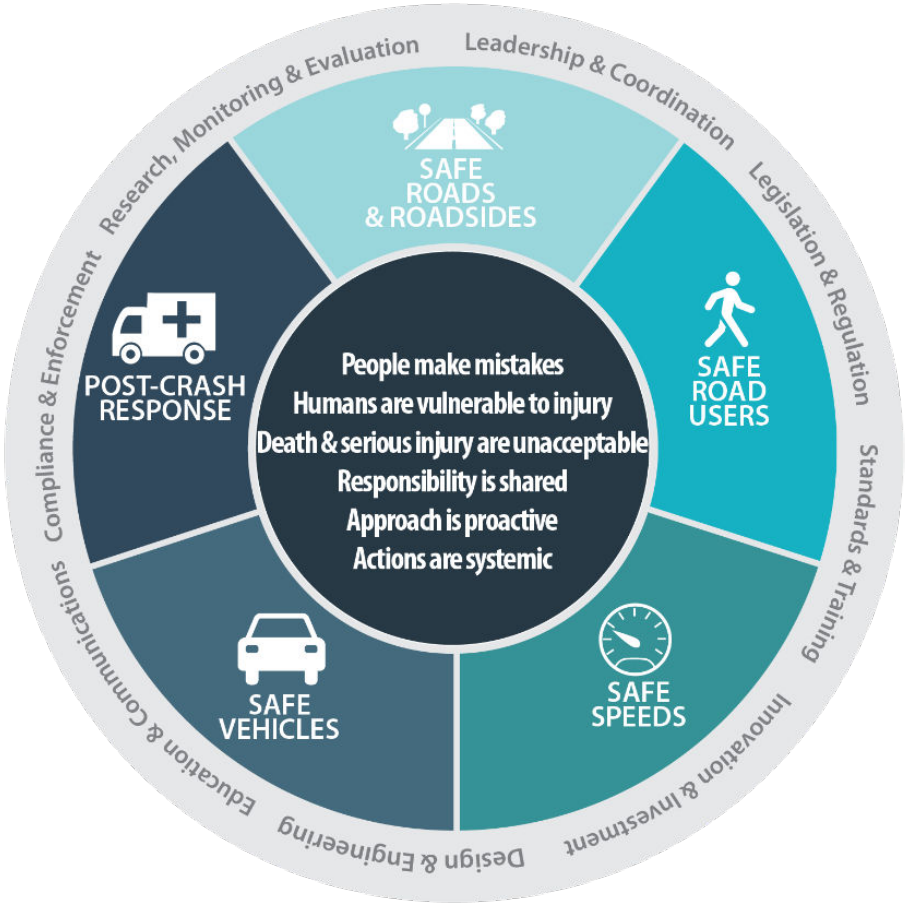
Policy context: road safety

The **Safe System** approach underpins road safety in Australia (Figure 1). Adapted from the Swedish Vision Zero and the Dutch Sustainable Safety, it was adopted nationally in 2004. The Safe System prioritises human life and health, which cannot be compromised or traded for benefits in mobility.[8] Taking a systems approach, the Safe System addresses all elements of the transport system, including safe roads, safe speeds, safe vehicles and safe people. Responsibility is shared.

Critical to the Safe System approach to road safety is the central tenet that 'people make mistakes,' but a mistake should not result in crashes that cause death or serious injury. The emphasis is on creating safe pre-conditions, including physical, regulatory and social networks, means that everyone can
travel safely.

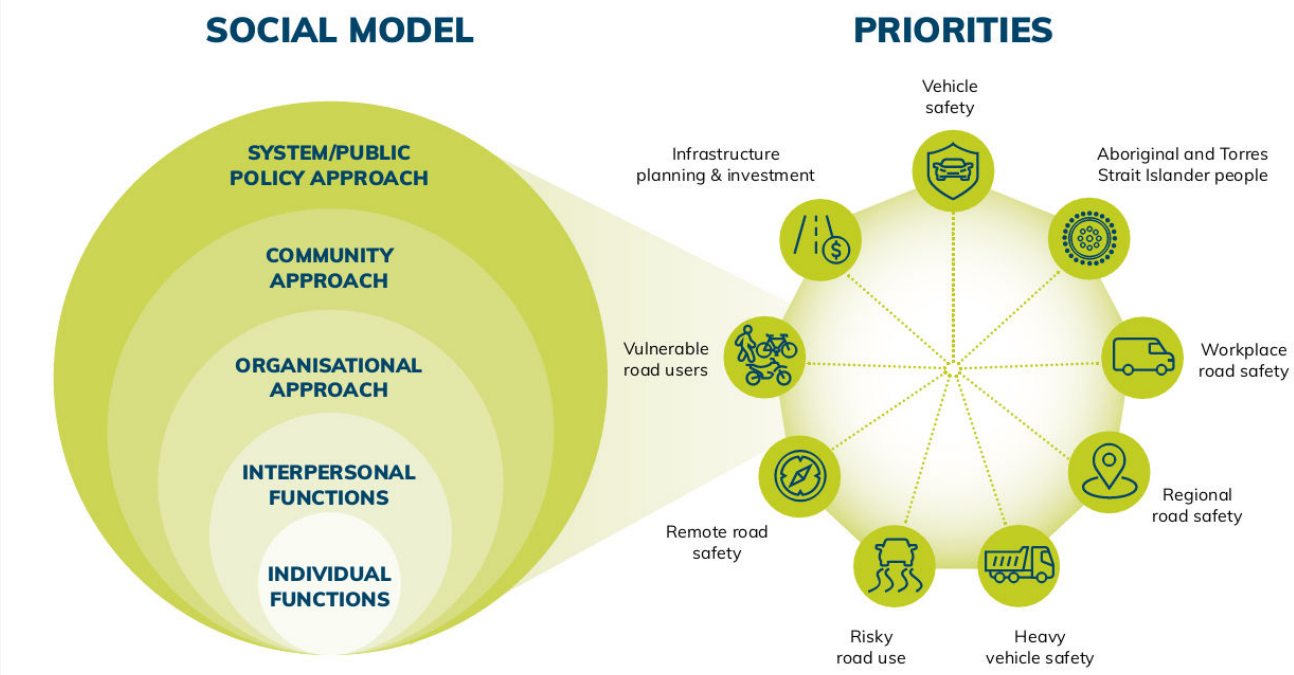
In 2019, the Office of Road Safety expanded the approach to road safety with the **Social Model**. This extends the Safe System by considering the wider social influences on road safety, including how changes to policy beyond the transport sector can influence behaviour and affect social norms about road use. The Social Model recognises that what resonates with one individual may not with another, as we all have different starting points based on our background, environment, and cultural context.

Figure 1 | Safe System



Reproduced with permission[9]

Figure 2 | Social model



System/public policy approach: gearing policy settings, laws, regulation and investment through all levels of government to prevent road death and injury

Community approach: addressing issues from a grass-roots level to facilitate a positive road safety culture

Organisational approach: developing policies and systems to ensure safe road travel and travel-free meeting options

Interpersonal functions: delivering/driving a road safety focus and prevention of injury through effective and influential leadership

Individual functions: working with individuals to find approaches that resonate with individuals taking responsibility for their own road safety

USING THE SOCIAL MODEL TO MAKE THE DIFFERENCE

Reproduced with permission[10]

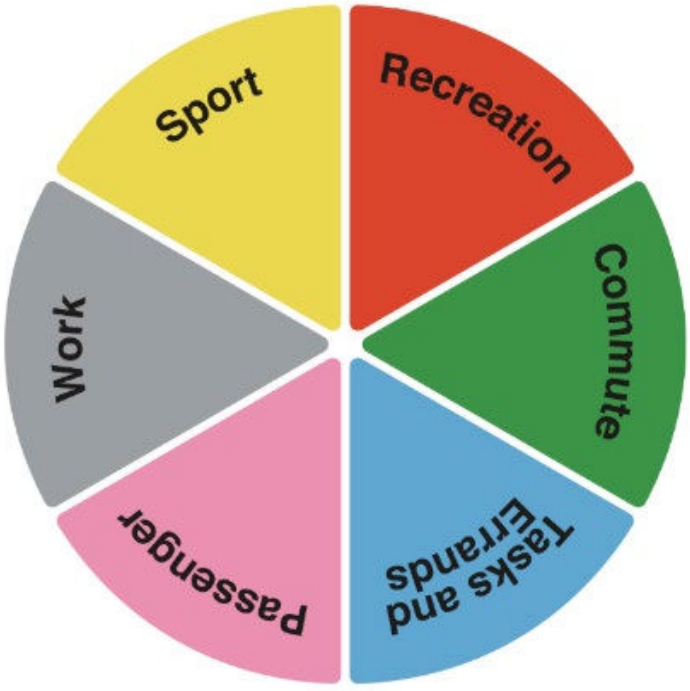
Cycling trip types

In Australia, research into cycling has typically focused on sport or commuting. Other trip types have received less attention, with the result that cycling can be dismissed and mischaracterised. A fuller picture is essential to understand the needs of people who cycle and to ensure that cycling infrastructure decisions and policies are based on the best available evidence.

The Napper Cycling Typology clearly identifies six trip purposes (work, sport, recreation, commute, tasks and errands, and passengers).[11] These can overlap, e.g., food delivery riders (work) who use their bicycle to get to and from home (commute).

By considering all cyclist trip purposes, the typology can help ensure that policy decisions take into account the various utility functions and benefits when integrating cycling into the road network.

Figure 3 | Napper Cycling Typology



Reproduced with permission[12]

Delivery cyclist priorities

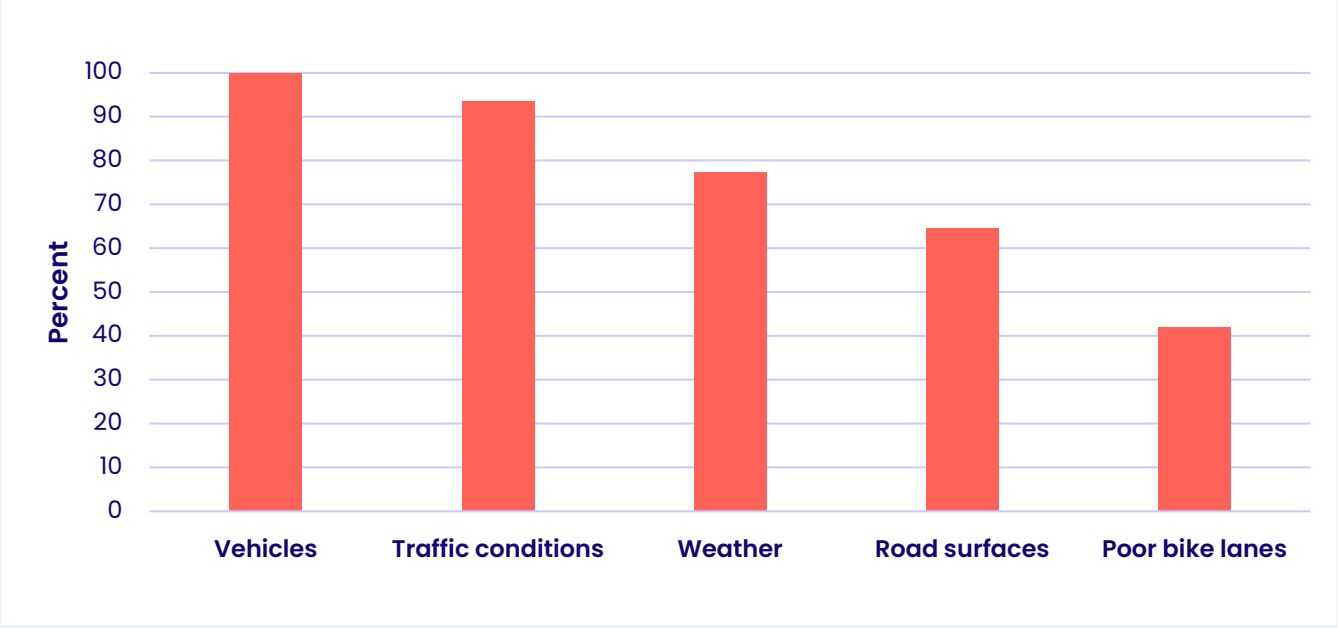
Commercial bicycle delivery has expanded significantly, bringing both benefits and risks.[13] This study builds on our prior research undertaken to address a gap in attention to the road environment and to riders' own voices.[14] Conducted in 2021-23, our mixed-method research captured the first comprehensive picture of delivery cyclist experiences in Sydney and Melbourne.[15]

The biggest concern for all commercial delivery riders was vehicles and the dangers created by drivers. Four of the top five concerns related to road environment (Figure 4).

Many participants reported that they had other job options but chose delivery cycling because they enjoyed their work and its positive aspects like autonomy, flexibility and the joy of being out in the city.

> **The main risk is really the traffic**. They're [drivers] not very accommodating or patient with food delivery riders. I can see that, I can feel it.
>
> - Food delivery cyclist

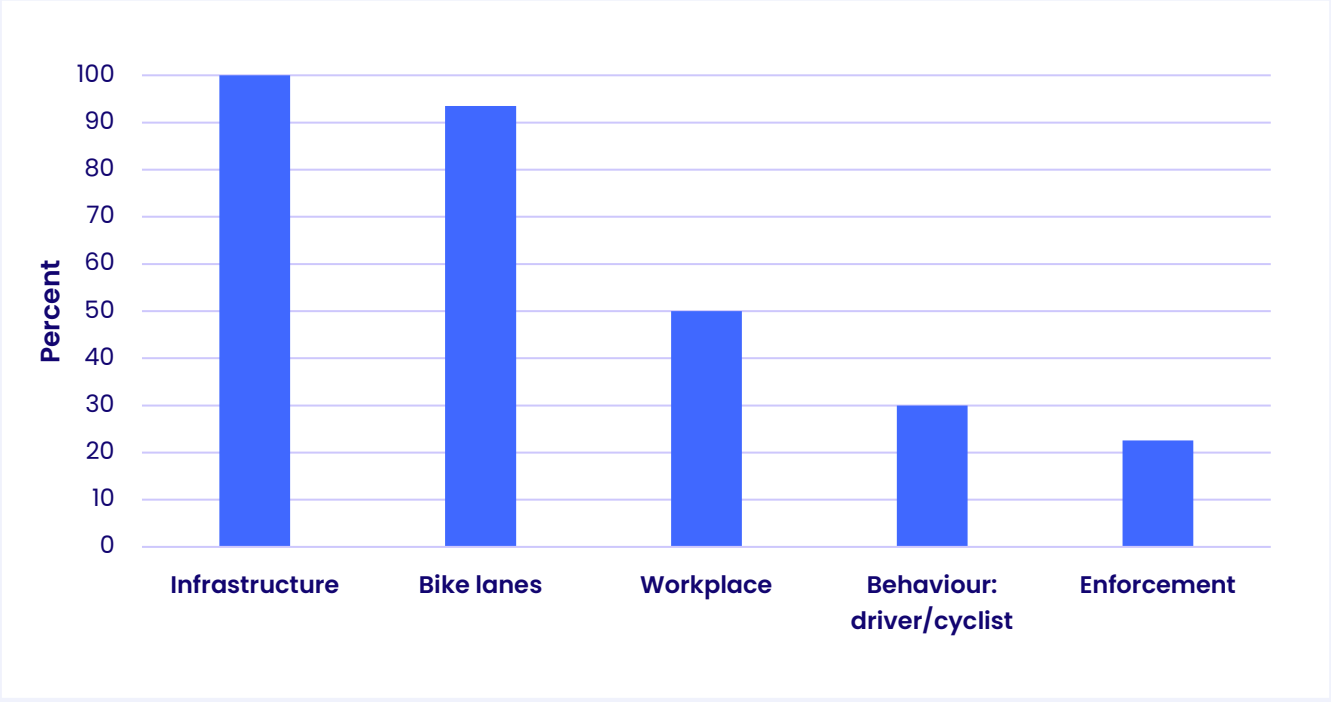
Figure 4 | Top 5 risks identified, unprompted by delivery cyclists in Sydney



Our previous research identified that commercial cyclists want better infrastructure (particularly more bike lanes), better road rules and better enforcement to reduce the dangers created by drivers, especially in inclement weather. Suggestions to improve bike lanes included increased widths, protective barriers, and separation from parked cars and traffic. Changes to working conditions were the third most common recommendation, raised by half of the participants.

> Where there's a concrete barrier, no matter how small it is, a car actually can't get in. The other bike paths people just park in there. **The barrier…[is] really nice**. The Bourke Street bike path in Surry Hills is a good example.
>
> – Food delivery cyclist

Figure 5 | Top 5 suggestions for safety identified by delivery cyclists in Sydney



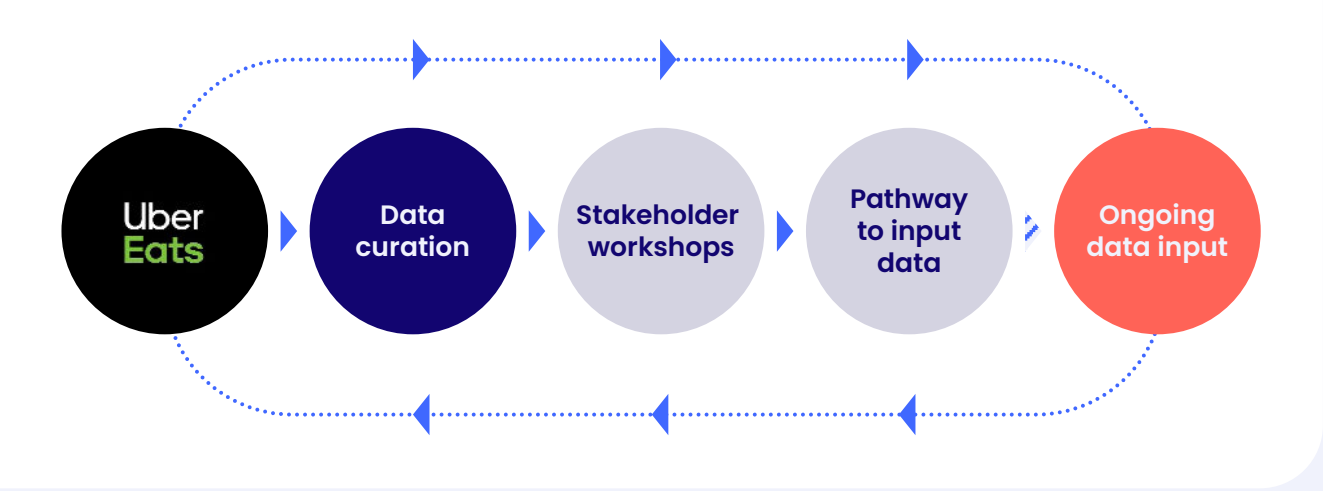
Research overview

Commercial transport companies produce vast amounts of data at the scale of multiple petabytes on road network usage. However, there is currently no established process for sharing this data with governments to support policy development and public investment decisions linked to active transport.

Our previous research identified the potential value of using commercial data on cyclist delivery trips to inform government policy. This study sought to test the feasibility and impact of this opportunity.

Following a commercial-in-confidence data agreement between UNSW Sydney and Uber, the research team proposed a method that utilised the data to identify a pathway to inform government policy. Recognising the limited value of a one-off data input that would provide a 'sugar hit' of information, the research method was designed to identify a mechanism to provide ongoing data input (Figure 6).

Figure 6 | Proposed method



This interdisciplinary, mixed-method study was conducted in three stages:

1) commercial delivery rider data collection and synthesis;

2) survey of experts from state and local government and;

3) interactive workshop.

1 | Commercial cyclist data collection and synthesis

In the first stage, data was collected and synthesised from two sources: Uber and commercial cyclists.

- **Uber data**

  This exclusive dataset was provided by Uber as part of a data-sharing agreement with the authors and UNSW Sydney. The dataset was based on the recorded trips by UberEats riders. The deidentified dataset did not contain any details of individual riders or the home location of any deliveries. Analysis of the Uber data focused on how UberEats riders used the road network in the City of Sydney.

- **Commercial cyclists**

  Led by this research team, this unique dataset was generated as part of our larger previous study funded by the Office of Road Safety. The study included interviews with commercial cyclists (n=52; food delivery and courier), naturalistic cycling video footage (104 hours) and roadside fixed observations (216 hours). These data were analysed to gain insights from riders about their lived experiences on the road.

  The interview and naturalistic study datasets were synthesised to create an understanding of how commercial cyclists use the road network in the City of Sydney.

2 | Survey of experts from state and local governments

The second stage of the project captured expert views, including those from state and local government. Current employees (n = 1 4) from the NSW Government (Transport for NSW, Department of Planning, Housing and Infrastructure, and Placemaking NSW), the City of Sydney and Uber were surveyed. The survey included insights into government aims, cycling in the community, delivery cyclists and cycling trip data.

3 | Interactive workshop

The third stage of the project involved a four-hour, in-person workshop in Sydney. The workshop involved state and local government employees as well as a representative from Uber. The workshop presented the findings and focused on identifying priority data, priority locations, the pathways for data from commercial operators to government and data needs to inform government action.

Commercial cyclist data

The study demonstrated how commercial cyclist data could produce useful insights for government.

Over five years, the research team established the first Australian commercial-in-confidence data agreement with Uber. Negotiations on specific data requests struck a balance between the research ideal (raw trip data) and the commercial ideal (high-level macro summaries).

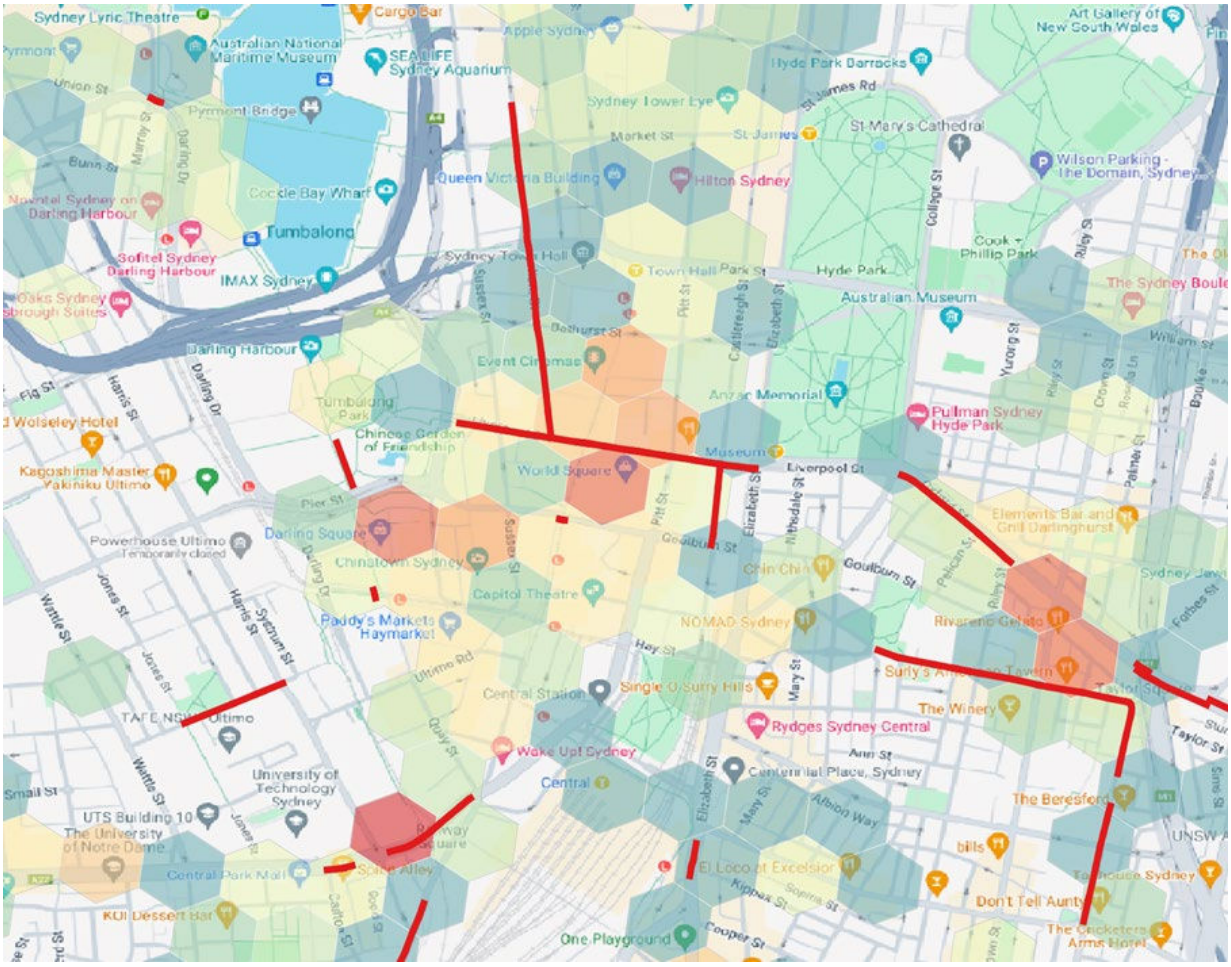
The resulting compromise provided anonymised data on pick-up densities and road usage, initially shared in Uber's H3 geospatial format. Early data at resolution level 8 was too coarse to provide meaningful insights, but continued collaboration secured finer-resolution data (at levels 9 and 10), significantly improving its analytical value[16] (Figure 7).

Figure 7 | Examples of data resolutions from Uber

Figure 8 shows an excerpt of the City of Sydney with the supplied relative pick-up densities at Level 10. The densities were scaled between 0 and 100 per cent (100 per cent being the maximum for the supplied dataset), with high (red) to low (green) density. The red lines indicate the most frequently used road sections by Uber delivery riders in the selected area, demonstrating how such data could generate new insights to inform active transport policy and investments.

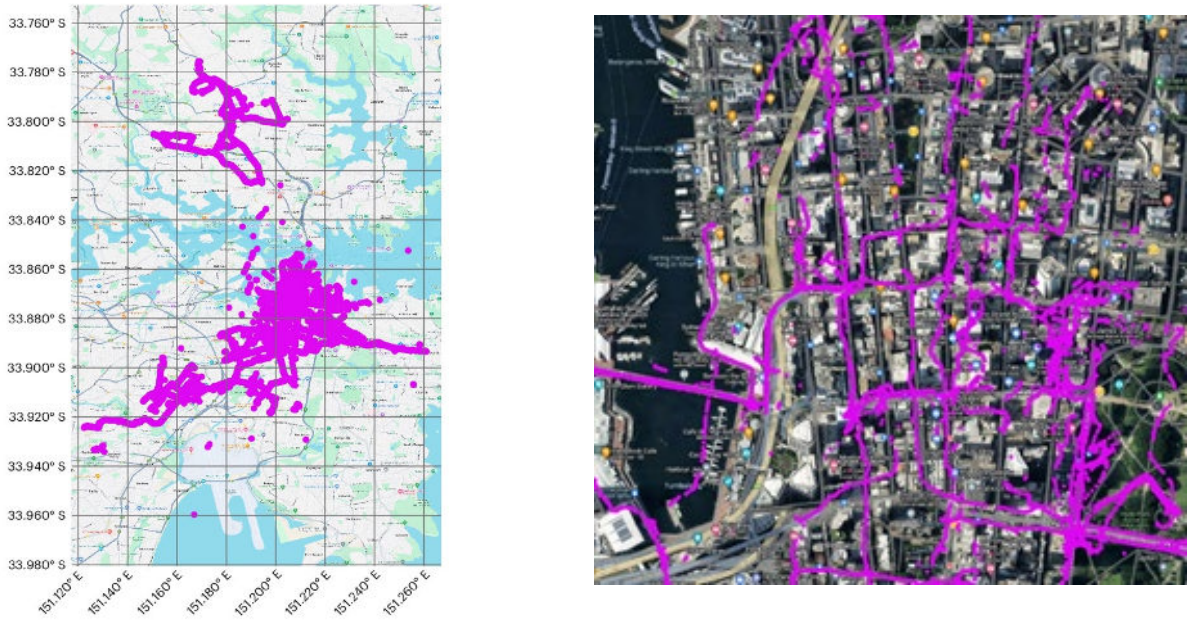
In accordance with the commercial-in-confidence data agreement, the relative pick-up density values used for the colour ramping have not been included.

Figure 8 | Relative pick-up density and most frequently used road sections



The data supplied by Uber was analysed in concert with the data from the previous naturalistic cycling study. The previous study generated the novel dataset by GPS data tracking of food delivery cyclists in Greater Sydney. Figure 9 shows the trips made by riders in that study.

Figure 9 | GPS tracked food delivery riders in Greater Sydney3 (left) and Google Street view of GPS trips (excerpt, right)



As part of the naturalistic study, a camera was fitted to the handlebars of participants' bicycles (Figure 10). This recorded a clear view of their on-road experiences. Importantly, the video footage illustrated the types of infrastructure used by cyclists, provided context for interactions, and eliminated recall bias.

Figure 10 | Video still of view from handlebar-mounted video camera

Data for policy

Stage one of the project demonstrated the types of insights that commercial data can generate. The subsequent survey and workshop identified a range of additional data that, if available and anonymised, could inform cycling policy and investment. Although the discussion of the data needed to inform policy was outside this study's original scope, it is summarised below to outline the data that could benefit local and state governments.

Trip and movement data

GPS-based records of delivery rider trips, including start and end points, routes taken, and timestamps, can be used to enhance understanding of traffic patterns, identify high-risk areas for incidents, and assess how riders interact with road infrastructure.

Temporal patterns

Time-of-day and day-of-week trends in delivery activity could identify peak hours, compare traffic flow, and evaluate safety risks at different times.

Speed and travel behaviour

Average speeds, acceleration, and stopping patterns could detect unsafe behaviours, evaluate compliance with traffic laws, and inform road design improvements.

Delivery density and hotspots

Locations with high concentrations of deliveries or rider activity could help plan infrastructure such as bike lanes, rest areas, or loading zones, and reduce pedestrian conflicts.

Rider demographics and profiles
Cyclist characteristics (e.g., experience level, full-time vs part- time) could build understanding of who is using the road network and tailor safety or support initiatives accordingly.

Incident or near-crash data

Data on locations or conditions where riders experience near-crashes or report hazards could help target interventions, improve road safety, and inform local enforcement or education campaigns.

Challenges

The project identified several challenges that researchers and policymakers need to consider when embarking on a major data-sharing project. Supporting further studies of this nature would help overcome these challenges and build capability to leverage commercial data..

COMMERCIAL DATASET

It took five years to finalise the commercial data agreement between UNSW Sydney and Uber. Over this period, the project team discussed data-sharing with several food delivery operators in addition to Uber, including Deliveroo, DoorDash and MilkRun before its acquisition by Woolworths. While these discussions were entered into in good faith, a data agreement did not eventuate.

We caution policymakers to be careful of people claiming to have access to commercial data.

- **Improving pre-agreement data engagement**

  Signing a data agreement does not guarantee open access to the requested data. A key learning from the project was that a discussion between the research and data teams early on could clarify the availability of data and its uses before a data-sharing agreement is already in place at a later stage. Since commercial data often includes proprietary elements, using a trusted partner to handle and translate data for government integration is crucial.

- **Geospatial expertise**

  When working with commercial datasets, which are frequently structured using proprietary code that is not readily interpretable, it is essential to engage a data expert with a deep understanding of both geospatial analysis and multiple programming languages. This expert should be capable of bridging the gap between a research team and the commercial data provider(s), acting as a translator to ensure accurate data integration and interpretation.

APPROPRIATE USE OF DATA

When digital data is shared under a commercial-in-confidence agreement, the data is likely to be sensitive, proprietary and shared under strict confidentiality between the named parties. However, while such agreements provide legal protection, they do not eliminate all risks. Other risks to consider are described below.

- **Digital data security**

  Even with the protection of an agreement, once provided, digital data is easily copied and moved. It is critical that digital data is stored in secure locations and encrypted when sharing among approved individuals. During this study, all data was stored in the secure password protected UNSW server and accessible only to the study team. This also protected the data from potential risks associated with outsourcing the data and risking exposure to a third party that is not covered by the original agreement.

- **Privacy and ethical concerns**

  An expected limitation for any commercial dataset is privacy. For commercial delivery data, this includes consumer privacy. Home addresses were not included in the dataset. This is understandable, as Uber customers did not consent to have their data shared; however, this limited the usefulness of the data in understanding the extent of delivery rider trips.

  The UNSW Sydney Human Research Ethics Committee (HREC) addressed ethics concerns linked to this study. It would be prudent for future studies to ensure a similar HREC oversight.

- **Unintended consequences**

  The project sought to understand how commercial cyclists navigate the City of Sydney. It is important to be cognisant of how the data analysed is presented and to avoid unintended consequences. For example, a map of all the locations where cyclists breach the road rules by riding in a prohibited location (e.g., footpath, tram line) provides valuable insights into gaps in the network and where greater investment in cycling infrastructure can support more people cycling. However, it also inadvertently creates a map that could be used to enforce the road rules and penalise cyclists who are seeking a safe route through an unsafe road network.

Policymaker perspectives

Experts from state and local government, as well as Uber, contributed to the project through a survey and an interactive workshop (see Annex A for a full list of participants).

Pre-workshop survey
Before the workshop, government experts completed a survey that identified shared views and key interests in:

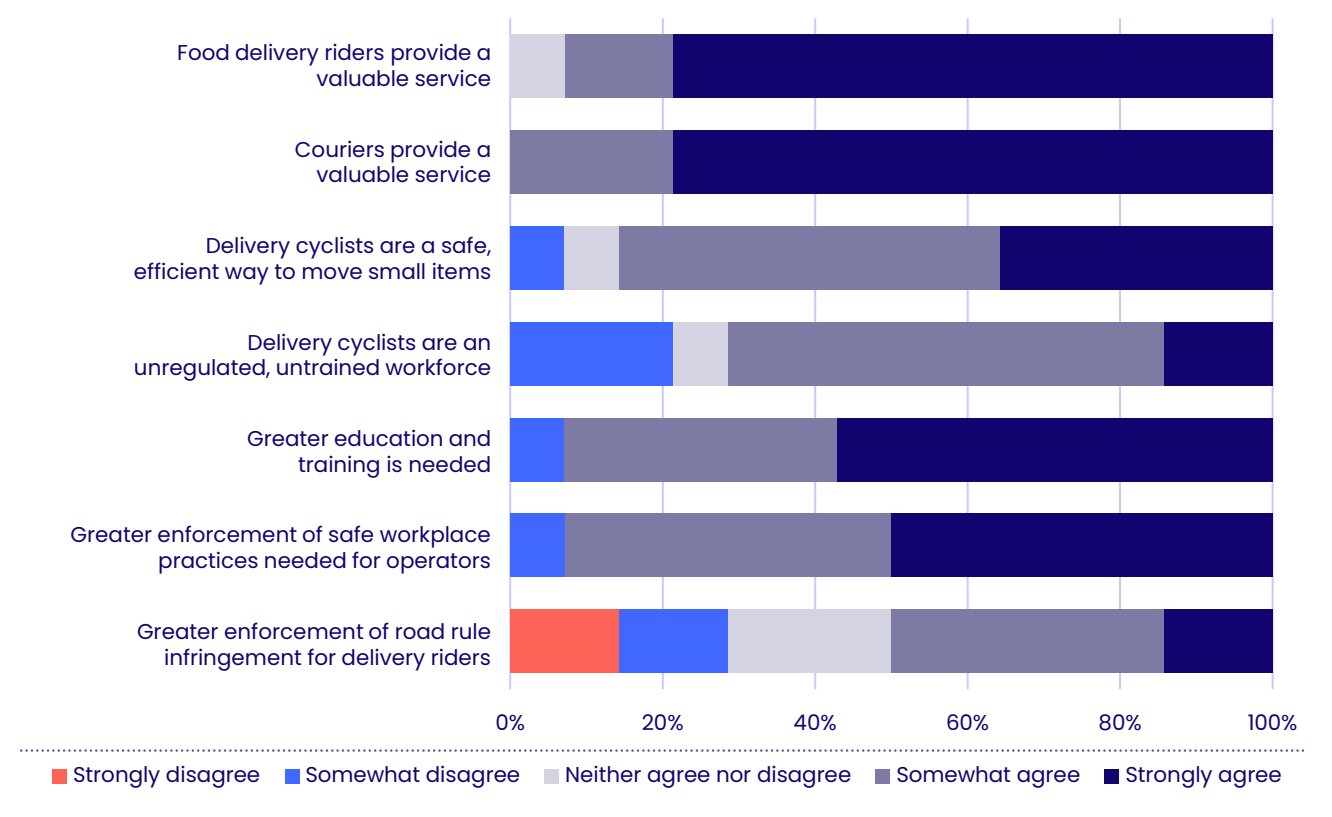
- creating a supportive environment for all riders;
- boosting cycling participation;
- improving real and perceived cycling safety;
- strengthening evidence-based decision-making; and
- enhancing planning to improve connectivity and infrastructure.

The experts consulted identified the need for more staff, time, budget, and data, highlighting data and budgets as most critical to achieving these goals.

Experts noted that there is limited collaboration across government , but optimism was expressed about the potential for better collaboration in the future. Most experts agreed that Sydney could see a rise in cycling mode share.

There were mixed views on commercial cycling, though there was broad agreement on its value. Concerns focused on safety, regulation and enforcement, which shaped the workshop design.

Figure 11 | Policymaker views on commercial cycling



Source: Pre-workshop survey, March 2025

Interactive workshop

A four-hour interactive workshop delivered important insights. Fourteen participants took part in the workshop, including representatives from state and local government as well as Uber. Table 2 provides an overview of the organisations and roles of participants. In addition to their formal roles, several participants also expressed an interest in health promotion and behavioural change, with the goal of increasing cycling participation, promoting healthy lifestyles, and enhancing public engagement.

Table 2 | Overview of workshop participants

ORGANISATION	ROLE/FOCUS	KEY INTERESTS
Transport for NSW – Policy Team	Policy development and strategy	Data to inform transport policy and micromobility integration
Transport for NSW – Data & Safety Teams	Data analytics, road safety, crash data management	Crash data, serious injuries, understanding gaps in safety data
City of Sydney – Cycling Strategy Team	Local cycling infrastructure and support	Strategy implementation, crash analysis, barriers to cycling
City of Sydney – Urban Design & Planning	Place planning and public precincts	Linking cycling with place activation and mobility
Department of Planning	Movement & Place framework, urban planning	Using cycling data for integrated land use and transport decisions
Smart Places/ Innovation Team	Tech and innovation in transport and place	Predictive models, smart data trials, infrastructure impact tracking
Uber	Operations and safety	Tactical, real-world applications of cycling data

Figure 12 | Workshop participants identifying locations of interest in the City of Sydney

Four key themes emerged from the workshop discussions and activities

1 | Safety in the delivery of small items
There is a growing focus on finding ways to move small items, such as food and parcels, safely and efficiently through urban areas. While these services are beneficial for convenience and traffic reduction, concerns were raised about the safety implications, especially for pedestrians and the riders themselves. Participants highlighted that the increase in light, fast-moving vehicles (i.e., bicycles and scooters) on shared roads and footpaths introduces new risks, underscoring the need for better infrastructure and operational practices to ensure everyone's safety.

> We're finding loads of riders that are already **quite vulnerable and doing a really hard job.**
>
> - Workshop participant

2 | The vulnerability of delivery riders
Participants noted that while there are legitimate safety concerns, the riders themselves are often not the root cause of the problem – they are working in a difficult environment. There was a clear reluctance to support punitive measures, such as fines or heavy-handed enforcement, that would disproportionate economic affect on riders. Instead, the focus should be on systemic solutions that improve conditions for riders, improve driver compliance and enhance public safety.

> We don't want to punish them. **They're just doing their job.**
>
> - Workshop participant

3 | Lack of regulation and enforcement challenges
One of the central issues raised was the lack of clear or consistent regulation of the road environment. This can contribute to unsafe practices, such as riders using pedestrian paths to avoid dangerous motor vehicle traffic. However, participants cautioned against enforcement approaches that involved over-policing or criminalising riders. This points to the need for clearer guidelines and collaborative policy approaches.

4 | Community concern
Participants reported that local communities have raised concerns about the impact of delivery services on road and pedestrian safety. This dynamic highlights the importance of developing proactive, balanced responses that consider the needs and safety of all stakeholders, including riders, pedestrians and residents.

> The community are the ones who come to us and say, **'You need to do something about this. This is unsafe.'**
>
> - Workshop participant

A policy agenda for NSW

This policy agenda outlines a series of integrated, evidence-based recommendations designed to inform infrastructure planning, legislative reform, and policy development. With the *Roads Act 1993 (NSW)* currently under review, this is an opportune moment to embed structural changes that will improve safety for cyclists and all road users.

1 Establish robust data-sharing pathways between government and industry

To build a nuanced understanding of cycling for all trip types, the NSW Government could facilitate regular, secure sharing of anonymised trip data from commercial delivery platforms. This data provides insights into cyclist routes, infrastructure use, and areas where hazards or detours occur.

Currently, there is no formal mechanism in place that mandates or encourages this type of data-sharing, resulting in a significant gap in real-time, evidence-based planning. A structured policy framework, potentially integrated into the *Roads Act,* could support privacy-respecting data exchange. Industry consultation during this policy development will be critical to ensuring the framework is both practical and effective. By working with industry and rider groups, governments all levels will be able to advance transparency and mutual benefit, laying the foundation for proactive planning and targeted investment.

2 Identify and prioritise locations for infrastructure investment using existing and new data

Delivery cyclist GPS data, when combined with crash statistics, survey results, and community feedback, can help identify areas of high risk or avoidance due to safety concerns. For many riders, their motivation for riding on footpaths often stemmed from infrastructure gaps or danger zones.

Governments in NSW could collaboratively build a dynamic mapping system that integrates data from industry, government, and community stakeholders. This system could be informed by ongoing consultations with riders and delivery companies, ensuring that data interpretation accurately represents real-world conditions. Investment could then be directed to underserved routes and high-risk locations, with regular engagement mechanisms to validate priorities with users (e.g., surveys, advisory panels).

3 Pilot data-driven safety and infrastructure programs

Before scaling new policies or infrastructure statewide, governments could run pilot programs informed by data and stakeholder input. These could include temporarily separated bike lanes, reduced speed zones, designated delivery hubs, or targeted education initiatives.

Ideally, pilot programs are co-designed with industry and community partners, with clear evaluation frameworks and mechanisms for feedback. This approach will help to ensure pilots are data-driven and grounded in lived experience. Successful pilots could be adapted and expanded, building community support and ensuring long-term policy success.

4 Prioritise separated cycling infrastructure over shared paths

Delivery cyclists overwhelmingly preferred separated infrastructure, citing shared paths as confusing and unsafe. Footpath use typically indicates that on-road conditions are too hazardous.

Infrastructure planning could prioritise physically separated bike lanes, particularly on busy arterial roads. Where space is not available for full separation, alternative safety measures are needed, with reduced posted speed limits prominently as the highest priority. Consultation with rider groups, local councils, and community stakeholders will help to ensure that plans and design decisions address lived experience and practical use. Including delivery riders in planning processes will also improve buy-in and policy legitimacy.

5 Make infrastructure intuitive and self-enforcing

Painted lanes are often insufficient and regularly encroached upon by motor vehicles. Physical elements that intuitively guide behaviour and remove ambiguity (e.g., kerbs, bollards, barriers) are critical to safe infrastructure.

Governments could work with local councils, designers, and rider representatives to co-design self-enforcing infrastructure. Iterative approaches will enable stakeholder feedback to be incorporated into design improvements. Such collaboration will also support cultural change, helping to counter "motornormativity" by shifting public expectations around road use.

6 Simplify road rules for safe interactions among all road users

While this study focused on commercial cyclists, its findings show that the current legal landscape is fragmented and unclear for all cyclists and other road users. Confusion around the legality of footpath use, on-road priority, and appropriate riding zones are all likely to contribute to unsafe practices and public tensions.

Clear, accessible road rules would help establish what is permitted for safe cycling and target behaviour of all road users. Changes would need to address real-world challenges and practical enforcement needs. Accompanying education campaigns are needed to aid public understanding.

Due to the disproportionate potential to harm, the emphasis must be on driver behaviour to reduce the dangers to cyclists, pedestrians and all road users.

7 Invest in infrastructure that supports safe delivery zones

Urban delivery has grown significantly, but supporting infrastructure lags behind. Riders lack dedicated spaces for loading, waiting, and resting, which may contribute to unsafe practices on footpaths or road shoulders.

Investment in well-designed delivery zones in high-demand areas is necessary. This includes supportive features like secure parking and well-lit, sheltered rest areas. There is a significant opportunity for planning to engage with delivery platforms and local rider groups to ensure investments align with operational realities. Community and industry co-design can ensure the infrastructure is both functional and embraced.

8 Support non-punitive safety measures

Many delivery cyclists face economic pressures and may be disproportionately affected by fines or punitive enforcement. Often, riders breach rules because the road environment is unsafe.

A more effective strategy could focus on systemic improvements and support. There is an opportunity for governments to partner with platforms and community organisations to deliver safety training, multilingual resources, high-quality gear, and fair working conditions within the built environment (e.g., safe rest places).

Stakeholder collaboration is essential to designing interventions that are trusted, culturally appropriate, practical and useful.

Conclusion

The growth of on-demand delivery services has transformed urban mobility, introducing new challenges and significant opportunities for transport policy.

To respond effectively, a holistic and integrated approach to cyclist safety and infrastructure is needed. The review of the *Roads Act 1993 (NSW)* presents a timely opportunity to capitalise on the opportunities identified in this paper and position the NSW as a national leader in sustainable and data-driven urban transport.

By collaborating with industry partners to maximise the insights from commercial datasets, the NSW government can generate deeper insights into cyclist behaviour, infrastructure gaps, and safety risks, particularly data from commercial and service-related cycling that are currently underutilised. Prioritising data- sharing, safety, and inclusive governance will enable a smarter, more adaptive transport system and help create a safer, more equitable road environment for all users.

Annex A | Experts consulted

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