Submission to the inquiry into the impact of road safety behaviour on vulnerable road users

Merri-bek City Council

May 2023

This submission has specifically investigated the characteristics of fatality and serious injury crashes Merri-bek during and after the COVID-19 pandemic and matters reported by Councillors to identify behaviours of concern that increase risk for vulnerable road users.

Executive Summary

Merri-bek City Council welcomes the Victoria Parliamentary Inquiry into changes in road user behaviour impacting safety of vulnerable road users. Merri-bek, located in Melbourne's Inner North, has been identified by Victoria Police as one of four Council areas targeted in Operation Halo – as announced on 18 May 2023 to run for several months – targeting behaviours that impact on vulnerable road users, in light of high numbers of lives of vulnerable road user lost as Merri-bek emerges from the Covid-19 pandemic.

Aware of the five fatalities of vulnerable road users that occurred within Merri-bek in 2022, and a further tragic life lost in March 2023, Merri-bek City Council on 12 April 2023 that it:

> *Authorises the CEO or delegate to make a submission to the State Parliamentary "Inquiry into the impact of road safety behaviours on vulnerable road users" that highlights road safety behaviours affecting vulnerable road users in Merri-bek, consistent with relevant resolutions of Council.*

Responding to community angst arising from this recent spate of fatal crashes, Council officers organised a review of all recorded fatal and serious injury (FSI) crashes involving vulnerable road users (VRU) in the municipality. From the search, it was found that there were 123 recorded FSI crashes between 2020 and 2022. Of these, 118 crashes resulted in serious injuries and 5 were fatalities. All 5 fatalities for the three-year period all occurred in 2022, heightening the levels of concern about safety of vulnerable road users in the Merri-bek community.

A sample of the police reports were reviewed to identify existing safety concerns for vulnerable road users. Of the 80 police reports reviewed, 29 crashes involved pedestrians, 28 crashes involved motorcyclist and 23 crashes involved cyclists.

In addition to the crash review, Council petitions and resolutions for the period 2020-2023 regarding the safety of vulnerable road users were reviewed to establish community concerns about behaviours affecting vulnerable road users.

Of the 123 FSI crashes, 47 (38%) occurred on Merri-bek City Council managed roads and 76 (62%) occurred on Department of Transport and Planning (DTP) managed roads. These crashes included 34 (28%) pedestrians, 47 (38%) motorcyclists and 42 (34%) cyclists. While FSI crashes involving pedestrians on DTP roads were 79% of all pedestrian FSI crashes, 48% of cyclist FSI crashes were on local roads.

It is surprising that motorcyclists have the highest number of recorded crashes given the percentage of all trips to, from and within Merri-bek via motorcycle is only 0.5%. This is compared to walking which accounts for 20.9% of all trips and cycling which accounts for 3.9% of all trips[1]. Effectively a motorcyclist making a trip is more than 8 times more likely than a cyclist making a trip to be involved in an FSI. And a person walking is 6 times less likely than a cyclist to be involved in an FSI.

[1] Statistics taken from Google's *Environmental Insights Explorer from the 2021 year. More information of Google's Environmental Insights Explorer can be found* here.

Almost 25% (that is, 30 crashes) of the VRU FSIs occurred on Sydney Road. DTP have implemented a number of low impact "Pedestrian and bicycle" safety projects on Sydney Road in the last decade with little impact on crash reduction. It is vital that pedestrian safety is prioritised in this area as it provides access to many.

For pedestrian crashes, police reports showed 15 of the 29 pedestrian FSI crashes occurred at signalised intersections. Note that this is a sample of the 34 total recorded pedestrian crashes. Police specifically stated in 4 reports that vehicles had "failed to give way" to the pedestrians crossing. In 10 reports, the Police stated the pedestrian crossing light was green when the FSI crash occurred. In these crashes, the vehicle did not have a green arrow to separate vehicle and pedestrian movements temporarily in time.

For motorcyclist crashes, motorcycle losing control on the carriageway/road (DCA code 174) accounted for 6 (13%) motorcyclist FSIs. Intersection crashes where a motorcyclist is impacted by a vehicle approaching from the opposite direction and turning against the motorcyclist's path (DCA code 110) accounted for 5 (11%) motorcycle FSIs.

For cyclist crashes, vehicles opening their door into the path of a cyclist (DCA code 163) accounted for 7 (17%) cyclist FSIs. Cyclist crash patterns showed similarities with those of motorcyclists. Specifically, intersection crashes where a vehicle approaching from the opposite direction turns against the cyclist's path (DCA code 110) accounted for 7 (17%) of the cyclist FSI crashes.

Prominent crash types for both motorcyclists and cyclists include vehicles from opposing directions and manoeuvring, suggesting these vulnerable road users are not being seen by vehicles on the road.

Road safety concerns regarding vulnerable road users, especially people walking and riding bikes, have also been raised by Merri-bek Councillors in recent times. Council resolutions from 2020 to the present time include the following concerns and needs:

- The need for improved safety conditions on and around the bridge over Merri Creek on Bell Street and the Bell Street and Elizabeth Street intersection, Coburg with the goal to support walking and bike riding for students of Coburg High School. Advocates have enlisted council support to get DTP to make changes – but only low level physical changes have been implemented.
- Concern regarding safety conditions around the 'Nicholson Street Bends' (Nicholson St from Stewart Street to Lygon Street – Albion Street intersection) with goal to support walking and bike riding for students of Brunswick East Primary School and property owners who have experienced 'motor vehicle loss of control run off road' property damage crashes.
- Concern regarding safety for pedestrians crossing Melville Road at Victoria Street, Hope Street, Albion Street and Moreland Road intersections, especially through interactions with right and left turning vehicles.
- Changed road environments creating new risk for vulnerable road users such as removal of the Munro Street level crossing (reducing crossing opportunities in the 'shadow' of the boom gates) and changed travel patterns to access the new Glenroy Community Hub on Wheatsheaf Road.
- Long lengths of arterial roads act as barriers for very old and school aged walkers and require long detours to safely cross at intersection POS – Advocates for walkers seek to install additional mid-block POS to reduce walking route lengths (Elizabeth Street and Murray Roads, Coburg, Boundary Road, Pascoe Vale / Hadfield, Moreland Road, Pascoe Vale South and Sydney Road at Plaisted Street, Coburg North).
- Concern regarding fatal and serious injury crashes involving pedestrians in Sydney Road, predominately at intersections north of Bell Street (Gaffney Street, Bakers Road and Boundary Road).

Council recommendations

Merri-bek City Council recommends that several systemic approaches could be taken to addressing the risks revealed through the analysis of data and by listening to community concerns. Merri-bek City Council recommends that:

1. The State Government establish a dedicated annual budget for pedestrian safety improvement projects and programs. The majority (79%) of the recorded 34 pedestrian crashes in Merri-bek occurred on DTP managed roads. The IP43: Safe System Pedestrian Infrastructure Program offers some funding for isolated pedestrian projects but does not provide a reliable revenue stream for annual programs to address pedestrian safety.

2. The State Government review the criteria for reduced speed limits in activity centres to allow neighbourhood centres to have localised 40 km/h speed limits beyond the existing prescriptive warrants.
3. In light of the relatively high numbers of bicycle crashes on local roads, that the State partners with Council on progressing further a trial of 30 km/h speed limits to add to the body of knowledge available to inform future updates of the Speed Zoning Guidelines, which are currently silent on the application of 30 km/h zones.
4. The State Government implement a red drop out arrow at all filtered turn signalised intersections with flashing Give Way to Pedestrians signs to prioritise pedestrian safety. When drivers undertake a filtered turn at signalised intersections, this creates a conflict with pedestrians who are crossing the road on the pedestrian green phase. From the crash review, there were 10 recorded crashes where pedestrians were struck during the green phase. The inclusion of a red drop out arrow and signage during the filtered turn phase can provide pedestrians with a head start to safely cross the road in the green pedestrian phase and reduce the risk of being struck by a vehicle turning at the same time. We recommend that the red drop out arrow treatment be rolled out systematically across the signalised intersection network to provide pedestrians with safer crossing opportunities. Signalised intersections on tram routes and within activity centres should be prioritised for this treatment.
5. The State Government allocate funding for the roll out of improved standards for slip lanes and application of zebra crossings on them at intersections of arterial roads. The standard for slip lanes was improved some time ago to ensure that the slip lane angle is 70 degrees to slow vehicle turning speeds. Whilst this was a positive change, there has been no funding available to systematically implement the upgraded design. The intersections of Boundary Road and Sydney Road, Fawkner and Nicholson Street and Bell Street, Coburg would benefit from funding to upgrade slip lanes, introduce zebra crossings and possibly raised zebra crossings to improve the safety of pedestrians.
6. The State Government partners with Merri-bek City Council to further investigate the over-representation of motorcycle riders in crash statistics. A high proportion of recorded crashes in Merri-bek involved motorbike riders. Causal factors are not clear, with relatively even distribution over days of the week and crash types and mostly daylight hours represented.
7. The State Government analyse red light camera data from across inner Melbourne to determine whether the overall trend is for increased red light running, as anecdotally reported by many. One option would then be for the State to ask the community to nominate ‘frequent red light running sites’ and ‘near miss sites’ for pedestrians, so that consideration could be given to extending the red light camera network to include regularly nominated intersections and pedestrian operated signals and allow prioritisation of site upgrades based on the information obtained.

Introduction

The Legislative Assembly Economy and Infrastructure Committee is investigating the impact of road safety behaviours on vulnerable road users with a specific focus on the impact of the COVID-19 pandemic. Submissions to the inquiry are open until 19 May 2023. The Committee plans to hold public hearings later this year and will report to Parliament in March 2024.

On 12 April 2023, Merri-bek City Council resolved that it:

> *Authorises the CEO or delegate to make a submission to the State Parliamentary "Inquiry into the impact of road safety behaviours on vulnerable road users" that highlights road safety behaviours affecting vulnerable road users in Merri-bek, consistent with relevant resolutions of Council.*

Following this, Council officers have engaged a specialist road safety consultancy to undertake a review of all recorded fatal and serious injury (FSI) crashes involving vulnerable road users (VRU) in the municipality. To focus on the deviations of crash histories in the past three years during and directly after the COVID-19 pandemic, the three-year period of January 2020 to December 2022 was used.

The Department of Transport and Planning (DTP) managed Road Crash Information System (RCIS) database was used to source the recorded crashes in the municipality. From the search, it was found that there were 123 recorded FSI crashes between 2020 and 2022. Of these, 118 crashes resulted in serious injuries and 5 were fatalities. All 5 fatalities for the three-year period all occurred in 2022, heightening the levels of concern about safety of vulnerable road users in the Merri-bek community. Council is also aware of one further pedestrian fatality in March 2023.

A random sample of police reports (with personal information redacted) from the 123 crashes were reviewed by the road safety consultants to identify existing safety concerns for vulnerable road users. Of the 80 police reports reviewed, 29 crashes involved pedestrians, 28 crashes involved motorcyclist and 23 crashes involved cyclists.

In addition to the RCIS crash review, Council petitions and resolutions for the period 2020-2023 regarding the safety of vulnerable road users were reviewed to establish community concerns about behaviours affecting vulnerable road users.

For this submission, vulnerable road users include people walking and riding bikes, scooters and motorcycles.

Limitations

On 24 April 2023, a search of the RCIS database for all crashes within Moreland (now Merri-bek) involving pedestrians, cyclists and motorcyclists was undertaken for the period of January 2020 to December 2022. There is a lag of approximately six months between a non-fatal crash occurring and the upload of that information to the RCIS database. The list of recorded crashes from 2022 is understood to be missing three months' worth of serious injury data (October to December 2022).

Council officers have also relied on recorded crashes for this submission as anecdotal crash reviews can be less reliable.

This submission generally only scrutinises recorded crashes within the Merri-bek City Council municipal boundary.

Vulnerable road user crashes from the past decade

Table 1 below shows ten years' worth of FSI of vulnerable road users in Merri-bek.

Year	VRU fatal crashes	VRU serious injury crashes	Total VRU FSI crashes
2013	2	72	74
2014	3	75	78
2015	3	67	70
2016	4	87	91
2017	0	78	78
2018	2	85	87
2019	2	84	86
Average for pre-pandemic years	*2*	*78*	*81*
2020	0	44	44
2021	0	56	56
2022	5	14*	19*
2023 – year to date	1	Not available	Fatal – 1, SI – Not available

* this figure is for 9 months of data given lag in reporting of serious injury crashes

Table 1 Recorded vulnerable road user crashes form the past decade in Merri-bek

There was a significant decrease in FSI crashes in 2020 when compared to previous years. This is likely attributed to the lockdown measures imposed to control the outbreak of COVID-19 and the subsequent reduction in the movement of people and goods. From available data, this trend for total crashes involving FSI continued into 2021 and 2022.

Notably, the five fatalities (from five separate crashes) in 2022 is a clear outlier and is very concerning.

Key findings

Of the 123 FSI crashes, 47 (38%) occurred on Merri-bek City Council managed roads and 76 (62%) occurred on Department of Transport and Planning (DTP) managed roads. It is difficult to conclude whether the year-on-year variation in the number of FSI crashes on DTP and Merri-bek City Council managed roads represents a trend of any sort.

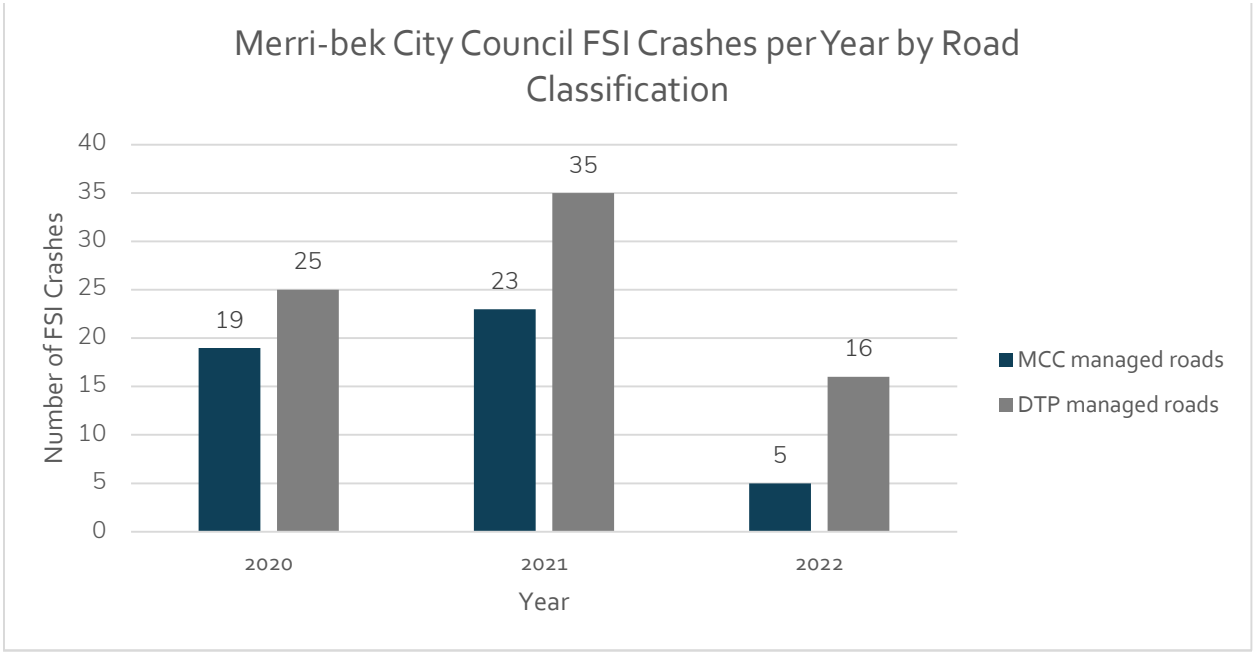

Figure 1: Merri-bek City Council FSI Crashes per Year by Road Classification

Figure 2 below shows the FSI Crashes by Road User and road management. In line with the total FSI crashes, across all three VRU types, the majority of crashes are occurring on DTP managed roads. Of the 123 FSI crashes that occurred, 34 (28%) pedestrians, 47 (38%) were motorcyclists and 42 (34%) cyclists.

Of note, FSI for pedestrians was much more likely to be on DTP managed roads than on Council-managed roads. It is also noteworthy that these crashes are predominately related to crossing the road between footpaths while crashes for cyclists and motorcyclists mostly occur where those vehicles are sharing the road with other vehicles. This is considered to be an important finding and should inform strategies to address pedestrian safety and elevate the State's role in designing safe system solutions for these roads.

In contrast with pedestrians, cyclist FSI crashes were almost even between DTP managed and Council managed roads. This suggests that cyclists are opting to use the lower speed, lower trafficked local roads and are being involved in crashes on them. It would be interesting to understand what level of exposure to motorised vehicles exists between these two road environment types.

Reference is also made to Figures 12 and 13 included in the appendix, which show in map form the three different road user types across the two different road managers.

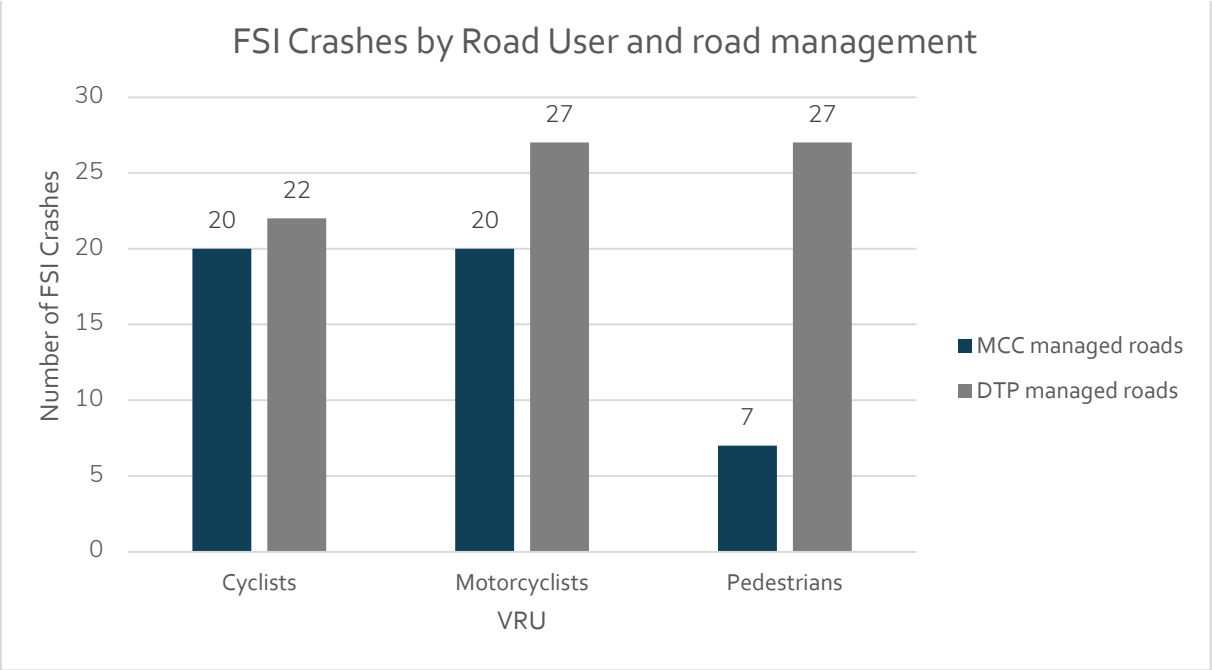

Figure 2: Merri-bek City Council FSI Crashes by Road Classification

As shown in the Figure 3 below, males are overrepresented in the FSI crashes. The fluctuation in year-on-year FSI crashes across the three years also applied to the gender split. It is noted that gender data relating to road safety does not include self-described genders. Notably, all five fatalities in 2022 were males.

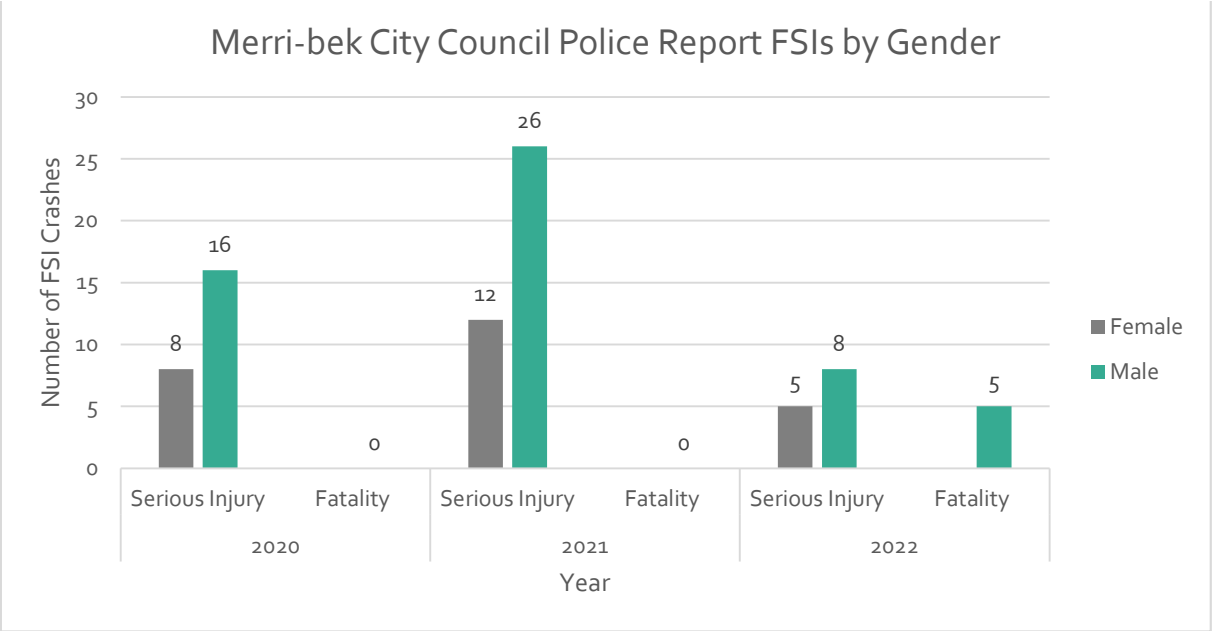

Figure 3: Merri-bek City Council FSI Crashes by Gender

See Figure 4 for the breakdown of FSI crashes by road user. It is surprising that motorcyclists have the highest number of recorded crashes given the percentage of all trips to, from and within Merri-bek via motorcycle is only 0.5%. This is compared to walking which accounts for 20.9% of all trips and cycling which accounts for 3.9% of all trips as taken from *Google's Environmental Insights Explorer from the 2021 year*. More information of Google's Environmental Insights Explorer can be found here.

Effectively a motorcyclist making a trip is more than 8 times more likely than a cyclist making a trip to be involved in an FSI. And a person walking is 6 times less likely than a cyclist to be involved in an FSI.

The high number of motorcyclist FSI crashes is not often raised, even anecdotally, with Merri-bek City Council. The crash numbers were compared against neighbouring Councils and found to be an outlier among similar nearby Councils (see next section). It is also noted that the fatal crash for a motorcyclist in Figure 4 was in fact a person riding an overpowered e-scooter.

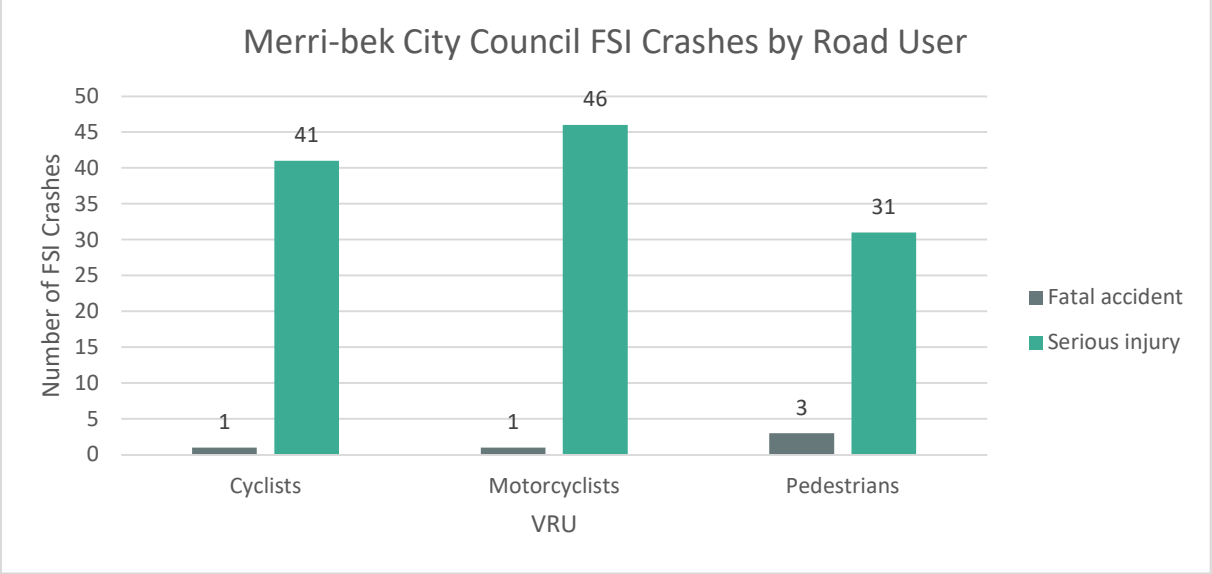

Figure 4: Merri-bek City Council FSI Crashes by Road User

Almost 25% (that is, 30 crashes) of the VRU FSIs occurred on Sydney Road in 2020-2022, see Figure 5. Of the 30 FSI crashes, 20 of these crashes occurred at intersections. In Brunswick and Coburg, Sydney Road has many functions. It provides a continuous key Activity Centre, tram route 19 and is an arterial road. DTP have

implemented a number of low impact "Pedestrian and bicycle" safety projects on Sydney Road in the last decade, however this has not had a discernible impact on crash reduction. It is vital that pedestrian safety is prioritised in this area as it provides access to many services and retail opportunities.

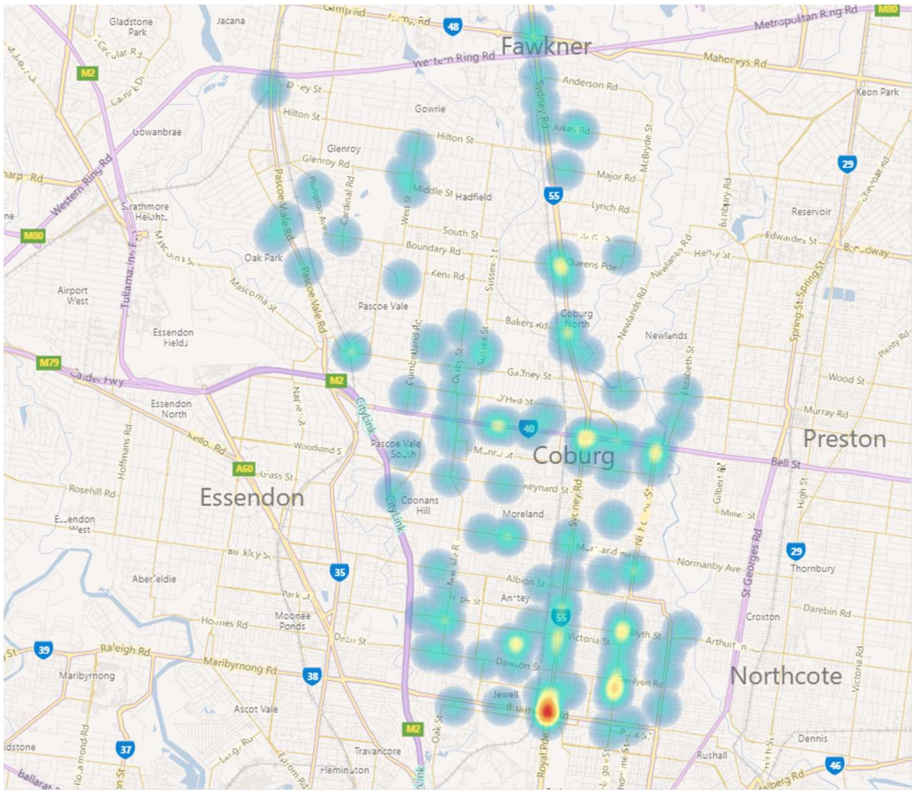

Figure 5: Heat map of Merri-bek City Council FSI Crashes

Bell Street was also a crash hot spot, with 13 (11%) of the 123 FSI crashes occurring along this road.

For pedestrian crashes, police reports showed 15 of the 29 pedestrian FSI crashes occurred at signalised intersections. Note that this is a sample of the 34 total recorded pedestrian crashes. Police specifically stated in 4 reports that vehicles had “failed to give way” to the pedestrians crossing. In 10 reports, the Police stated the pedestrian crossing light was green when the FSI crash occurred. In these crashes, the vehicle did not have a green arrow to separate vehicle and pedestrian movements in time.

It was also noted that there were 8 recorded instances between 2020 and 2022 where a pedestrian suffered an FSI whilst crossing at a location that was not a designated crossing point.

For motorcyclist crashes, motorcycle losing control on the carriageway/road (DCA code 174) accounted for 6 (13%) motorcyclist FSIs. Intersection crashes where a motorcyclist is impacted by a vehicle approaching from the opposite direction and turning against the motorcyclist's path (DCA code 110) accounted for 5 (11%) motorcycle FSIs.

For cyclist crashes, vehicles opening their door into the path of a cyclist (DCA code 163) accounted for 7 (17%) cyclist FSIs. Cyclist crash patterns showed similarities with those of motorcyclists. Specifically, intersection crashes where a vehicle approaching from the opposite direction turns against the cyclist's path (DCA code 110) accounted for 7 (17%) of the cyclist FSI crashes.

Prominent crash types for both motorcyclists and cyclists include vehicles from opposing directions and manoeuvring, suggesting these vulnerable road users are not being seen by vehicles on the road.

Comparison of Merri-bek crash history to neighbouring municipalities

A search of the transport accident claims involving hospitalisations has been taken from the TAC website. The TAC claims involving hospitalisations for pedestrians, cyclists, motorcyclists, drivers and passengers for five “Inner-north” Councils is shown below. Note that the most recent data is from October 2022 as a six-month reporting lag is applied to the data, allowing for claims to be lodged and processed, and hospital invoices to be received and processed. See Figure 6 below.

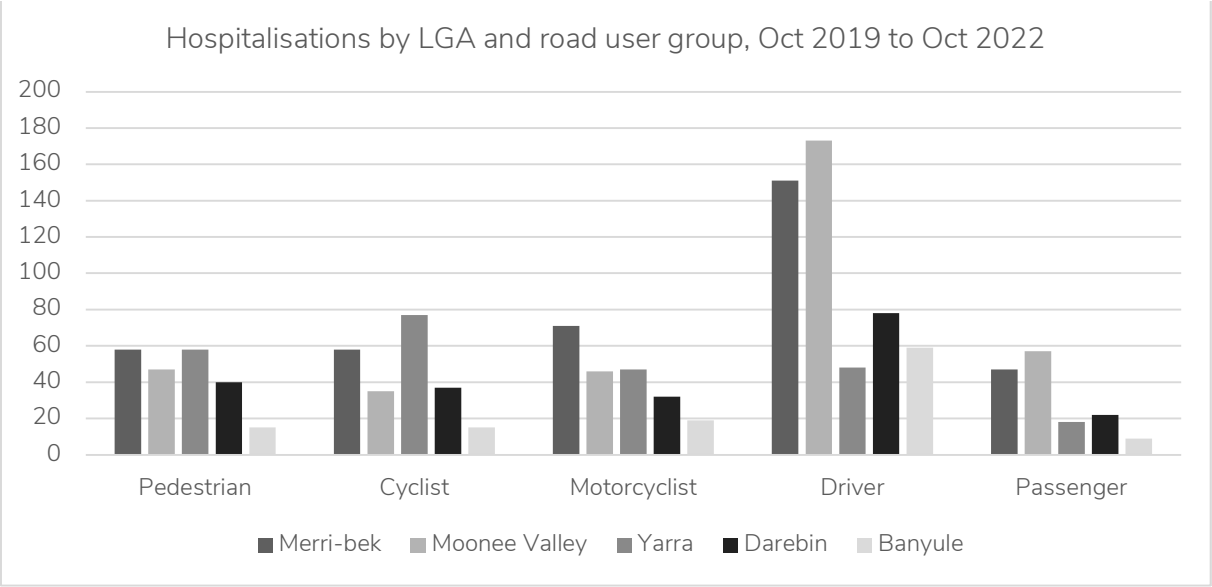

Figure 6 TAC claims involving hospitalisations per road user for the five "inner-north" Councils

The TAC claims have compared across the past three years to identify any trends in TAC claims during and post COVID-19 pandemic. Note that each Council has fluctuations in TAC claims but there is no definitive trend across the Inner-north Councils See Figure 7.

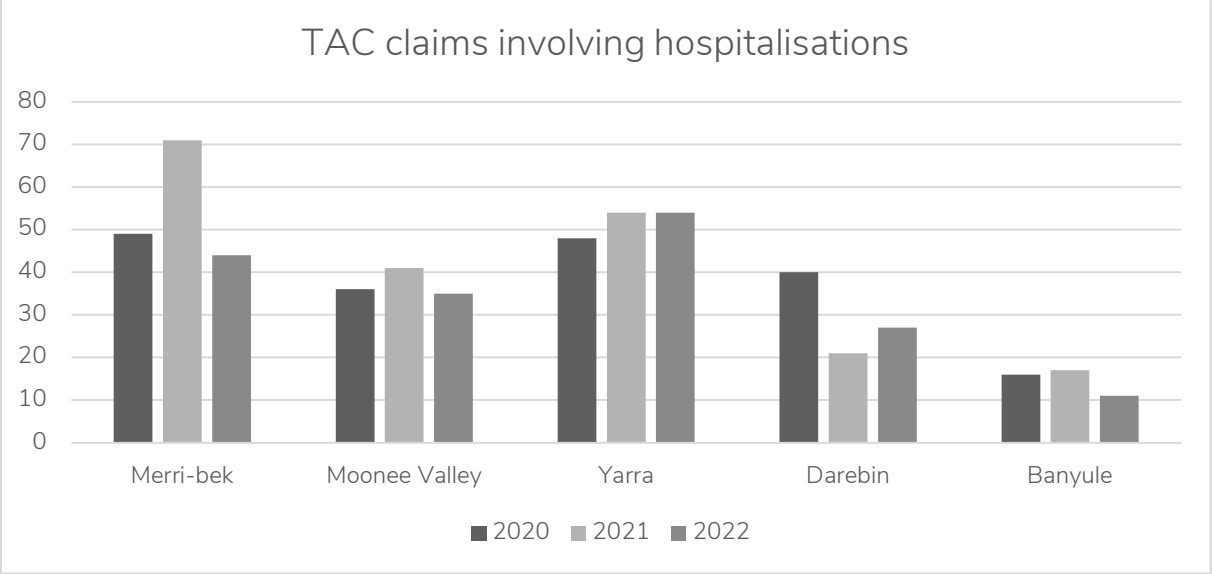

Figure 7 TAC Claims involving hospitalisations per year per Council

Council Resolutions

Councillors of Merri-bek have raised concerns via Notices of Motion at Council meetings on approximately 20 occasions since 2020 regarding safety of vulnerable road users, resulting in resolutions for advocacy and action to reduce safety risk. These Council reports have been reviewed to establish themes about behaviours affecting vulnerable road users.

Sites that are perceived as 'unsafe for vulnerable road users' and the behaviours that are of concern are:

- Intersections along Melville Road Brunswick East and Pascoe Vale South (Driver failure to give way to pedestrian at intersection)
- Intersection Pascoe Vale Road and Glenroy Road, and Pedestrian Operated Signals at 814 and 850 Pascoe Vale Road, Glenroy (Drivers running red lights)
- A cluster of sites near Bell Street, Coburg North including:
  - Intersection configuration difficult to navigate for people walking and riding at Bell Street and Nicholson Street (including access to terminus for tram route 1)

  - The narrow footpaths along Bell Street Merri Creek bridge
  - Intersection configuration makes walking and riding at Bell Street and Elizabeth Street challenging, especially the slip lane design on NW corner
  - Lack of controlled pedestrian crossing opportunities across Elizabeth Street between Bell Street and Murray Road
- Murray Road, Coburg North (Sydney Road Intersection, Newlands Road Intersection, Pedestrian Operated Signals at Coburg Olympic Swimming Pool, Elizabeth Street Intersection)
- Nicholson Street between Blyth Street and the intersection of Albion and Lygon Streets including the 'bends' that coincide with high walking and riding numbers to Brunswick East Primary School
- Sydney Road – Bakers Road, Coburg North (access to tram route 19 Coburg North Terminus) as well as the tram stop at Gaffney Street

All of these sites are on arterial roads managed by DTP, and Council has used regular catch ups with DTP and Victoria Police as well as more formal advocacy through letters to Ministers to raise these concerns.

Council also recognises that crashes on local roads also require review and there may be measures Council is able to take to improve safety on local roads. One significant measure that Merri-bek is taking is to introduce 40 km/h areas on all local streets that meet certain criteria, as already agreed in principle by DTP and now awaiting final exchange of authorisations to proceed to community engagement, education and progressive implementation of signage.

However, safety of cyclists on local roads is still of concern and Merri-bek City Council is seeking to partner with the State on trials of 30 km/h speed limits on local roads to add to the body of research that can contribute to a future review of the Speed Zoning Guidelines to provide guidance on the application of 30 km/h speed zones.

Recurring issues:

- The Merri-bek community has been advocating to improve safety conditions near Bell Street – Merri Creek Bridge with the goal to support walking and bike riding for students of Coburg High School (in particular those students living east of the school (who need to cross Elizabeth Street), south east of the school (who need to cross both Elizabeth Street and Bell Street), and south of the school (who cross Bell Steet bridge). Advocates have enlisted Council support to request DTP to make changes. To date, low level physical changes have been implemented in the form of line marking (dragon teeth markings to reduce speeds via perception of lane narrowing and SLOW DOWN warnings) along Bell Street between Nicholson Street and Elizabeth Street. New pedestrian warning signs have been installed on the approach to the Bell Street Bridge. Any evaluation of the effectiveness of these treatments in slowing Bell Street traffic has not yet been shared with Council.
- There's an ongoing campaign to improve safety conditions around the 'Nicholson Street Bends' (Nicholson St from Stewart Street to Lygon Street – Albion Street intersection) with goal to support walking and bike riding for students of Brunswick East Primary School (in particular those students living North and East of the school) and property owners who have experienced 'motor vehicle loss of control run off road' property damage crashes. This includes advocacy for a Pedestrian Operated Signal for crossing Nicholson Street at Stewart Street.
- Changed road environments – including removal of the Munro Street level crossing and opening of Glenroy Community Hub – will trigger a community desire to install additional infrastructure to address changes in road user behaviour patterns. Council has responded on the Munro Street issue with some measures to reduce speeds through Munro Street in Coburg. Council has been working with DTP on a suitable design for changed controls at the Wheatsheaf Road / Plumpton Road intersection in Glenroy.
- Long lengths of arterial roads act as barriers for very old and school aged walkers and require long detours to safely cross at intersection POS – Advocates for walkers seek to install additional mid-block POS to reduce walking route lengths (Elizabeth Street and Murray Roads, Coburg, Boundary Road, Pascoe Vale / Hadfield, Moreland Road, Pascoe Vale South).

Appendices

Analysis of RCIS Data and Police Reports

All vulnerable road users

A summary of vulnerable road users fatal and serious injury crashes from RCIS data is provided below:

- There have been 123 FSI crashes in Merri-bek City Council in the 3-year period. Of these, 118 were serious injuries and 5 were fatalities.
- Of the 123 FSI crashes, 7 (21%) pedestrian, 20 (43%) motorcyclist and 20 (48%) cyclist crashes occurred on Merri-bek City Council managed roads.
- The most prominent crash types are:
  - Pedestrian entering road on the near side (left lane) hit by vehicle from the right travelling in the left lane (DCA Code 100) were implicated in 15 (12%) FSI crashes.
  - Pedestrian entering road on the far side (right lane) hit by vehicle from the left travelling in the left lane (DCA Code 102) were implicated in 12 (10%) FSI crashes.
  - Intersection crashes where a motorcyclist/cyclist is impacted by a vehicle approaching from the opposite direction and turning against the motorcyclist/cyclist's path (DCA code 110) were implicated in 12 (10%) FSI crashes.
  - These three DCA codes accounted for 32% of FSI crashes. A breakdown of the DCA groups can be seen in Figure 10 and Figure 11.
- 42 (34%) of FSI crashes occurred between the hours of 3:00pm and 7:00pm and 29 (24%) occurred between 8:00am and 12:00pm.
- Of the 118 serious injury crashes, 31 (26%) involved pedestrians, 46 (39%) involved motorcyclists, and 41 (35%) involved cyclists.
- 80 (68%) of serious injuries occurred to males and 36 (30%) to females. It is noted that the gender of the remaining serious injuries (2%) were not identified in the crash data.
- The 20-29 age group had the highest proportion of serious injuries with 37 (31%) followed by 30-39 age group with 29 (25%).
- Serious injury crashes were higher during the COVID period. There were 44 serious injury crashes in 2020 and 58 in 2021. This contrasts with the 16 serious injury crashes that occurred in 2022.
- The 5 fatality crashes for the 3-year-period all occurred in 2022. The 5 fatalities included 3 pedestrians, 1 motorcyclist and 1 cyclist. All 5 of these fatalities were males.

Crashes involving pedestrians

- There were 34 (28%) FSI crashes that involved Pedestrians. Of these, 31 (91%) were serious injury crashes and 3 (9%) were fatal crashes.
- Of the 34 FSI crashes, 7 (21%) occurred on Merri-bek City Council managed roads and 27 (79%) occurred on arterial roads managed by DTP.
- The most prominent crash types for pedestrians are:
  - Pedestrian entering road on the near side (left lane) hit by vehicle from the right travelling in the left lane (DCA Code 100) were implicated in 15 (44%) FSI crashes.
  - Pedestrian entering road on the far side (right lane) hit by vehicle from the left travelling in the left lane (DCA Code 102) were implicated in 11 (32%) FSI crashes.
- The distribution of FSI across age groups is as follows: age group 20-29 had 6 (18%) FSIs and 30-39 had 6 (18%) FSIs. 15 (44%) pedestrian FSIs were aged 60-90, with the 3 fatalities aged 30, 85 and 92.
- Of the 34 pedestrian FSIs, 22 (65%) were female and 12 (35%) were male.

- 12 (34%) of the crashes occurred in a location without traffic control. 15 (43%) occurred where the traffic control was stop go lights, with only 3 of the intersections have a green arrow to temporarily separate vehicles and pedestrians in time.
- The Police Reports stated vehicles ran red lights immediately before or after impacting the pedestrian in 3 FSI crashes.
- For 8 of the Police Reports, the pedestrians sustained an FSI while crossing at a location that was not a designated crossing point.
- From the Police Reports 10 of the pedestrian FSIs occurred when a pedestrian was crossing at a signalised intersection with a green pedestrian crossing light.
- 3 FSIs occurred when a pedestrian was crossing with a red pedestrian crossing light.
- In 2 instances, the Police Reports state that the pedestrian was drug or alcohol affected.
- 2 pedestrians were struck by vehicles when disembarking trams.

Crashes involving motorcyclists

- There were 47 (38%) FSI crashes that involved motorcyclists. Of these, 46 (98%) were serious injury crashes and 1 (2%) was a fatal crash.
- 20 (42%) of the FSI crashes occurred on Merri-bek City Council managed roads and 27 (57%) occurred on DTP managed roads.
- The most prominent crash types for motorcyclists are:
  - Motorcycle losing control on the carriageway/road (DCA code 174) accounting for 6 (13%) FSI crashes.
  - Intersection crashes where a motorcyclist is impacted by a vehicle approaching from the opposite direction and turning against the motorcyclist's path (DCA code 110) accounting for 5 (11%) FSI crashes.
- DCA groups vehicles travelling from opposing directions impact a motorcyclist and vehicles travelling from adjacent directions impacting a motorcyclist at intersections accounted for 28 (60%) of motorcycle crashes.
- The highest number of motorcyclist FSIs was observed for age groups 20-29 with 23 (49%) and 30-39 with 11 (23%) FSIs. These two age groups accounted for 72% of the total motorcycle FSIs.
- Of the 47 motorcyclist FSIs, 42 (89%) FSIs were male and only 4 (9%) were female.
- 36 (76%) of the crashes occurred in a location without traffic control, either on a section of road or at an unsignalised and unsigned intersection. There were 3 (6%) crashes that occurred at roundabouts and 3 (6%) at signalised intersections.
- It was noted in the Police Reports that 2 crashes involved e-scooters. The person who was fatally or severely injured was classified as a motorcyclist FSI for one crash and as a pedestrian FSI for the second crash.
- 2 Police Reports mentioned road conditions as a contributing factor to the motorcyclist crashes. This includes loose gravel on Murray Road and a small pothole on Henkel Street.
- Police Reports stated there were 3 instances where a motorcyclist rear ended a vehicle, and 2 instances where a vehicle rear ended a motorcyclist.
- There were 7 crashes where a vehicle failed to give way to a motorcyclist. 3 occurred when the vehicle was making a right-hand turn and 3 where a vehicle failed to give way when driving straight across an intersection.
- The fatality classified as a motorcyclist was an individual riding an overpowered e-scooter, who lost control after riding over a speed hump. The incident occurred on Cornwall Road and the Police Report stated the 28-year-old male was not wearing any protective gear.

Crashes involving cyclists

- There were 42 (34%) FSI crashes involving cyclists. This includes 41 (98%) serious injury crashes and 1 (2%) fatal crash.
- 20 (48%) of motorcyclist FSI crashes occurred on Merri-bek City Council managed roads and 27 (57%) occurred on roads managed by DTP.
- The two most prominent crash types for cyclists are:
  - Intersection crashes where a cyclist is impacted by a vehicle approaching from the opposite direction and turning against the cyclist's path (DCA code 110) accounting for 7 (17%) FSI crashes.
  - Cyclist strikes door of parked/stationery vehicle or dooring (DCA code 163) accounting for 7 (17%) FSI crashes.
- DCA groups vehicles from adjacent directions impacting a cyclist at an intersection and manoeuvring accounted for 22 (52%) of cyclist crashes.
- Age groups 20-49 accounted for 30 (71%) cyclist FSIs. It was noted there were 4 FSIs that occurred to cyclists in the age group 0-19.
- Of the 42 cyclist FSIs, 31 (74%) FSIs were male and 10 (24%) were female.
- 33 (78%) crashes occurred in a location without traffic control, either on a section of road or at an unsignalised and unsigned intersection. There were 3 cyclist FSIs that occurred at roundabouts and 3 at signalised intersection traffic controls.
- Police Reports stated 3 cyclist serious injuries were a result of vehicles opening doors into the path of cyclists. There were 5 instances of vehicles striking cyclists when completing a right-hand turn, 2 of which occurred at signalised intersections.
  - The cyclist killed was struck when a heavy vehicle failed to give way whilst completing a RH turn. The heavy vehicle was turning right onto Melville Road at the intersection with Brearley Parade. The 43-year-old male bicyclist was riding North along Melville Road. The traffic control at this intersection is a give way sign.

Crash hotspots

- Of the 123 FSI crashes to VRUs, 30 (24%) occurred on Sydney Road. 20 (67%) of the 30 crashes on Sydney Road occurred at intersections or in immediate surrounds (within 10m). There were 3 crashes that occurred at the signalised intersection of Sydney Road and Bell Street. 6 (20%) of the 30 crashes on Sydney Road were pedestrians entering the road on the near side (left lane) being hit by vehicle from the right travelling in the left lane (DCA Code 100).
- 13 (10%) FSI crashes occurred on Bell Street. This includes the 3 at the signalised intersection with Sydney Road, and 2 at the signalised intersection with Nicholson Street
- 9 (7%) FSI crashes occurred along Lygon Street. 6 occurred at intersections, 3 of which were signalised.
- For pedestrians, 3 FSI crashes occurred at the intersection of Bell Street and Sydney Road. A total of 11 (32%) pedestrian crashes occurred along Sydney Road and 7 on Lygon Street. 5 of the 7 crashes on Lygon Street occurred between Blyth Street and Park Street (1.4km section of road).
- For motorcyclists, 5 crashes occurred on Bell Street, specifically between Nicholson Street and Shackell Street (2.4km section of road). 10 (21%) motorcyclist FSI crashes occurred on Sydney Road. 6 crashes occurred on Holmes Street, with 2 crashes occurring around the intersection of Holmes Street and Donald Street
- For cyclists, 11 (26%) crashes occurred on Sydney Road, with 6 crashes occurring between Park Street and Edward Street (480m section of road), 4 occurring between Albert Street and Stewart

Street (610m section of road). 4 cyclist crashes occurred on Lygon Street between Piera Street and Queen Street (980m section of road).

Additional Figures

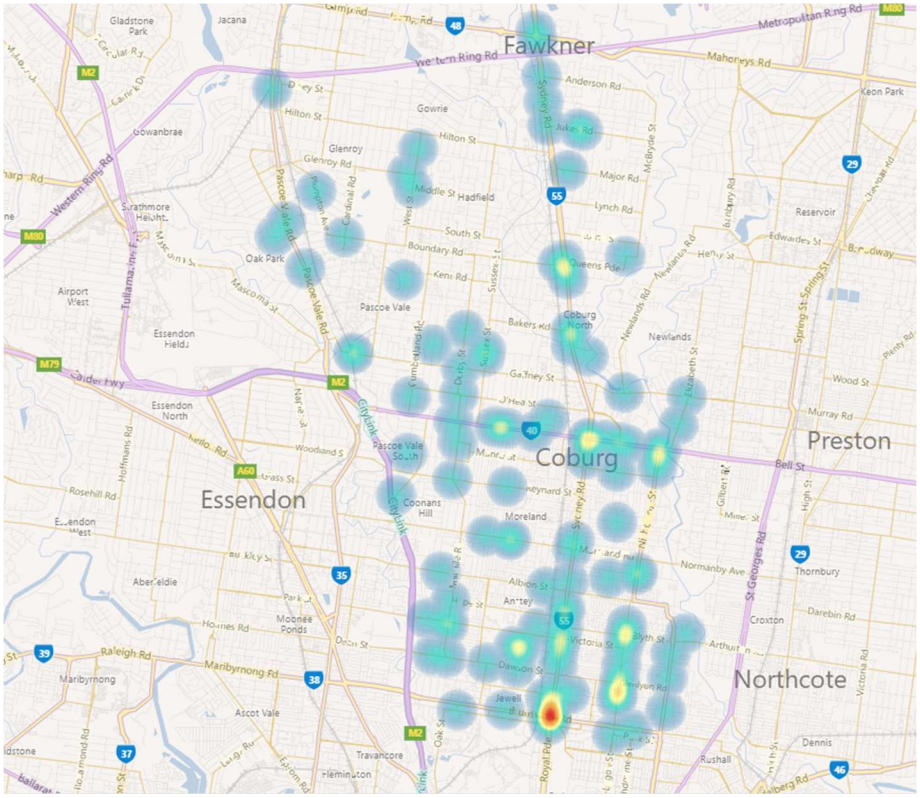

Figure 8: Heat map of Merri-bek City Council FSI Crashes

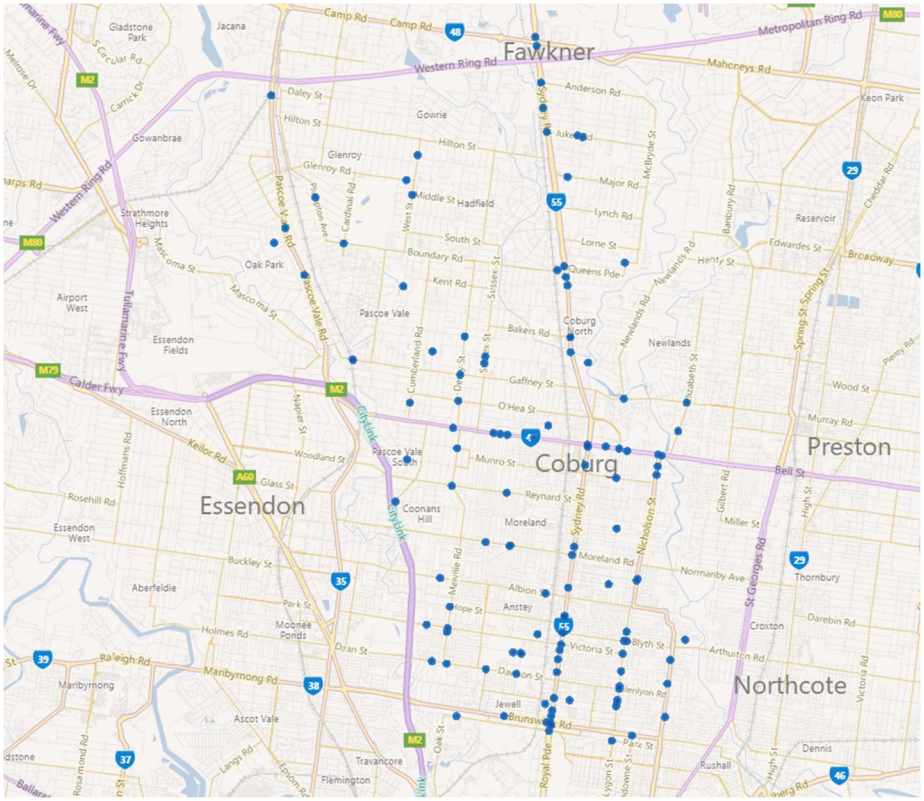

Figure 9: Locations of Merri-bek City Council FSI Crashes

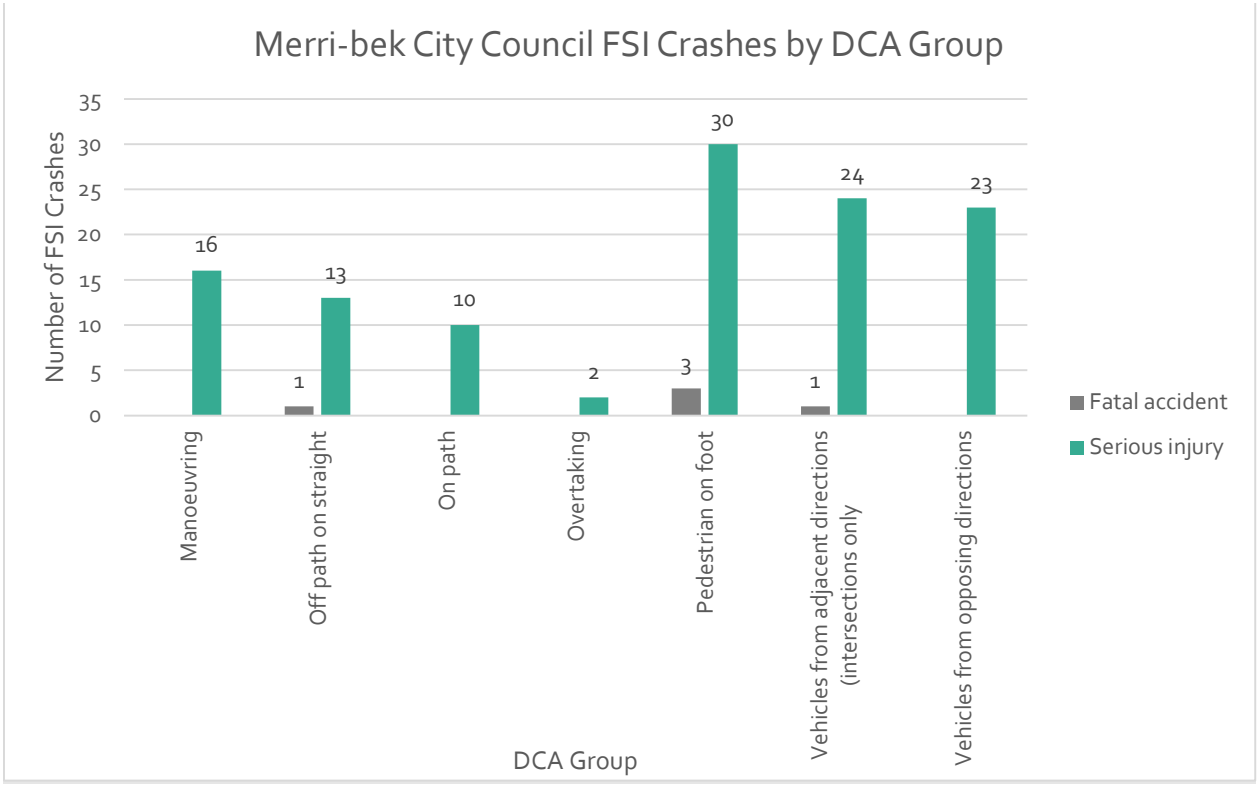

Figure 10: Merri-bek City Council FSI Crashes by DCA Group

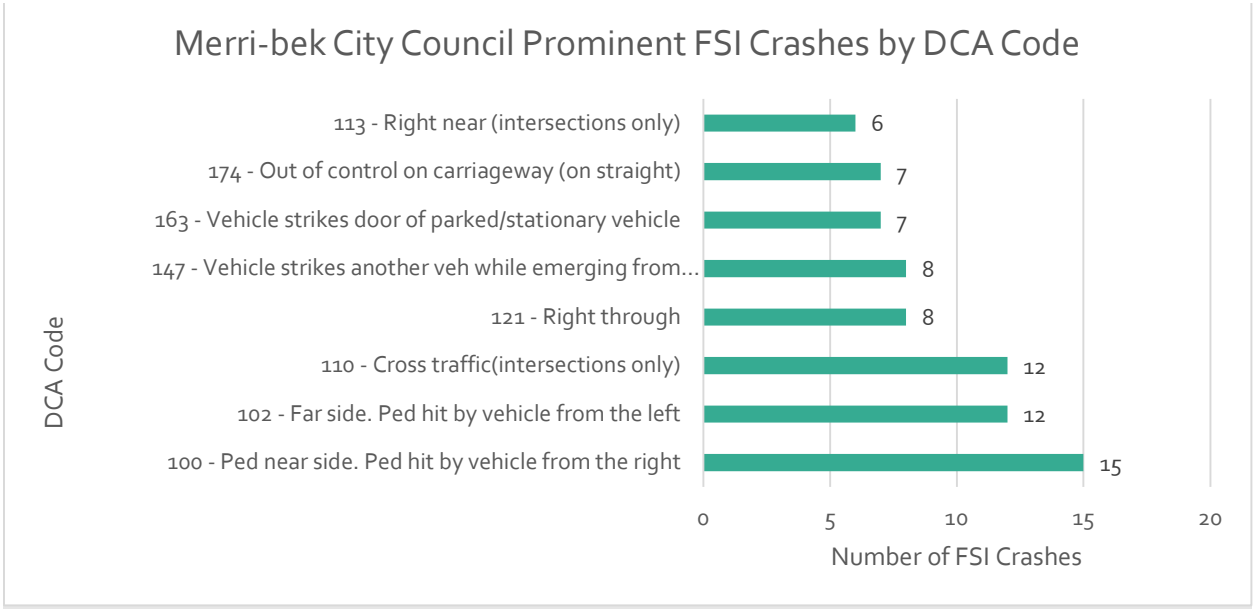

Figure 11: Merri-bek City Council FSI Crashes by DCA Code

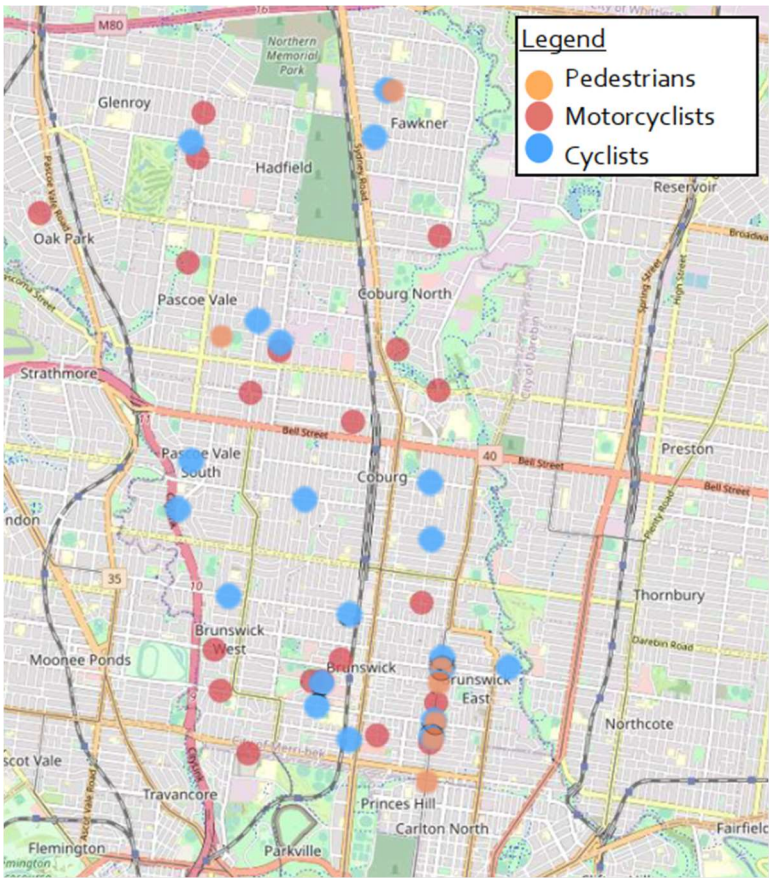

Figure 12: FSI Crashes on Roads Managed by Merri-bek City Council

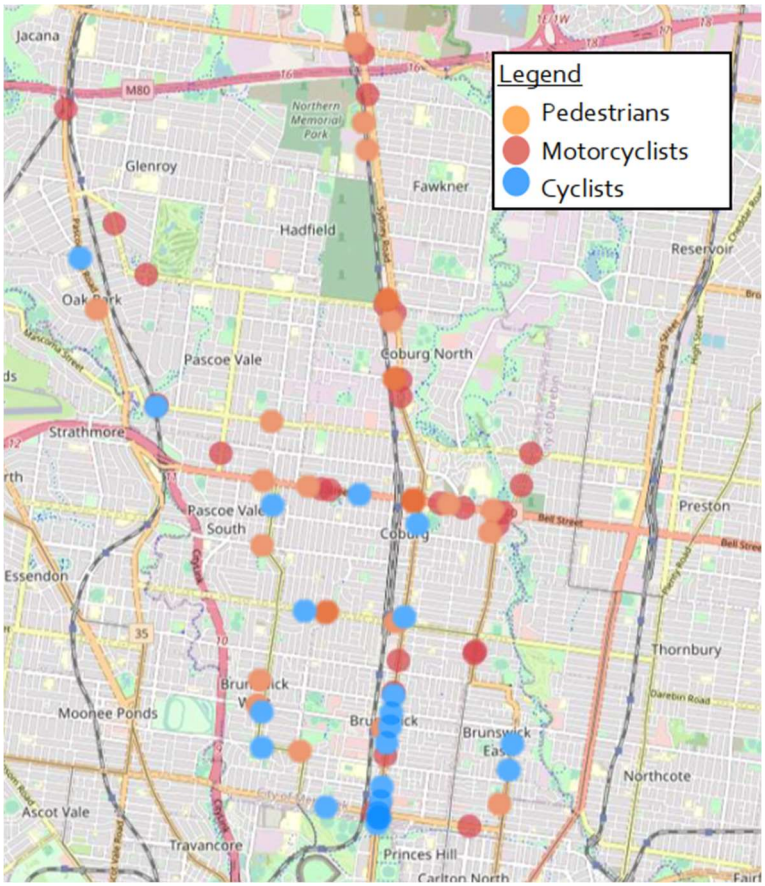

Figure 13: FSI Crashes on Roads Manage by DTP