CRIT

CYCLIST REPORTING OF INCIDENTS TOOL

Australian National Incident Dataset for Cyclist Incidents

Reporting data from:
December 2021 to June 2022

USC

Centre for Human Factors and Sociotechnical Systems

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The Cyclist Reporting of Incidents Tool (CRIT) provides cyclists with a simple and quick way of reporting crashes and near misses that they experience while cycling, including important information regarding the incidents themselves (e.g., time and location, incident description) and the contributory factors involved.

With users all over Australia, this information is analysed and used to identify trends in incidents and incident causation and inform the development of strategies designed to enhance cyclist safety. CRIT also presents a summary of the incidents reported to its users, allowing cyclists to understand the hazards they face when cycling as well as trends in crash and near miss causation.

The CRIT app is currently being trialled as part of a 12-month study. This report presents the aggregated findings from the first 6 months of the trial and includes an analysis of the crashes and near misses reported between December 2021 and June 2022.

CRIT is funded through the Road Safety Innovation Fund, a scheme from the Australian Government, which supports road safety research and the development of new, innovative road safety technologies and products. CRIT was developed by the Centre for Human Factors and Sociotechnical Systems at the University of the Sunshine Coast in collaboration with Bizsoft Consulting.

CRIT is free to download from the App Store and Google Play. All information provided is confidential.

CYCLIST REPORTING OF INCIDENTS TOOL

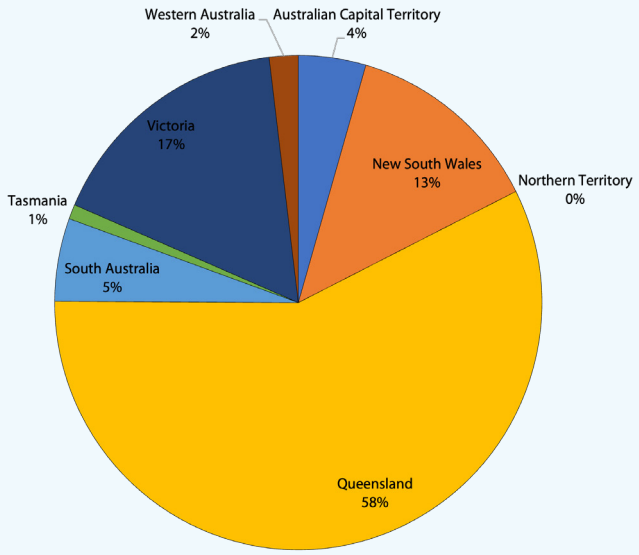
Reporting data from:
12 December 2021 to 12 June 2022

Users

316 **Cyclists**

248 **Males**

63 **Females**



Summary Data

109
Incidents reported

1,136
Hours cycled

96
Incidents per 1,000 hours cycled

17
Crashes reported

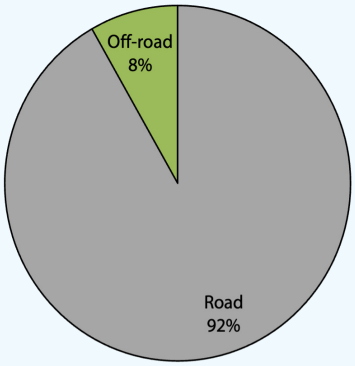
15
Crashes per 1,000 hours cycled

92
Near misses reported

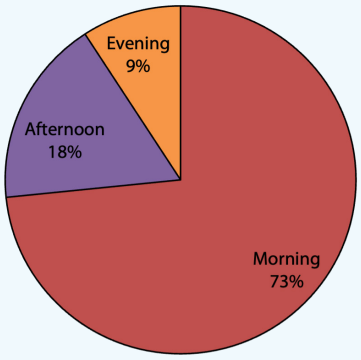
81
Near misses per 1,000 hours cycled

Incident Data

Cycling Activity



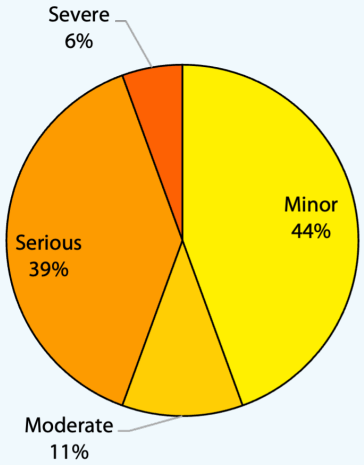
Time of Day



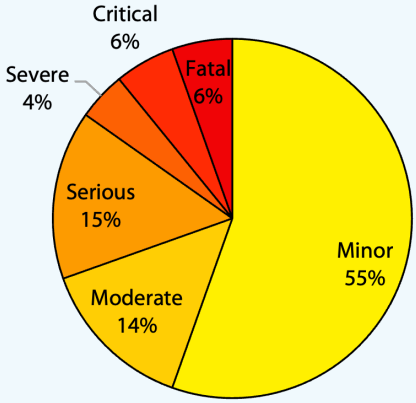
Severity Rating

For crashes, the reported severity reflects users' perceived *actual* severity of the crash. For near missses, the reported severity reflects users' perceived *potential* severity of a crash in the event that the crash occurs.

Crashes



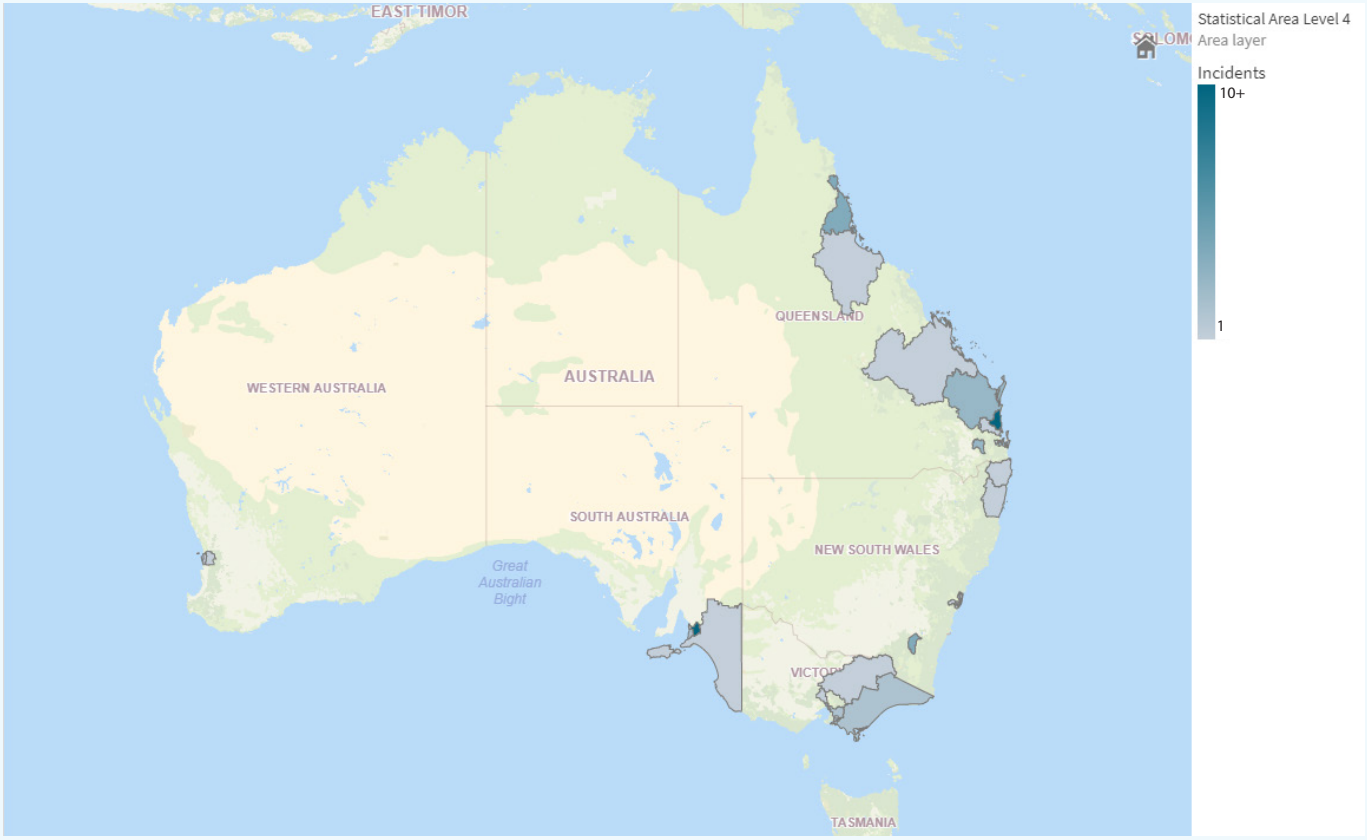
Near misses



Minor: Requires localised care with short-term effects.
Moderate: Requires ongoing care (localised or external) with short- to medium-term effects.
Serious: Requires timely external care (hospital or general practitioner) with medium- to long-term effects.
Severe: Requires urgent emergency assistance with long-term effects.
Critical: Requires urgent emergency assistance with serious ongoing long-term effects.
Fatal: Fatality.

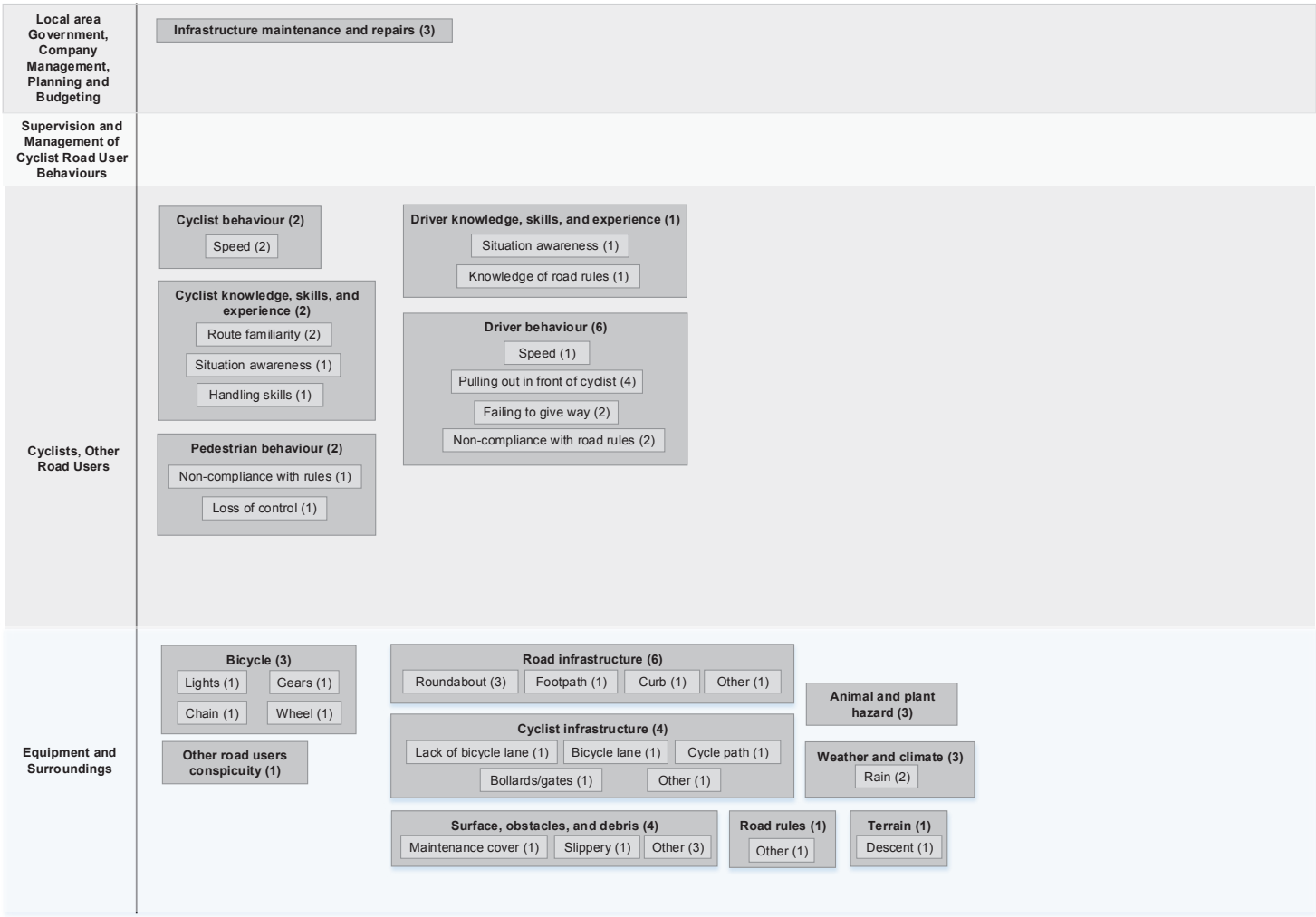
Incident Data

Location

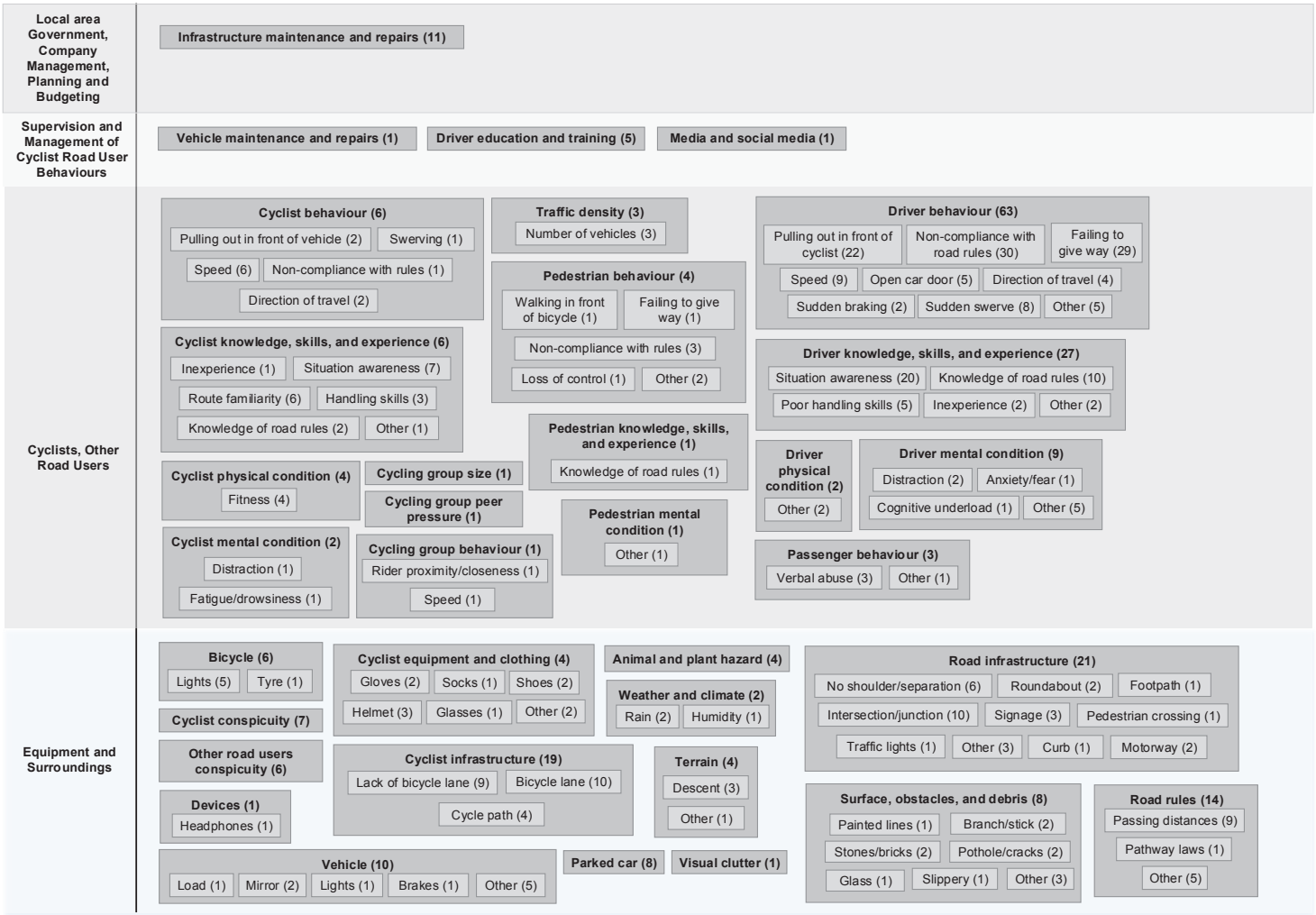


The map presents the frequency of incidents by location (location is defined by Statistical Area Level 4). The lighter shaded areas on the map represent lower frequency of incidents and the darker shaded areas on the map represent higher frequency of incidents.

Contributory Factors: Crashes



Contributory Factors: Near misses



Summary

This report presents an overview of the first six months of data reported through the CRIT app. The findings provide insight into the frequency and nature of cyclist crashes and near misses in the current user group, as well as pointing to areas where the CRIT app could be refined.

The overall incident rate was 96 incidents per 1,000 hours cycled, with a crash rate of 15 crashes per 1,000 hours cycled and a near miss incident rate of 81 near misses per 1,000 hours cycled. This supports the notion that the collection of near miss incident data as well as crash data is critical for understanding and enhancing cycling safety.

The majority of incidents reported occurred on the road (92%) and in the morning (73%). For the *reported crashes*, almost half were perceived to be minor (44%), 11% moderate, 39% serious and 6% severe. For the *reported near misses*, 55% were perceived to be potentially minor, 14% moderate, 15% serious, 4% severe, 6% critical, and 6% fatal.

For the *reported crashes*, the most frequently identified contributory factors were within the categories:

- 'Driver behaviour' (6), 'Road infrastructure' (6), 'Cyclist infrastructure' (4), and 'Surface, obstacles, and debris' (4).

Within these categories, the most frequently reported contributory factors included:

- 'Driver behaviour: Pulling out in front of cyclist' (4) and 'Road infrastructure: Roundabout' (3).

For the *reported near misses*, the most frequently identified contributory factors were within the categories:

- 'Driver behaviour' (63), 'Driver knowledge, skills, and experience' (27), 'Road infrastructure' (21), 'Cyclist infrastructure' (19), and 'Road rules' (14).

Within these categories, the most frequently reported contributory factors included:

- 'Driver behaviour: Non-compliance with road rules' (30), 'Driver behaviour: Pulling out in front of cyclist' (22), 'Driver knowledge, skills, and experience: situation awareness' (20), 'Road infrastructure: Intersection/junction' (10), 'Cyclist infrastructure: Bicycle lane' (10), 'Cyclist infrastructure: Lack of bicycle lane' (9), and 'Road rules: Passing distances' (9).

These findings demonstrate that cyclists most often reported factors relating to driver behaviour, road infrastructure, cyclist infrastructure, and the road rules as having contributed to their crashes and near misses. Notably, the data included contributory factors beyond the driver, cyclist, and immediate road environment, such as contributory factors relating to 'Infrastructure maintenance and repairs' and 'Driver education and training'. This provides an initial indication that, in certain incidents, cyclists believe that factors from the broader road transport system are contributing to cycling incidents. This aligns with recent road safety research emphasising the need to look beyond road users and their environment when attempting to understand and prevent crashes (e.g. Salmon et al., 2019; 2022).

Overall, the findings from this six-month analysis indicate that the CRIT app is gathering useful data on cyclist crashes and near misses that can be used to enhance cyclist safety. As the dataset becomes larger and more detailed, we can expect to identify trends that will be valuable for developing interventions and policy recommendations.

Salmon, P. M., Read, G. J. M., Beanland, V., Thompson, J., Filtness, A., Hulme, A., McClure, R., Johnston, I. (2019). Bad behaviour or societal failure? Perceptions of the factors contributing to drivers' engagement in the fatal five driving behaviours. *Applied Ergonomics, 74,* 162-171. https://doi.org/10.1016/j.apergo.2018.08.008

Salmon, P. M., Naughton, M., Hulme, A., & McLean, S. (2022). Bicycle crash contributory factors: A systematic review. Safety Science, 145, 105511. https://doi.org/10.1016/j.ssci.2021.105511

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Australian Government

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