SUMMARY REPORT

Safety Performance Indicators (SPI) Observation Study 2023

An observation study of light vehicle drivers, motorcyclists and bicyclists.

November 2023

NSW GOVERNMENT | Transport for NSW

Taverner RESEARCH GROUP

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1. EXECUTIVE SUMMARY

This document provides a summary of the findings from the 2023 Safety Performance Indicator (SPI) Observational Study conducted by Taverner Research for Transport for NSW (TfNSW) between the dates of 15 February and 1 April 2023.[1]

Project Outline

The 2023 SPI study was a follow-up to the baseline SPI research conducted in 2020[2].

The baseline research (2020) and this study in 2023 were conducted to measure compliance with several safety measures, these being:

- Seatbelt compliance amongst light vehicle drivers and passengers
- Mobile phone compliance amongst light vehicle drivers
- Helmet use amongst motorcycle riders and passengers
- Protective gear usage amongst motorcycle riders and passengers
- Helmet wear by bicycle riders

Observations were conducted at more than 40 different sites across metropolitan Sydney and inland and coastal regional NSW.

The results presented in this summary report are based on the following number of observations:

- Light vehicle drivers and passengers - 2023 n=10,984; 2020 n=9,455
- Motorcycle riders and passengers (pillion or side car) – 2023 n=3,013; 2020 n=2,714
- Bicyclists – 2023 n=3,016; 2020 n=2,901

All results presented in this report exclude any 'undetermined' situations from the calculation of the result (e.g. if an observer could not determine if a person was wearing a seatbelt or not this is excluded from the base when making the calculation).

Throughout this report we generally report on observations of compliance rather than non-compliance, where non-compliance is reported it is made clear.

Light Vehicles – Key Findings

Seat Belt Compliance

Seat belt compliance remained consistent in 2023 (99.2%) when compared with 2020 (99.3%) results.

While the proportion of light vehicle drivers and passengers observed wearing a seatbelt didn't change significantly between 2020 and 2023, the proportion observed not wearing a seat belt increased significantly (up to 0.3% in 2023, from 0.1% in 2020). This was primarily driven by a decrease in proportion of drivers and passengers observed wearing a seatbelt incorrectly.

As in 2020 observed seat belt compliance remained significantly higher among females (99.5%) than males (99.1%).

[1] The fieldwork period in 2023 was different to that in 2020 (October and November) and seasonality may have had an impact on overall results.

[2] Full report can be viewed here https://roadsafety.transport.nsw.gov.au/downloads/spi-observational-study.pdf and summary report available at https://roadsafety.transport.nsw.gov.au/downloads/spi-observational-study-summary.pdf

1. EXECUTIVE SUMMARY

Passengers (98.4%) were significantly less likely to be observed wearing seatbelts in 2023 than drivers (99.2% amongst driver only vehicles and 99.6% amongst drivers with passengers in their vehicle). Second row passengers were the least likely of any group to be observed wearing a seatbelt (95.4%).

In 2023 seat belt compliance was significantly higher in metro locations (99.5%) than regional locations (98.9%). This was not the case in 2020 with seat belt compliance significantly higher in regional areas (99.6%) than metro areas (99.1%).

Passengers or drivers in vehicles with provisional plates were significantly less likely to be observed wearing a seat belt correctly (97.9%) in 2023 compared to drivers and passengers in other vehicles (99.3%).

Mobile Phone Use - Compliance

Mobile phone compliance has declined amongst light vehicle drivers in 2023 when compared to 2020. Only 93.5% of drivers in light vehicles were observed not holding or not interacting with a mobile phone in 2023, down from 96.9% in 2020.

As in 2020, drivers moving slowly (99.2%) were more likely to be observed complying with mobile phone laws than drivers stopped at traffic lights or a stop sign (92.3%) in 2023.

There appears to be a negative social stigma of mobile phone use when driving a vehicle, with drivers without any passengers being less likely to be compliant with mobile phone laws (92.1%) than drivers with passengers in their vehicle (96.9%).

A major change from 2020 was that drivers observed in metro locations in 2023 were less likely to be compliant with mobile phone road rules (92.2%) than drivers from non-metro areas (95.2%). This wasn't the case in 2020 with the results quite similar across both location groups.

Consistent with 2020, the results in 2023 showed that drivers who were observed not complying with seatbelt laws were nearly three times more likely to be observed not complying with mobile phone laws (10.3% observed not complying with both seatbelt and mobile phone laws, compared to 3.9% observed complying with seatbelt laws, but not complying with mobile phone laws).

Motorcyclists – Key Findings

Motorcycle Helmets

As in 2020, nearly all motorcyclists (99.9%) were observed wearing a helmet in 2023.

Similar to 2020, significantly more riders and passengers were observed wearing dark coloured helmets (61.1%) than bright coloured helmets (37.6%) in 2023.

Other Protective Gear

Seasonality of fieldwork should be considered when reviewing protective gear wear rates. There were significantly more observation periods noted as being impacted by rain[3] (22.9% compared to 13.6% in 2023).

Around one out of ten (11.6%) motorcyclists were observed wearing full protective gear (i.e. helmet, upper body, lower body, feet and hands) in 2023, significantly less than in 2020 (13.6%).

[3] Impacted by rain includes mist or light rain present, previous rain or expected rain.

1. EXECUTIVE SUMMARY

The wear rates for protective upper body clothing (49.1% in 2023, 58.7% in 2020) and protective gloves (52.2% in 2023, 63.6% in 2020) decreased significantly in 2023 compared with 2020.

The wear rates of protective lower body clothing[4] (16.7% in 2023, 18.1% in 2020) and protective footwear (57.3% in 2023, 55.5% in 2020) didn't change significantly in 2023 when compared with the findings from 2020.

Those observed in regional areas were significantly more likely to wear protective upper body clothing, protective lower body clothing and protective footwear than those observed in metro areas, however there were no differences in the wear rate of protective gloves based on location.

Colour of Other Protective Gear

As with helmets, dark colours were preferred for the upper body (63.4% dark and 32.4% bright) and lower body (70.3% dark and 18.9% bright) in 2023.

Food Delivery Riders on Motorcycles

In 2023 food delivery riders on motorcycles were noted as a specific category for analysis.

Key highlights comparing this subgroup to other motorcycle riders and passengers were:

- Food delivery riders were significantly less likely to wear protective clothing on their upper body (30.8%) compared to other riders and passengers (50.2%).
- More than half (54.1%) of the food delivery riders were observed wearing high visibility or fluorescent upper body clothing, this was significantly higher than other motorcyclists (5.6%).
- There were no significant differences in the proportion of lower body protective wear amongst food delivery riders (16.9%) and other motorcyclists (16.7%), however, of the non-protective pants, long pants (not jeans) were significantly more likely to be observed on food delivery riders (34.3%) than on other motorcyclists (22.4%).
- Food delivery riders were significantly less likely to be observed wearing protective footwear (28.2%) compared to other motorcyclists (59.1%) as well as protective gloves (21.8% compared to 54.1%).

Bicyclists – Key Findings

Helmet Wear Rates

Bicycle helmet wear rates were significantly down in 2023 (89.5%) compared with 2020 (91.2%). This decline isn't due to the minor change in observation sites used in 2023, as the 2023 result is similar (89.2%) when sites observed in 2023 but not in 2020 are removed from the 2023 sample.

Bicycle helmet compliance was lowest amongst teenagers (11-17 years). This group was less likely to wear helmets (68.6% compared to 90.8% amongst others), and when they do, they're less likely to wear helmets correctly (see next section).

The helmet wear rate amongst those aged 10 years and under has declined sharply in 2023, down to 86.5% from 95.5% in 2020.

[4] Lower body clothing has been recalculated to exclude jeans and long pants and only include leather pants and other protective pants therefore 2020 result shown will differ to previous reported results.

1. EXECUTIVE SUMMARY

Helmet Positioning & Fastening

Amongst cyclists observed wearing a helmet, nearly all of those aged 10 and under (98.3%) or 18 and older (97.4%) were observed wearing their helmet correctly (i.e. not tilted backwards).

However, the 'teenage' age group (11-17 years) was significantly less likely to be observed wearing their helmet positioned correctly (91.5%).

There were no significant differences in the helmet fastening rate between 2020 and 2023, with around 99% of all cyclists observed to have their helmet fastened properly.

2. METHODOLOGY

2.1. GENERAL METHODOLOGY

The approach taken for the study was as follows:

- Development of an observation fieldwork schedule to cover agreed locations, which included metro (Sydney, Newcastle, Wollongong) and rural/regional areas (all other areas in NSW).
  - This included adding rural/remote sites in 2023 that were not included in 2020.
- The schedule aimed to achieve 6,000+ observations of light vehicle drivers/passengers, 3,000+ observations of motorcycle riders and passengers and 3,000+ observations of bicyclists.
- Suggested improvements from the 2020 research report were reviewed and adopted where appropriate for the 2023 study in consultation with the TfNSW project team.
- Taverner and TfNSW jointly developed a refined observation frame (observation form) for each vehicle mode.
- Observers underwent extensive training for each SPI measure including detailed information on how to determine each observation detail, photo examples of various options, how to record the information and practice examples.
- Two observers were assigned to each site and both observed each vehicle and determined key information. If the observers could not agree on an observation detail "cannot determine" was recorded although the vehicle or rider was recorded and included in the total sample but excluded from analysis.
- Light vehicle and motorcycle observations mostly occurred at signalised intersections to enable observers sufficient time to make and record an observation. However, in locations where none existed, stop sign and give way sign intersections were used.
- Observation fieldworkers entered the observation data into Android based tablets for real-time upload to a secure, Australian based server. The data collection software used enabled real time data transfer when a 4G mobile connection was available, otherwise data was stored on the device until a Wi-Fi or 4G connection was established.
- All observation fieldworkers were thoroughly trained in how to work safely, how to collect the specified data, how to manage the data securely, and how to upload data recorded on tablets if there is an interruption to the automatic synchronisation process.
- Supervision of observers during observation shifts occurred for quality assurance and monitoring.

2.2. CHANGES FROM 2020 TO 2023

The following changes were adopted for the 2023 study:

Light Vehicles

- New locations included for observation (Deniliquin, Bourke, Dubbo and Stanwell Park).

2. METHODOLOGY

- Rear seat (second row) passengers were observed in 2023 (excluding child seats). The passengers sub-group in light vehicle reporting includes front seat and rear seat passengers together for 2023 while in 2020 it included front seat passengers only.

Motorcycles

- New locations included for observation (Deniliquin, Bourke, Dubbo, Stanwell Park, Wollongong and Sydney CBD).
- Upper body clothing observation framework adjusted to capture vests covering clothing.
- New colour categories added to better capture reflective elements on clothing and helmets.
- Jeans and long pants separated in observations, with jeans removed from the calculation of protective clothing (protective jeans separated from jeans). This will have an impact on the comparative figure in 2020 for 'full protective gear wear rates.
- Fingerless gloves (protective and non-protective) added to the code frame for motorcycle gloves.
- Identification of food delivery riders as a sub-category was included. These riders were identified by the presence of food carrying backpacks or food delivery storage compartments.

Bicyclists

- New locations included for observation (Cliff Rd North Wollongong, cycle path east of O'Connell St Parramatta, Wagga Wagga, Peel River Tamworth, Kent St cycleway Sydney CBD, Bourke, Bathurst & Bomaderry).
- Non-bicycle vehicles/devices (e.g. foot powered or electric scooters) were observed as a separate category and are not included in the calculation of bicycle results.

2.3. GENERAL OBSERVATION LOCATIONS

Table 1 shows the general location within each region that observations were conducted at in 2023.

Table 1: **General Observation Locations by Region**

REGION	LIGHT VEHICLES & MOTORCYCLES	BICYCLES
Inner Sydney	Moore Park, Rozelle, Sydney CBD (motorcycles only)	Moore Park, Millers Point, Rozelle, Sydney CBD
Northern Sydney	Lane Cove West, Mosman, Berowra	Manly, Berowra, North Ryde
Southern Sydney	Kirrawee, Brighton Le Sands	Ramsgate, Sutherland
Western Sydney	Blacktown, Penrith	Parramatta, Glenwood, Penrith
Outer Metro	Albion Park, Wallsend, Stanwell Park, Wollongong (motorcycles only)	Wickham, North Wollongong
Coastal NSW	Coffs Harbour, Nowra	Jervis Bay, Coffs Harbour, Nowra, Bomaderry
Inland NSW	Wagga Wagga, Bathurst, Tamworth, Dubbo	Wagga Wagga, Bathurst, Tamworth
Rural NSW	Bourke, Deniliquin	Bourke

2. METHODOLOGY

2.4. SURVEY SAMPLE 2023

The total number of observations conducted by mode are summarised in Table 2. The detailed sample for each specific site by mode are detailed in Table 3 and Table 4 in Appendix 1.

Table 2: **Sample by Mode 2023**

MODE	SAMPLE OBSERVED
Light vehicles	10,984
Motorcycles	3,013
Bicycles	3,016
TOTAL	**17,013**

3. NOTES ON HOW TO READ THIS REPORT

Excluding 'Undetermined' Cases

Where a situation was 'undetermined' this has been excluded from the base when calculating results. This will be reflected in the base n for each chart or table.

The Effect of Rounding

Note that where two or more responses have been combined the sum of the combination may be different (+/- 1%) to the sum of the individual items due to rounding.

Statistical Differences

Differences between groups are described as significant differences if they reached statistical significance using an error rate of α=0.05. This means that if repeated independent random samples of similar size were obtained from a population in which there was no actual difference, less than 5% of the samples would show a difference as large or larger than the one obtained.

Given very large observation numbers, small changes in results from 2020 to 2023 will be statistically significant.

Statistical significance is more often compared from 2023 to 2020, however in some situations statistical significance is measured between response items within a wave (i.e. 2023). This is clearly noted in the commentary.

The use of the term 'significant' throughout this report indicates statistical significance. The report may also use the terms 'more likely' and 'less likely' to indicate statistically significant differences.

Sample Differences between 2020 and 2023

The following points highlight some of the sample differences between 2020 and 2023 that should be read in conjunction with changes in results.

Light Vehicles

- Weather was significantly less likely to be rainy/wet in 2023
- Significantly more females and less males observed in 2023
- Significantly more passengers and less drivers observed in 2023
- Distribution of license types was the same between 2020 and 2023
- Significantly more SUV type, large passenger and utes were observed in 2023 than in 2020
- Significantly less small passenger vehicles, people movers and vans observed in 2023

Motorcycles

- Weather was significantly less likely to be rainy/wet in 2023
- Significantly more observations of cruising style motorcycles in 2023 than in 2020
- Significantly less observations of touring style motorcycles in 2023 than in 2020

3. NOTES ON HOW TO READ THIS REPORT

Bicycles

- Weather was significantly less likely to be rainy/wet in 2023
- Scooter (electric and foot powered) plus other electric powered wheeled devices were observed in 2023, however these are reported separately
- Significantly more adults (89.5%) were observed in 2023 than in 2020 (85.7%), as well as significantly less 11-17 year olds (5.8% and 8.9% respectively).

4. MAIN FINDINGS

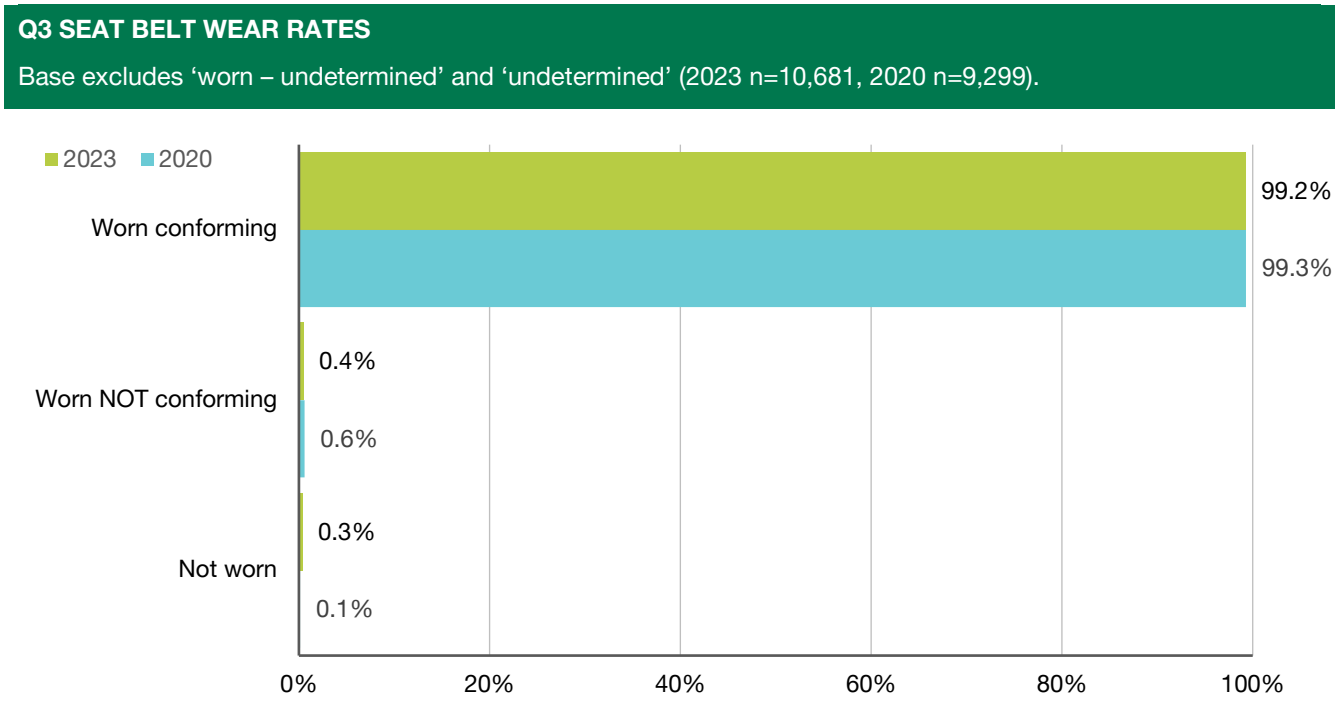
This section of the report shows charted and narrative commentary for a selection of key questions for each mode.

4.1. LIGHT VEHICLE SEAT BELT USE

As shown in Figure 1, nearly every person observed in a light vehicle during the project was observed wearing a seatbelt (99.2%). This result was in line with the result in 2020 (99.3%).

While only representing a small proportion of total drivers and passengers observed, there was a threefold increase in the proportion observed not wearing a seatbelt, this was a significant change from 0.1% in 2020 to 0.3% in 2023.

Figure 1: **Observed Seat Belt Compliance in NSW**



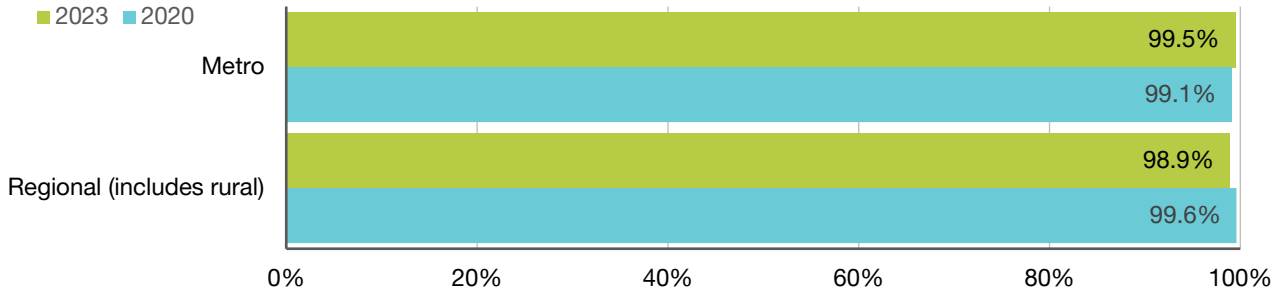
In 2023 seat belt compliance was significantly higher in metro locations than regional locations (see Figure 2). This was not the case in 2020 with seat belt compliance significantly higher in regional areas than metro areas.

4. MAIN FINDINGS

Figure 2: **Observed Seat Belt Compliance (Metro versus Regional/Rural)**

Q3 SEAT BELT WORN CORRECTLY

Base excludes 'worn – undetermined' and 'undetermined' (2023 n=10,681, 2020 n=9,299).
Chart shows the % who were observed as 'worn conforming'.

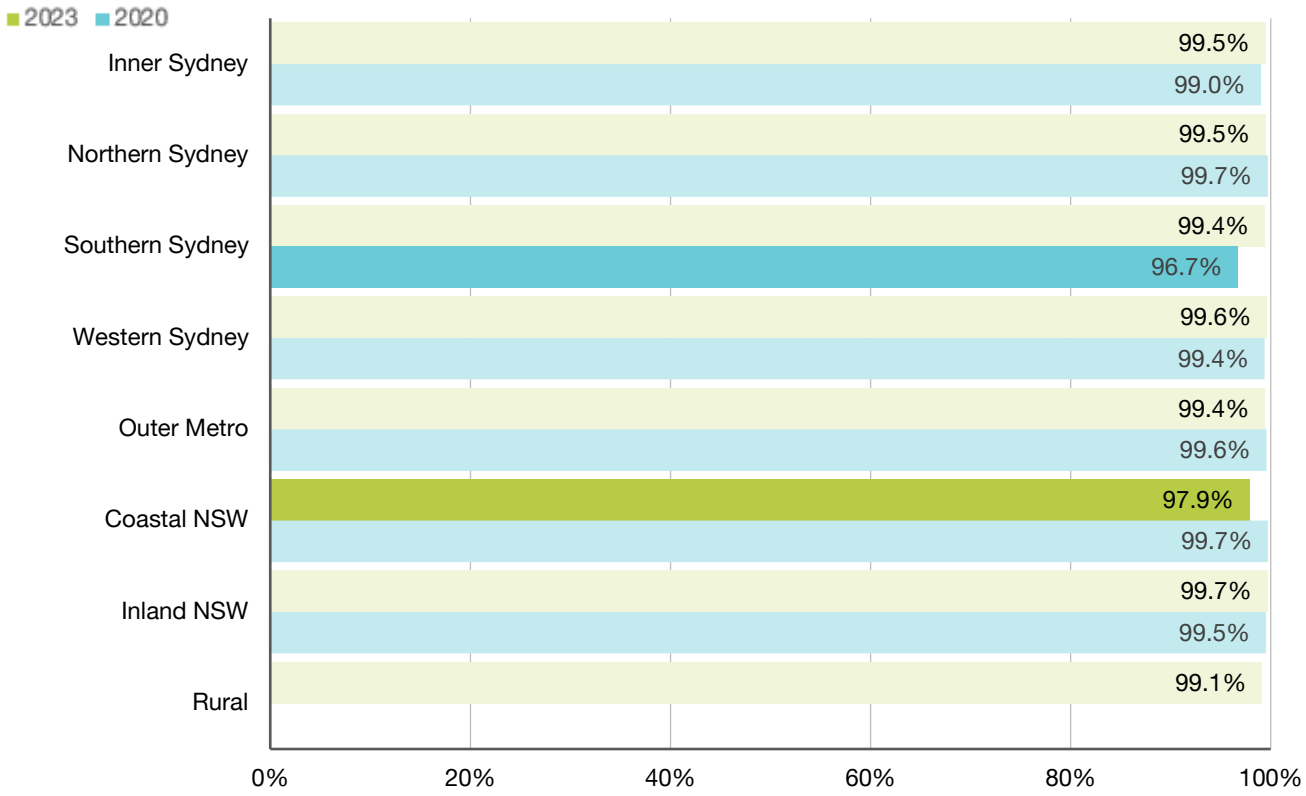


In both 2020 and 2023, observed seatbelt wear rates generally didn't differ significantly by region, except for one region, Coastal NSW, where seatbelt wear rates were significantly lower (97.9% in 2023) – see Figure 3.

Figure 3: **Observed Seat Belt Compliance by Region**

Q3 SEAT BELT WORN CORRECTLY BY REGION

Base excludes 'worn – undetermined' and 'undetermined' (2023 n=10,681, 2020 n=9,299).
Chart shows the % who were observed as 'worn conforming'.
Note rural locations were not included in the 2020 sample.



4. MAIN FINDINGS

4.2. MOBILE PHONE COMPLIANCE AMONGST LIGHT VEHICLE DRIVERS

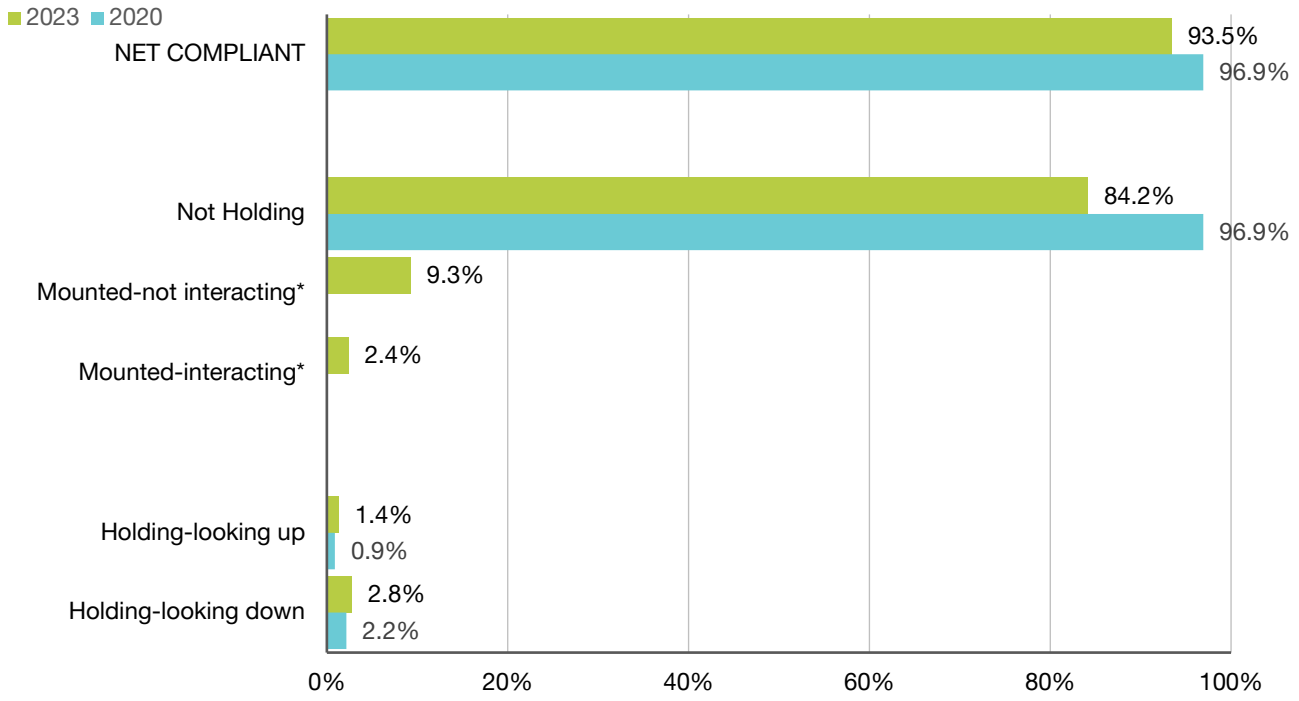
Compliance with mobile phone laws was significantly lower in 2023 (93.5%) than in 2020 (96.9%) – see Figure 4.

While new observation codes such as 'mounted-not interacting' and 'mounted-interacting' were added in 2023, even if all cases of 'mounting-interacting' were legal, the proportion of drivers observed being compliant with mobile phone laws in 2023 would still be significantly lower than in 2020[5].

Figure 4: **Observed Mobile Phone Compliance in NSW**

Q4 MOBILE PHONE USE

Base excludes 'undetermined' and any passengers (2023 n=9,230, 2020 n=8,869).
NET Compliant is the sum of 'Not Holding' and ''Mounted-not interacting'.
* Mounted mobile phones were not observed as a separate category in 2020.



* Note that 'mounted –interacting' has been excluded from the compliant category as observers did not make a judgement on if the interaction with the mounted mobile phone was legal or illegal. The NSW road rules allow some drivers to touch their phone in some circumstances. A Learner or Provisional driver in NSW can never touch their phone[6].

[5] Even if 'mounted-interacting' was included in the 'compliant' category the 2023 result (95.9%) would still be significantly lower than the 2020 result (96.9%).

[6] https://www.nsw.gov.au/driving-boating-and-transport/roads-safety-and-rules/safe-driving/mobiles-screens-and-gps

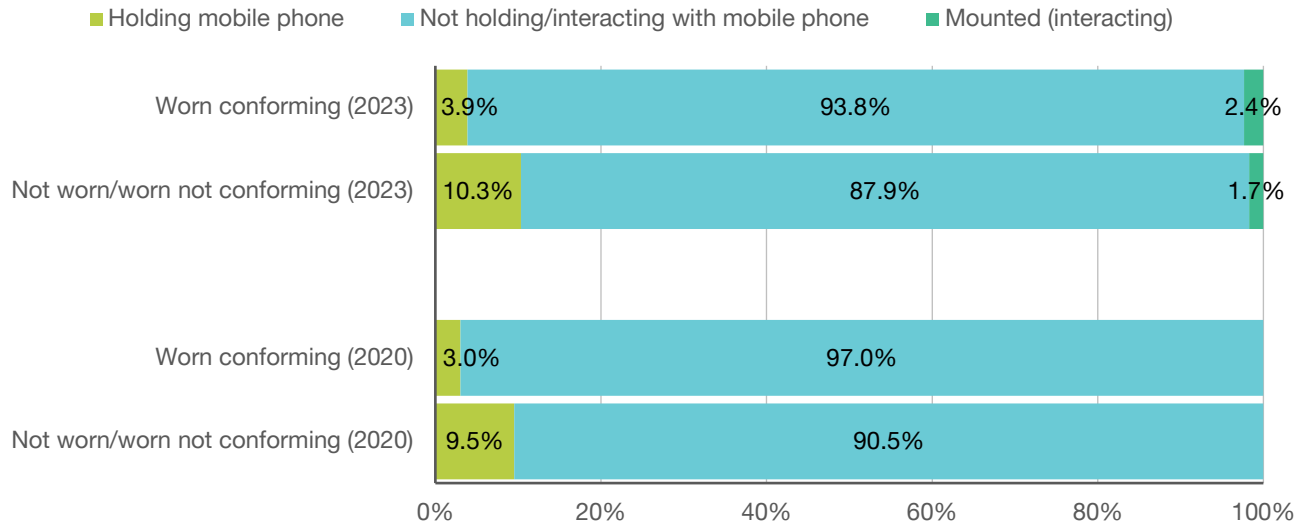
4. MAIN FINDINGS

As in 2020, those who were not compliant with seatbelt laws were significantly more likely to not be compliant with mobile phone laws. Figure 5 shows that 10.3% of drivers in light vehicles observed not wearing a seatbelt or not wearing a seatbelt in a compliant way were also observed hold a mobile phone. This compares with only 3.9% of drivers observed wearing a seat belt correctly who were observed illegally using a mobile phone.

Figure 5: **Seat Belt Non-Compliance and Mobile Phone Non-Compliance Relationship**

Q4 MOBILE PHONE BY Q3 SEAT BELT

Base excludes 'undetermined' and any passengers (2023 n=9,113, 2020 n=8,728).



4. MAIN FINDINGS

4.3. MOTORCYCLE HELMETS AND PROTECTIVE GEAR USE

All Riders and Passengers

Motorcycle helmet wear rates remained consistent from 2020 to 2023 at 99.9% (see Figure 6). However, the type of helmet worn did differ from 2020, with significantly less full-face helmets (66.4% compared to 70.8%) and significantly more open face helmets (31.7% compared to 27.5%) observed in 2023 compared to 2020.

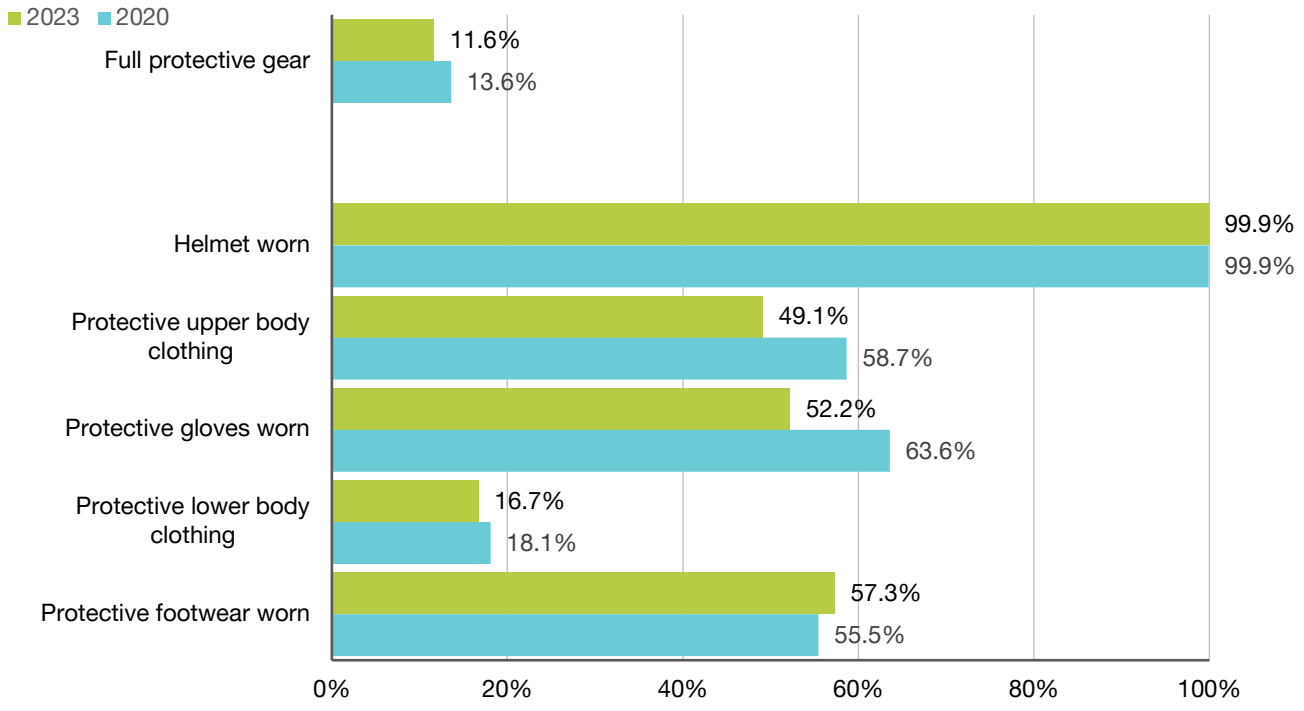
The wear rates of upper body protective gear (49.1% compared to 58.7%) and protective gloves (52.2% compared to 63.6%) amongst motorcycle riders and passengers had declined in 2023 when compared to 2020. However, wear rates of lower body protection (16.7%) and boots (57.3%) hadn't shifted significantly in 2023 when compared with 2020 results.

Due to the significant decreases in protective upper body wear and protective gloves the proportion of motorcycle riders observed in full protective gear (i.e. helmet, upper body, lower body, gloves and boots) significantly declined in 2023, down to 11.6% from 13.6% in 2020[7].

Figure 6: **Observed Rates of Helmet and Other Protective Gear Use**

Q4 TYPE OF HELMET, Q6 UPPER BODY, Q8 LOWER BODY, Q10 FOOTWEAR, Q11 MOTORCYCLE GLOVES

Helmet Base excludes 'undetermined' (2023 n=3,008, 2020 n=2,714)
Upper body Base excludes 'undetermined' (2023 n=3,009, 2020 n=2,714)
Gloves Base excludes 'undetermined' (2023 n=2,873, 2020 n=2,591)
Lower body Base excludes 'undetermined' (2023 n=3,003, 2020 n=2,709)
Footwear Base excludes 'undetermined' (2023 n=2,967, 2020 n=2,669)



[7] As noted in section 2.2, the classification of full protective gear has changed due to the exclusion of jeans (unless clearly protective jeans) from the calculation. The 2020 result shown here uses the new definition for 2023.

4. MAIN FINDINGS

Food Delivery Riders

In 2023 food delivery riders were identified as a sub-group amongst all motorcycle riders (see Figure 7 for key comparisons with other riders/passengers). The following results were observed about this sub-group, food delivery riders were:

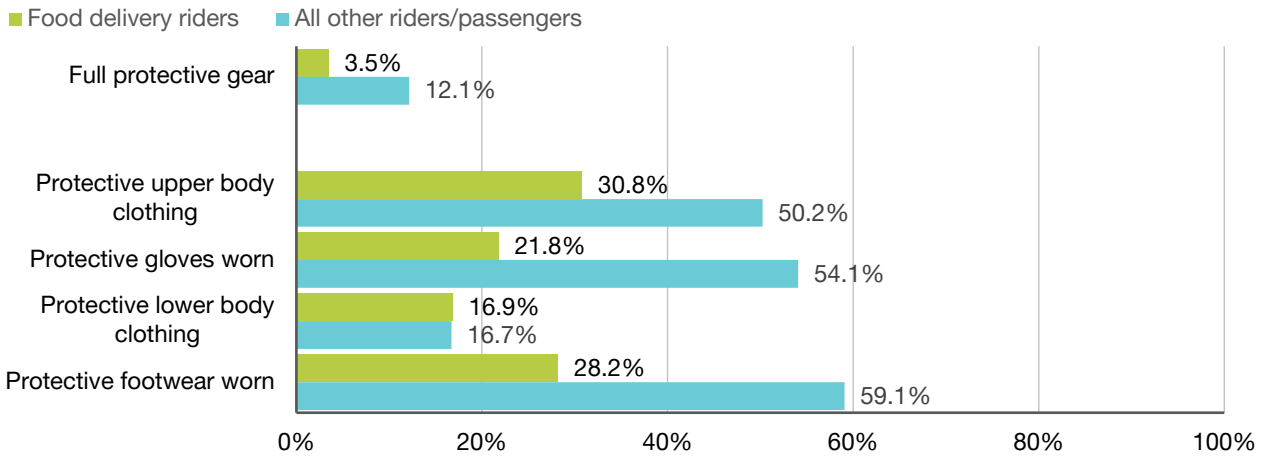
- Significantly less likely to be observed wearing protective clothing on their upper body (30.8%) compared to other motorcycle riders and passengers (50.2%).
- Significantly more likely to be observed wearing high visibility/fluorescent upper body clothing (54.1%) than other motorcycle riders/passengers.
- Significantly less likely to be observed wearing jeans (30.2%) than other motorcycle riders/passengers (42.4%).
- Significantly more likely to be observed wearing long pants (not jeans) than other riders/passengers (34.3% compared to 22.4%)
- Significantly more likely to be observed wearing wet weather pants (3.5%) than other riders/passengers (0.1%)
- Significantly less likely to be observed wearing protective footwear (28.2%) than other motorcycle riders/passengers (59.1%).
- Significantly more likely to be observed wearing tie up shoes (61.8%) or open toed shoes (4.1%) than other motorcycle riders/passengers (34.8% and 1.6% respectively).
- Significantly less likely to be observed wearing protective gloves (21.8%) than other motorcycle riders/passengers (54.1%).
- Significantly more likely to be observed wearing no gloves at all (60.6%) than other motorcycle riders/passengers (39.4%).

4. MAIN FINDINGS

Figure 7: **Observed Rates of Protective Gear Use Amongst Food Delivery Riders**

Q6 UPPER BODY, Q8 LOWER BODY, Q10 FOOTWEAR, Q11 MOTORCYCLE GLOVES

Upper body Base excludes 'undetermined' (food delivery riders n=172, others n=2,837)
Gloves Base excludes 'undetermined' (food delivery riders n=165, others n=2,708)
Lower body Base excludes 'undetermined' (food delivery riders n=172, others n=2,831)
Footwear Base excludes 'undetermined' (food delivery riders n=170, others n=2,797)



4.4. BICYCLE HELMET USE

Observed bicycle helmet wear rates were significantly lower in 2023 than in 2020 across all bicycle riders and passengers (89.5% compared to 91.2%) and both the 10 year and under and 18+ year old age groups (see Figure 8).

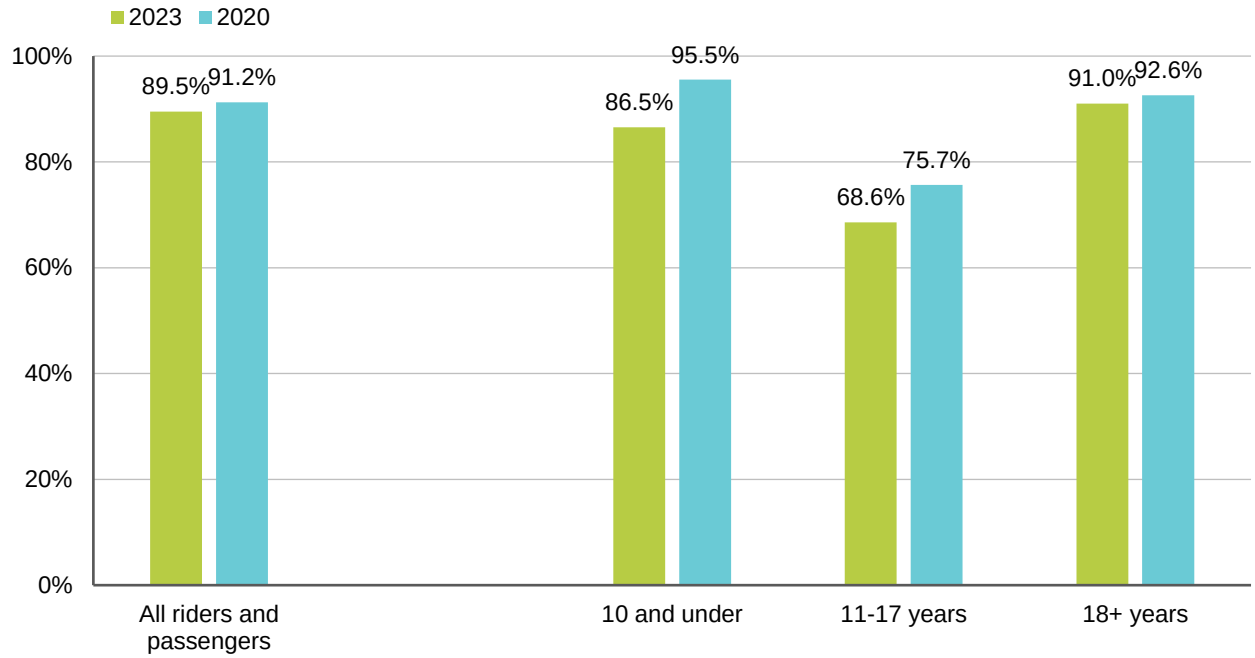
Consistent with 2020 (as shown in Figure 8) was the U-shaped distribution of helmet wear rates by age, with the 'teenage' category (11-17 years old) being the least likely to wear a bicycle helmet in 2023 (68.6%). While the result for this age group (11-17 years old) was lower than in 2020, the difference wasn't statistically significant.

4. MAIN FINDINGS

Figure 8: **Observed Rates of Helmet Wear by Estimated Age Group**

HELMET WEAR RATE (FROM Q3) BY Q2 AGE (ESTIMATED)

Base of bicycles only (including eBikes) (2023 n=3,016, 2020 n=2,901).



The 'teenage' cohort was also observed in 2023 exhibiting other poor habits even when they were observed wearing a helmet:

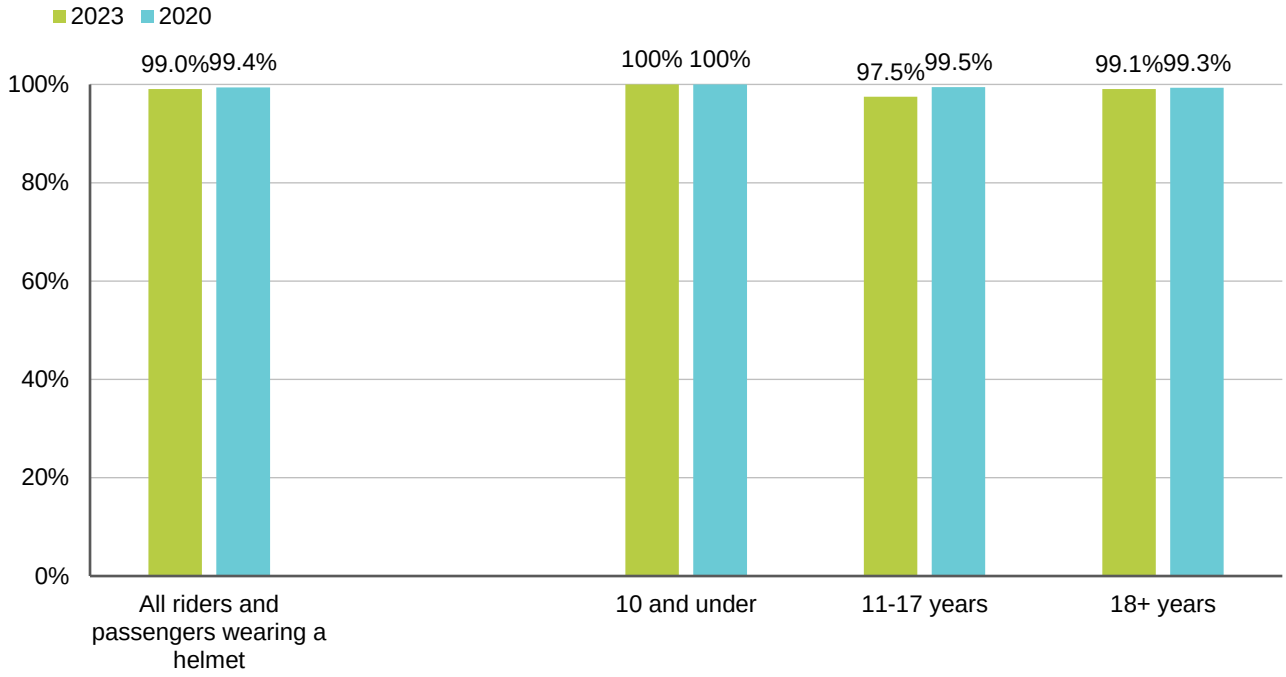
- They were significantly less likely to be observed wearing their helmet fitted correctly, i.e. not pushed back or back to front, (91.5% compared to 98.3% amongst those 10 years and under and 97.4% amongst 18+ year olds).
- This group was also less likely (although not statistically significant) to be observed wearing their helmet fastened, 97.5% amongst this cohort compared to 100% amongst those 10 years or younger and 99.1% amongst those aged 18 or older (see Figure 9).

4. MAIN FINDINGS

Figure 9: **Observed Helmet Fastening Rates by Estimated Age Group**

HELMET FASTENING (FROM Q4) BY Q2 AGE (ESTIMATED)

Base of those observed wearing a helmet on bicycles only (including eBikes) (2023 n=2,685, 2020 n=2,641).



5. CONCLUSIONS & IMPLICATIONS

Summary

While seat belt compliance has remained steady amongst light vehicle drivers and passengers there has been a significant decline in mobile phone compliance amongst drivers of light vehicles. The decline in mobile phone compliance in 2023 compared to 2020 is related to an increase in holding a mobile phone while stopped at traffic lights or a stop sign.

Helmet wear rates amongst motorcyclists were very high (nearly 100%). However, the wear rate of other items of protective clothing were significantly lower, especially protective lower body clothing. There has been an improvement since 2020 in the proportion of motorcycle riders and passengers observed wearing bright or bright accented helmets, upper body or lower body clothing, however, dark colours are still preferred by most motorcyclists.

The helmet wear rate amongst all bicyclists has declined since 2020. The decline was observed across all age groups, however the decline was greatest amongst children. Helmet wear rates remain particularly low amongst teenage bicyclists in 2023, and have also declined notably since 2020.

Implications

The 2023 SPI study points to the value of continuing to monitor SPIs and their links to road trauma. The findings point to the need for further research to understand what might be underpinning some of the observed changes from 2020 to 2023.

The findings in this report also point to the need for interventions to address unsafe behaviours largely in line with the Road Safety Action Plan 2026, highlighting the need for particular focus on:

- Mobile phone compliance amongst light vehicle drivers
- The use of protective clothing for motorcycle riders
- The use of protective clothing for delivery riders
- Bicycle helmet wearing – particularly interventions targeting declining helmet use amongst children and teens

6. PROJECT LEARNINGS AND RECOMMENDATIONS

The following suggestions are recommended for review prior to the conduct of any future SPI observation work.

Light Vehicles

Observation sites are currently at intersections with stop signs/traffic lights. It may be worth considering adding a few low-speed non-intersection sites during any future waves as a trial. We expect that observation rates will be lower due to increased difficulty to observe however given we obtained many more light vehicle observations than the quota target a few shifts could be sacrificed to trial this in future SPI projects to measure any possible changes.

Consider the inclusion of the position of the mobile phone being held to an ear for future observations.

Motorcycles

Consider changing the upper body clothing to a single response item with vests only recorded when they are the ONLY type of upper body wear and add a separate observation item for vests to ensure correct capture of hi-vis vests.

Bicycles

Remove Scenic Drive (Nowra), Cambewarra Road (Bomaderry) and Mulgoa Road (Penrith) as sites for bicycles, since so few observations achieved in those locations in 2023.

Add a question about high visibility clothing (vest/jacket/upper body), as per motorcycles as this is a requirement of food delivery bicycle riders as well.

7. APPENDICES

7.1. APPENDIX 1: SAMPLE SIZE BY SITE

Table 3: **Light Vehicle and Motorcycle Observation Sample by Site in 2023**

REGION	OBSERVATION SITE	LIGHT VEHICLE SAMPLE OBSERVED	MOTORCYCLE SAMPLE OBSERVED
Inner Sydney	Victoria Rd & Darling St, Rozelle	556	153
Inner Sydney	Anzac Pde & Dacey Ave, Moore Park	413	132
Inner Sydney	Sussex and Druitt Streets, Sydney CBD	Not included	117
Northern Sydney	Epping Rd & Centennial Ave, Lane Cove West	526	156
Northern Sydney	Pacific Hwy & Berowra Waters Rd, Berowra	460	106
Northern Sydney	Spit Rd & Military Rd, Mosman	432	140
Southern Sydney	Acacia Rd & President Ave, Kirrawee	449	106
Southern Sydney	The Grand Parade & Bay St, Brighton Le Sands	410	208
Western Sydney	The Northern Rd & Maxwell St, Penrith	578	99
Western Sydney	Prospect Hwy & Blacktown Road, Blacktown	494	57
Outer Metro	Princes & Creamery Rd, Albion Park Rail	1,009	126
Outer Metro	Newcastle Link Road & Lake Road, Wallsend	600	220
Outer Metro	Near Bald Hill Lookout, Stanwell Park	181	185
Outer Metro	Crown St and Kiera St, Wollongong	Not included	43
Outer Metro	Princes Hwy at Bourke Street, Wollongong	Not included	16
Coastal NSW	Princes Hwy & Moss Street, Nowra	1,021	225
Coastal NSW	Pacific Hwy & Coff Street, Coffs Harbour	678	319
Inland NSW	Sturt Hwy & Docker Street, Wagga Wagga	701	85
Inland NSW	Great Western Hwy & George Street, Bathurst	440	178
Inland NSW	Oxley Hwy & Peel Street, Tamworth	360	125
Inland NSW	Whylandra St (Newell Hwy) & Victoria St (Mitchell Hwy), Dubbo	300	190
Rural NSW	Napier St & Harfleur St, Deniliquin	730	15
Rural NSW	Richard St & Mitchell St, Bourke	466	11
Rural NSW	Oxley St & Sturt St, Bourke	180	1
TOTAL		**10,984**	**3,013**

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Table 4: **Bicycle Observation Sample by Site in 2023**

REGION	OBSERVATION SITE	BICYCLE SAMPLE OBSERVED	NON-BICYCLE SAMPLE OBSERVED
Inner Sydney	Sydney Harbour Bridge Cycle Path, Upper Fort St, Millers Point	373	5
Inner Sydney	Anzac Parade Shared Path & Lang Road Shared Path, Moore Park	198	0
Inner Sydney	Victoria Road Shared Path, Rozelle	176	10
Inner Sydney	Kent St cycleway, Sydney CBD	93	8
Northern Sydney	South Steyne Shared Path & Victoria Parade Shared Path, Manly	211	2
Northern Sydney	Berowra Waters Road Shoulder, Berowra	43	8
Northern Sydney	Delhi Road Shared Path, M2 Hills Motorway Freeway Shoulder & Epping Road Shared Path, North Ryde	38	2
Southern Sydney	Cook Park Shared Path and The Grand Parade, Ramsgate	256	4
Southern Sydney	Toronto Parade Mixed Traffic & Waratah Street Shared Path, Sutherland	66	2
Western Sydney	Shared path East of O'Connell St, Parramatta	209	5
Western Sydney	M7 Shared Path & Westlink M7 Freeway Shoulder, Glenwood	60	1
Western Sydney	Mulgoa Road Shared Path at Jamison Road, Penrith	12	1
Outer Metro	Throsby Creek Shared Path & Hannel Street Mixed Traffic, Wickham	255	5
Outer Metro	Cliff Road Shared Path, North Wollongong	232	19
Coastal NSW	Coastline Cycleway Shared Path, Jervis Bay	209	10
Coastal NSW	Hogbin Drive Shared Path & Harbour Drive Shared Path, Coffs Harbour	131	13
Coastal NSW	Nowra Skate Park, Nowra	13	6
Coastal NSW	Cambewarra Road, Bomaderry (opposite Bomaderry High School)	7	4
Coastal NSW	Scenic Drive, Nowra	1	0
Inland NSW	Great Western Hwy Road Shoulder, Shared Path & Bridge Street Shared Path, Bathurst	106	6
Inland NSW	Eastern Levee Link behind Tarcutta St, Wagga Wagga	104	8
Inland NSW	Peel River Shared Path intersection, Tamworth	103	6
Inland NSW	Peel River Shared Path & Scott Road (New England Hwy) Shared Path, Tamworth	37	2

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REGION	OBSERVATION SITE	BICYCLE SAMPLE OBSERVED	NON-BICYCLE SAMPLE OBSERVED
Inland NSW	Kooringal Rd near Copland Street, Wagga Wagga	26	1
Inland NSW	Corner of Stanley and George St, on the River Loop, Bathurst	21	2
Rural NSW	Richard St Shared Path & Mitchell St Shared Path, Bourke	36	34
TOTAL		**3,016**	**164**

7. APPENDICES

7.2. APPENDIX 2: OBSERVATION FRAMEWORK – LIGHT VEHICLES

Q1 Position

Driver no passengers

Driver with any passengers

Front seat passenger

Second row near-side passenger

Second row middle seat passenger

Second row far-side passenger

Did not capture third row seats as they would be too difficult to observe.

Q2 Gender

Male

Female

Don't know

Q3 Seat Belt

Worn conforming

Worn – undetermined

Worn NOT conforming

Not worn

Undetermined

Child seat (skip to Q5)

Note that a middle seat passenger may have a lap belt only so prefer 'undetermined' if it isn't clear one way or the other.

Q4 Mobile Phone

Holding-looking up

Holding-looking down

Not holding

Undetermined

Passenger

Mounted-interacting

Mounted-not interacting

Q5 Licence

Unrestricted

Learner

Provisional

Undetermined

Q6 Vehicle Type

Small-passenger vehicle

Medium-passenger vehicle

Large-passenger vehicle

People mover-passenger vehicle

SUV-small

SUV-large

Commercial-utes

Commercial-vans

Other/undetermined

Q7 Position in Traffic

Stopped first at light

Stopped behind others at light

Moving slowly

Stopped at stop sign

Moving through give way sign

Rolling through stop sign

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7.3. APPENDIX 3: OBSERVATION FRAMEWORK – MOTORCYCLES

Q1 Position

Rider

Pillion

Side Car Passenger

Q2 Headlight

On

Off

Q3 Type of Motorbike

Sports

Touring

Cruising

Traditional/Naked bike

Road Trail Bike/Dual Sport/Enduro

Adventure

Scooter

Postie

Police

Trike

Side Car

Other

Q13 Food Delivery Rider

Yes

No

Undetermined

Q4 Type of Helmet

Full face

Open face

Dual purpose/motocross

None

Undetermined

Q14 Helmet Attachments

Yes

No

Undetermined

Q5 Colour of Helmet

Dark

Mostly dark

Mostly dark with reflective elements

High visibility/fluorescent

Mostly bright with reflective elements

Mostly bright

Bright

No helmet

Q6 Upper Body

Leather jacket

Other protective jacket

Jumper/jacket

Shirt/t-shirt

Wet weather jacket

Dress

Sleeveless top/vest

No top

Undetermined

Multiple response

Q7 Colour of Upper Body

Dark

Mostly dark

Mostly dark with reflective elements

High visibility/fluorescent

7. APPENDICES

Mostly bright with reflective elements

Mostly bright

Bright

Other

Q8 Lower Body

Leather pants

Other protective pants

Jeans

Shorts

Wet weather pants

Dress

Long pants (not jeans)

Skirt

Undetermined

Q9 Colour of Lower Body

Dark

Mostly dark

Mostly dark with reflective elements

High visibility/fluorescent

Mostly bright with reflective elements

Mostly bright

Bright

Other

Q10 Footwear

Motorcycle boots

Other boots

Tie-up shoes

Laceless shoes

Open-toe shoes

None

Undetermined

Q11 Motorcycle Gloves

Protective

Handlebar mitts

None

Undetermined

Fingerless gloves (no protection/undetermined)

Fingerless gloves (protection)

Other

Q12 Mobile Phone

Holding

Not holding

Pillion

Mounted-interacting

Mounted-not interacting

Undetermined

Q15 Licence

Unrestricted

Learner

Provisional

Undetermined

7. APPENDICES

7.4. APPENDIX 4: OBSERVATION FRAMEWORK – BICYCLES

Q1 Position

Rider

Passenger in child seat

Passenger in child trailer

Tandem (rear rider)

Q9 Bicycle/Vehicle Type

Flat bar bicycle

Drop bar bicycle

E-bike

E-scooter

Other electric powered wheeled device

Foot scooter

Q10 Delivery Rider

Yes

No

Undetermined

Q1 Gender

Male

Female

Don't know

Q2 Age

10 and under

11-17

18 plus

Q3 Type of Helmet

Standard/road

Full face

Non-bicycle helmet

Skate style

Mountain bike

None

If none at Q3 skip to Q5 (i.e. do not ask Q11 and Q4).

Q11 Helmet Position

Correct

Incorrect (tilted)

Undetermined

Q4 Helmet Strap

Fastened firmly

Fastened loosely

Not fastened

Undetermined

No helmet

Q5 Path Type

Shared path

Dedicated cycleway

Road shoulder

Mixed traffic (on road)

Adjacent to shared path or cycleway

Normal footpath

Q6 Mobile Phone

Holding

Not holding

Mounted-interacting

Mounted-not interacting

Undetermined

Q7 Earbuds/Headphones

In any ear

Not in visible ear

Undetermined

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