RESEARCH REPORT

Safety Performance Indicator Observational Study

Transport for NSW

November 2020

NSW GOVERNMENT | Transport for NSW

TAVERNER RESEARCH

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1. EXECUTIVE SUMMARY

This research was commissioned by the NSW Centre Road Safety (CRS), who engaged Taverner Research to conduct an observational study to provide information on NSW road user behaviour in regard to a range of Safety Performance Indicators (SPI), specifically:

- Light vehicle seat belt use
- Motorcycle helmet and protective gear use
- Bicycle helmet use

Observations were undertaken at the roadside with observers standing at safe locations at intersections where light vehicles, motorcycles or bicycles either stopped or slowed down sufficiently to enable observations to be undertaken.

Observations were undertaken during day light hours with weekday shifts from 7:00am to 1:00pm and 1:00pm to 7:00pm and weekend shifts from 10:00am to 5:00pm.

Observers worked in teams of two with both observing each vehicle to determine key information. If the observers could not agree on an observation detail an "undetermined" was recorded for that variable although the vehicle or rider was recorded and included in the total sample.

Observations were entered into electronic tablet computers (Android based) with data uploaded to an Australian based data server in real time (if no 4G connection was available data was held on the tablet in offline mode until such time as a connection was available for synching).

The observation instruments for each SPI measure were agreed with the CRS project team and included prompts for each observation item and included an "undetermined" option as required.

1.1. LIGHT VEHICLES

A total of 9,455 light vehicle drivers and front seat passengers were observed at 16 locations. Back seat passengers including child seats were not observed.

Seat belt usage was nearly universal with 99% of drivers and passengers observed wearing their seat belt correctly.

There were few differences amongst groups, however those in metro locations were more likely than those in regional areas to be wearing their seat belt correctly, and males were more likely than females to have been observed not wearing their seat belt as required by law and correctly fitted (1% non-compliant compared to 0.4% in both cases).

In terms of mobile phone usage, 97% of drivers observed were not holding a mobile phone and 3% were observed holding a mobile phone in their hand.

There was little difference in mobile phone usage between driver's location, gender or licence classes, however, drivers with passengers were more likely to be observed not holding a mobile phone (98%) than drivers with no passengers (97%), a statistically significant difference.

1. EXECUTIVE SUMMARY

1.2. MOTORCYCLES

A total of 2,714 motorcycle riders and pillion passengers were observed at 16 locations.

Helmet usage among motorcyclists was also nearly universal with over 99% of motorcycle riders and pillion passengers observed wearing a helmet with only 2 of 2,714 (0.07%) not wearing any type of helmet. Full face helmets were most frequently worn (71%) as were dark or mostly dark (65%) helmets.

In terms of upper body coverings, over half of motorcyclists (59%) were wearing leather or other protective jackets. Upper body coverings were predominantly dark or mostly dark (79%).

Lower body coverings were most likely to be jeans or long pants (69%). It should be noted that some of these may have been protective pants that were not obvious to the observer. Lower body coverings were also most likely to be dark or mostly dark (82%).

The most frequently observed footwear were tie-up shoes (37%) and other boots (37%) followed by purpose made motorcycle boots (18%). Purpose made motorcycle gloves were worn by 61% of motorcyclists.

Nearly three in four motorcyclists observed had their headlight on (74%). Headlight usage increased to 97% when observed during mist or light rain and to 92% when there had been rain previous to the observation.

Less than 1% of motorcyclists (13 of 2,620 observed) were observed holding a mobile phone.

1.3. BICYCLES

A total of 2,901 bicyclists were observed across 19 locations.

Overall, 91% of bicyclists observed were wearing a helmet. Of those wearing a helmet, 99% wore it fastened. Less than 1 in 10 cyclists (8%) were observed not wearing a helmet (n=249).

In terms of mobile phone use, 94% of bicyclists were observed not holding a mobile phone in their hand, 4% had a phone attached to their bicycle (in a phone holder) and were not touching it and 2% were observed holding a mobile phone in their hand.

The majority of bicyclists observed (83%) did not have an earbud or headphone in an ear visible to the observer.

2. PROJECT BACKGROUND & OBJECTIVES

The Road Safety Plan 2021 commits NSW to setting new road safety targets every 10 years to make sure we continue to move Towards Zero trauma. This relies on having a robust system for managing road safety performance linked to trauma outcomes.

The use of SPIs is an internationally recognised approach to improving road safety management. SPIs are defined as measures of risk in the road system. These include changes in road user behaviour, changes in the vehicle fleet and changes in the road environment.

Best-performing countries globally have adopted a practical total number of top-line indicators that measure how well the key elements of the transport system are operating in safety terms, and which improvements will yield the greatest tangible trauma reductions. Improvements in SPIs show that the system is being made more error tolerant and survivable for road users.

Observational studies have been undertaken in NSW in the past that have identified prevalence of key road user behaviours, but these studies have historically focused on a single behaviour and have not been undertaken regularly or systematically.

The aim of this research is to deliver an observational study for the Centre for Road Safety (CRS) and provide a report that outlines prevalence measures for a selection of road user behaviours across NSW, specifically:

- Light vehicle seat belt use
- Motorcycle helmet and protective gear use
- Bicycle helmet use

3. METHODOLOGY

3.1. GENERAL METHODOLOGY

The approach taken for the study was as follows:

- Development of an observation schedule for each measure which included metro areas (Sydney, Newcastle and Wollongong) and rural/regional areas (all other areas in NSW). The schedule aimed to achieve 1,100 metro observations and 400 rural/ regional observations for each SPI measure, assuming approximately 100 observations per location
- Observers underwent extensive training for SPI measures including detailed information on how to determine each observation detail, photo examples of various options, how to record the information and practice examples. Observers were instructed to record "undetermined" in cases where there was reasonable doubt or when observers did not agree. For age of bicyclists, observers were instructed to enter their best estimate therefore these observations may not be 100% accurate. Cyclists' gender was also assumed by the observers during observations.
- 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 "undetermined" was recorded although the vehicle or rider was recorded and included in the total sample
- Taverner worked closely with the CRS project team to develop an observation instrument for each measure including each of the key observation items and appropriate codes
- Observers entered the observation data into Android based tablets for real-time upload to a secure, Australian based server
- All observers 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 was an interruption to the automatic synchronisation process

The observation items and codes are listed in Appendix A.

3.2. NOTES ON DATA AGGREGATION & SIGNIFICANCE

Aggregated data reported in the commentary may be different (+/- 1%) to the sum of the individual components shown in a chart or commentary due to rounding. Similarly, the sum of the displayed results to single response questions may not add to 100% due to rounding of the individual responses.

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. Figures in this report show significant differences as follows:

XX%↓ = Significantly less at the 0.05 level

XX%↑ = Significantly greater at the 0.05 level

3. METHODOLOGY

3.3. SURVEY SAMPLE

The number of observations achieved at each location are shown in Table 3.1.

Table 3.1: Light Vehicle and Motorcycle Sample

GENERAL AREA	LOCATION	DATES & TIMES	LIGHT VEHICLES	MOTOR-CYCLES
Inner Sydney	Anzac Pde & Dacey Ave, Moore Park	Mon 12 Oct 7am-1pm Tue 13 Oct 1pm-7pm	366	231
Inner Sydney	Victoria Rd & Darling St, Rozelle	Fri 16 Oct 1pm-7pm Sat 17 Oct 10am-5pm	466	269
Northern Sydney	Epping Rd & Centennial Ave, Lane Cove West	Mon 19 Oct 1pm-7pm Wed 21 Oct 7am-1pm	575	201
Northern Sydney	Spit Rd & Military Rd, Mosman	Mon 12 Oct 7am-1pm Wed 14 Oct 1pm-7pm	796	178
Northern Sydney	Pacific Hwy & Berowra Waters Rd, Berowra	Tue 20 Oct 1pm-7pm Sat 24 Oct 10am-5pm	624	93
Southern Sydney	Acacia Rd & President Ave, Kirrawee	Mon 12 Oct 7am-1pm Tue 13 Oct 1pm-7pm	449	211
Southern Sydney	The Grand Parade & Bay St, Brighton Le Sands	Wed 21 Oct 7am-1pm Sat 24 Oct 10am-5pm	468	253
Western Sydney	The Northern Rd & Maxwell St, Penrith	Mon 12 Oct 7am-1pm Sat 17 Oct 10am-5pm	504	103
Western Sydney	Prospect Hwy & Blacktown Road, Blacktown	Sat 24 Oct 10am-5pm Tue 27 Oct 7am-1pm	673	75
Outer Metro	Princess Highway & Creamery St, Albion Park	Tue 13 Oct 1pm-7pm Sat 17 Oct 10am-5pm	968	231
Outer Metro	Newcastle Link Road & Lake Road, Wallsend	Tue 15 Oct 7am-1pm Sun 18 Oct 10am-5pm	473	119
Coastal NSW	Pacific Hwy & Coffs Street, Coffs Harbour	Thur 15 Oct 7am-1pm Fri 16 Oct 1pm-7pm	151	103
Coastal NSW	Princess Hwy & Moss Street, Nowra	Mon 12 Oct 7am-1pm Sun 18 Oct 10am-5pm Tue 20 Oct 1pm-7pm	1,304	287
Inland NSW	Oxley Hwy & Peel Street, Tamworth	Wed 21 Oct 7-1pm Thur 22 Oct 1pm-7pm	753	113
Inland NSW	Great Western Hwy George Street, Bathurst	Tue 27 Oct 7am-1pm Wed 28 Oct 1pm-7pm Sat 31 Oct 10am-5pm	203	115
Inland NSW	Sturt Hwy & Docker Street, Wagga Wagga	Thur 29 Oct 7am-1pm Fri 30 Oct 1pm-7pm Sat 31 Oct 10am-5pm	682	132
Total			9,455	2,714

3. METHODOLOGY

Table 3.2: Bicycle Sample

GENERAL AREA	LOCATION	DATES & TIMES	BICYCLES
Inner Sydney	Anzac Parade Shared Path, Moore Park	Tue 15 Oct 1pm-7pm	364
Inner Sydney	Victoria Road Shared Path, Rozelle	Sun 18 Oct 10am-5pm	224
Inner Sydney	Sydney Harbour Bridge Cycle Path, Upper Fort St. Millers Point	Fir 30 Oct 1pm-7pm	160
Northern Sydney	Delhi Road Shared Path, M2 Hills Motorway Freeway Shoulder & Epping Road Shared Path, North Ryde	Thur 22 Oct 7am-1pm	69
Northern Sydney	South Steyne Shared Path & Victoria Parade Shared Path, Manly	Tue 13 Oct 7am-1pm	261
Northern Sydney	Berowra Waters Road Shoulder, Berowra	Mon 19 Oct 1pm-7pm	53
Southern Sydney	Toronto Parade Mixed Traffic & Waratah Street Shared Path, Sutherland	Sat 17 Oct 10am-5pm	127
Southern Sydney	Cook Park Shared Path and The Grand Parade, Ramsgate	Fri 23 Oct 7am-1pm	133
Western Sydney	Mulgoa Road Shared Path at Jamison Road, Penrith	Tue 13 Oct 1pm-7pm	44
Western Sydney	Blacktown Road Shared Path & Road Shoulder, Seven Hills	Sun 18 Oct 10am-5pm	12
Western Sydney	M7 Shared Path & Westlink M7 Freeway Shoulder, Glenwood	Tue 27 Oct 1pm-7pm	140
Outer Metro	Princess Highway Shared Path & Northcliff Drive Mixed Traffic, Shared Path & Road Shoulder, Berkeley	Thur 15 Oct 1pm-7pm	19
Outer Metro	Squires Way Shared path & Stuarts Park Shared Path, North Wollongong	Sat 31 Oct 10am-5pm	345
Outer Metro	Throsby Creek Shared Path & Hannell Street Mixed Traffic, Wickham	Tue 13 Oct 7am-1pm	369
Coastal NSW	Hogbin Drive Shared Path & Harbour Creek Shared Path, Coffs Harbour	Sat 17 Oct 7am-1pm Fri 23 Oct 7am-1pm	118
Coastal NSW	Princes Hwy Shared Path & Shoalhaven River Bridge Shared Path, Nowra	Wed 14 Oct 7am-1pm Fri 16 Oct 1pm-7pm	37
Coastal NSW	Coastline Cycleway Shared Path, Jervis Bay	Sun 1 Nov 10am-5pm	195
Inland NSW	Peel River Shared Path & Scott Road Shared Path, Tamworth	Fri 23 Oct 1pm-7pm Sat 24 Oct 10am-5pm Sun 25 Oct 10am-5pm Tue 26 Oct 7am-1pm Wed 28 Oct 1pm-7pm	94
Inland NSW	Great Western Hwy Shared Path & Bridge Street Shared Path, Bathurst	Wed 28 Oct 1pm-7pm Thur 29 Oct 1pm-7pm Fri 30 Oct 1pm-7pm Sat 31 10am-5pm	137
TOTAL			2,901

4. DETAILED FINDINGS

This section of the report provides charted and narrative commentary for all items observed during the study.

4.1. LIGHT VEHICLES

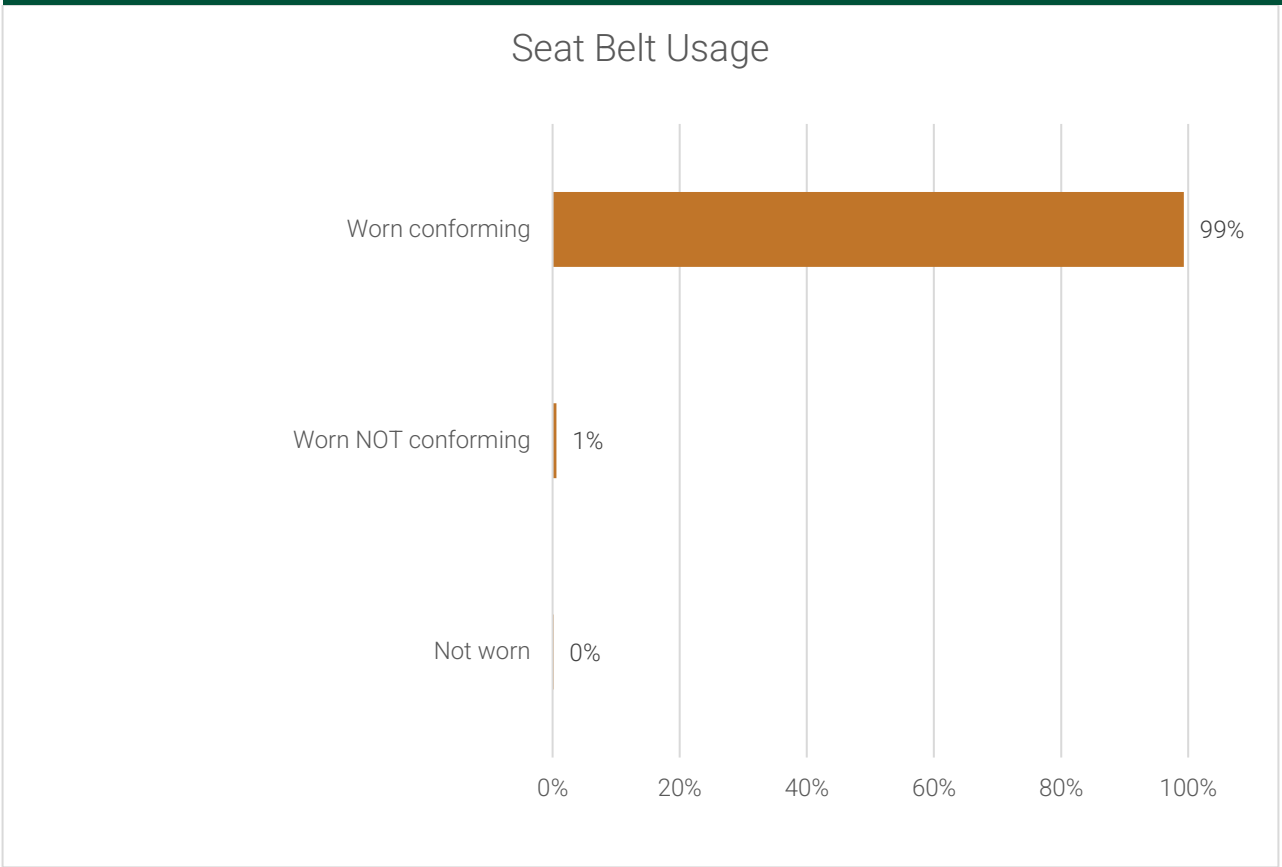
Nearly all drivers and front seat passengers (99.3%) observed in light vehicles were wearing their seat belt as required by law and correctly fitted (captured in the data as 'worn conforming', where a seatbelt is worn at the appropriate height over the shoulder, across the waist and buckled). Only 12 of 9,455 persons observed were not wearing a seat belt at all (Figure 4.1).

Note that only front seat passengers were observed for seat belt usage, rear seat passengers and child seats were not included in the observations. Additionally, observations that were coded as "seat belt worn-undetermined" (n=120) or "seat belt-undetermined" (n=36) have been excluded from seat belt usage analysis.

Compliance was generally consistent across locations, with only two locations having less than 95% worn conforming rates. The general area with the lowest "worn conforming" rate was in Southern Sydney (97%) with 3% "worn-not conforming". Of this group, observers reporting seeing quite a few people wearing their seat belts draped to the side. See Appendix B for seat belt usage by general area and location.

Figure 4.1: Seat Belt Usage

SEAT BELT USAGE
BASE: LIGHT VEHICLES N=9,299
EXCLUDES "SEAT BELT WORN-UNDETERMINED" N=120 AND "SEAT BELT-UNDETERMINED" N=36 CODES



4. DETAILED FINDINGS

Table 4.1 below shows seat belt usage among various groups with those in regional locations more likely than those in metro areas and females being more likely than males to have been observed wearing their seat belt correctly (100% compared to 99% in both cases).

Table 4.1: Seat Belt Usage by Location, Gender, Position & Licence

SEAT BELT USAGE
BASE: LIGHT VEHICLES N=9,299
EXCLUDES "SEAT BELT WORN-UNDETERMINED" N=120 AND "SEAT BELT-UNDETERMINED" N=36 CODES

	SEAT BELT WORN CORRECTLY
LOCATION	
Metro n=6,224	99% ↓
Regional n=3,075	100% ↑
ASSUMED GENDER	
Male n=5,519	99% ↓
Female n=3,713	100% ↑
Unsure n=14	100%
POSITION IN VEHICLE	
Driver no passenger n=6,490	99%
Driver with passenger n=2,384	99%
Passenger n=425	100%
LICENCE	
Unrestricted n=8,729	99%
Provisional n=489	100%
Learner n=81	100%
Total n=9,299	99%

4. DETAILED FINDINGS

Table 4.2 below shows that those observed in commercial vans (98%) and other or undetermined vehicle types (90%) were least likely to wear their seat belt correctly. Other and undetermined vehicle types (46 vehicles or 0.46%) include those that did not fit neatly into a category (i.e. small vs. medium) or where the two observers did not agree on vehicle type in which case they were instructed to record undetermined.

Additionally, those observed while moving slowly (100%) were more likely to be observed wearing their seat belt correctly than those observed while stopped behind others at stop lights (99%). Note vehicles were classified as moving slowly if observed approaching the stop lights or moving off as the light changed.

Table 4.2: Seat Belt Usage by Vehicle Type & Position in Traffic

SEAT BELT USAGE
BASE: LIGHT VEHICLES N=9,299
EXCLUDES "SEAT BELT WORN-UNDETERMINED" N=120 AND "SEAT BELT-UNDETERMINED" N=36 CODES

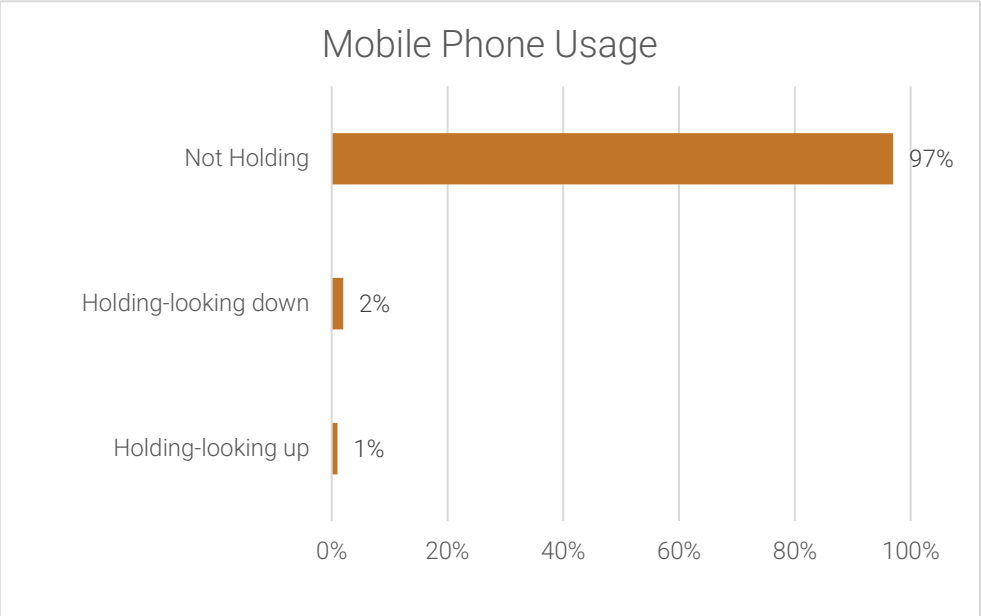
	SEAT BELT WORN CORRECTLY
VEHICLE TYPE	
Small passenger n=2,656	100%
Medium passenger n=1,477	99%
Large passenger n=520	99%
People mover n=329	100%
SUV-small n=1,485	99%
SUV-large n=988	99%
Commercial ute n=1,371	99%
Commercial van n=431	98% ↓
Other/Undetermined n=42	90% ↓
POSITION IN TRAFFIC	
Stopped first at light n=4,086	99%
Stopped behind others n=2,718	99% ↓
Moving slowly n=2,577	100% ↑
Total n=9,299	99%

4. DETAILED FINDINGS

Figure 4.2 shows that 97% of drivers observed were not holding a mobile phone; 2% observed were looking down at their phone (n=192) and 1% were holding a phone but looking up (n=80).

Figure 4.2: Mobile Phone Usage

MOBILE PHONE USAGE
BASE: LIGHT VEHICLES DRIVERS ONLY N=8,869
EXCLUDES "PASSENGERS" N=458 AND "MOBILE PHONE-UNDETERMINED" N=128 CODES



4. DETAILED FINDINGS

Drivers with passengers were more likely to be observed not holding a mobile phone (98%) than drivers with no passengers (97%; Table 4.3). There was little difference between driver's location, gender or licence classes.

Table 4.3: Mobile Phone Usage by Location, Gender, Position & Licence

MOBILE PHONE USAGE
BASE: LIGHT VEHICLES DRIVERS ONLY N=8,869
EXCLUDES "PASSENGERS" N=458 AND "MOBILE PHONE-UNDETERMINED" N=128 CODES

	NOT HOLDING MOBILE PHONE	HOLDING MOBILE PHONE
LOCATION		
Metro n=5,805	97%	3%
Regional n=2,875	97%	3%
ASSUMED GENDER		
Male n=5,260	97%	3%
Female n=3,325	97%	3%
Unsure n=12	100%	0%
POSITION		
Driver no passenger n=6,514	97% ↓	3% ↑
Driver with passenger n=2,355	98% ↑	2% ↓
LICENCE		
Unrestricted n=8,333	97%	3%
Provisional n=465	98%	2%
Learner n=71	99%	3%
Total n=8,869	97%	3%

In terms of drivers with provisional licences, 97% of female provisional drivers were not holding a mobile phone compared to 99% of male provisional drivers. Additionally, 98% of provisional drivers with no passenger were not holding a mobile phone compared to 99% of provisional drivers with passenger(s).

4. DETAILED FINDINGS

Table 4.4 shows that drivers stopped at stop lights (4%) were more likely to be holding a mobile phone than those moving slowly through the intersection (1%). This difference was statistically significant.

Table 4.4: Mobile Phone Usage by Vehicle Type & Position in Traffic

MOBILE PHONE USAGE
BASE: LIGHT VEHICLES DRIVERS ONLY N=8,7289
EXCLUDES "PASSENGERS" N=458 AND "MOBILE PHONE-UNDETERMINED" N=128 CODES
EXCLUDES "SEAT BELT WORN-UNDETERMINED" N=120 AND "SEAT BELT-UNDETERMINED" N=36 CODES

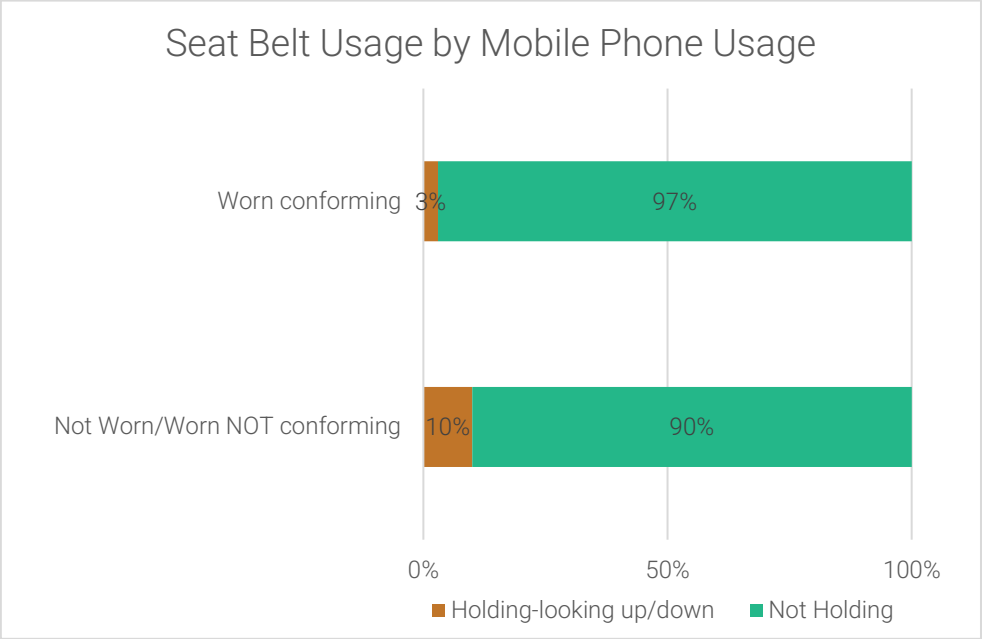
	NOT HOLDING MOBILE PHONE	HOLDING MOBILE PHONE
VEHICLE TYPE		
Small passenger n=2,451	97%	3%
Medium passenger n=1,383	96%	4%
Large passenger n=461	97%	3%
People mover n=313	98%	2%
SUV-small n=1,380	97%	3%
SUV-large n=897	97%	3%
Commercial ute n=1,274	97%	3%
Commercial van n=400	96%	4%
Other/Undetermined n=38	93%	7%
POSITION IN TRAFFIC		
Stopped first at light n=3,826	96% ↓	4% ↑
Stopped behind others n=2,610	96% ↓	4% ↑
Moving slowly n=2,433	99% ↑	1% ↓
Total n=8,869	97%	3%

4. DETAILED FINDINGS

Among drivers observed wearing their seatbelts correctly, 97% were observed to not be holding a mobile phone (Figure 4.3). In contrast, among drivers who did not wear a seatbelt or did not wear it correctly, only 90% were observed to not be holding a mobile phone.

Figure 4.3: Seat Belt Usage by Mobile Phone Usage

SEAT BELT USAGE BY MOBILE PHONE USAGE
BASE: LIGHT VEHICLES DRIVERS ONLY N=8,869
EXCLUDES "PASSENGERS" N=458 AND "MOBILE PHONE-UNDETERMINED" N=128 CODES



4. DETAILED FINDINGS

4.2. MOTORCYCLES

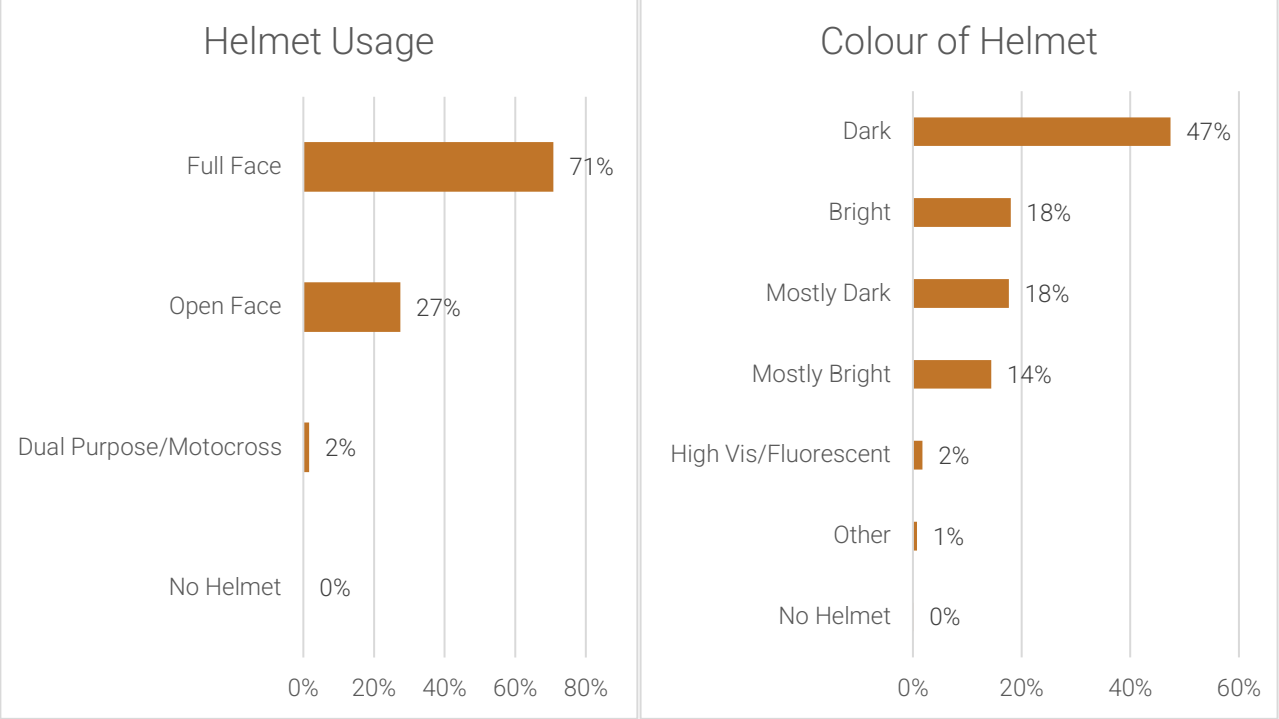
Overall, 99% of motorcycle riders and pillion passengers observed were wearing a helmet with only 2 of 2,714 (.07%) not wearing any type of helmet (Figure 4.4).

Figure 4.4 also shows that nearly two-thirds of helmets observed were dark (47%) or mostly dark (18%).

Note for all protective items the "other" category includes road neutral colours such a light blue and grey.

Figure 4.4: Type of Helmet

HELMET USAGE AND COLOUR OF HELMET
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

Table 4.5 shows there is a diverse pattern of helmet types in the study locations with Northern Sydney (83%), Southern Sydney (76%) and Inland NSW (83%) motorcyclists being more likely to wear full face helmets and Inner Sydney (37%), Western Sydney (47%) and Coastal NSW (42%) motorcyclists being more likely to wear open face helmets.

The type of motorcycle ridden had some impact on helmet type with sport bike (92%) and traditional motorcycle riders (81%) being more likely to wear a full face helmet and scooter (56%) and trail bike riders (36%) being more likely to wear an open face helmet.

Table 4.5: Type of Helmet by General Area & Motorcycle Type

TYPE OF HELMET
BASE: MOTORCYCLES N=2,714
Note: row % are shown with statistics testing between general area and type of motorcycle

	FULL FACE	OPEN FACE	DUAL PURPOSE/ MOTOCROSS	NONE
GENERAL AREA				
Inner Sydney n=470	60% ↓	37% ↑	3% ↑	0%
Northern Sydney n=502	83% ↑	17% ↓	0% ↓	0%
Southern Sydney n=464	76% ↑	24%	0% ↓	0%
Western Sydney n=178	52% ↓	47% ↑	1%	0%
Outer Metro n=350	73%	25%	3%	0%
Coastal NSW n=390	57% ↓	42% ↑	1%	0%
Inland NSW n=360	83% ↑	12% ↓	4% ↑	1% ↑
TYPE OF MOTORCYCLE				
Sports n=495	92% ↑	8% ↓	0% ↓	0%
Touring n=351	72%	28%	1%	0%
Cruising n=391	71%	29%	0% ↓	0%
Traditional/Naked Bike n=764	81% ↑	18% ↓	1%	0%
Road Trail Bike n=190	51% ↓	36% ↑	13% ↑	0%
Scooter n=477	43% ↓	56% ↑	2%	0%
Postie/Police/Other n=46	37% ↓	59% ↑	2%	2% ↑
Total n=2,714	71%	27%	2%	0%

4. DETAILED FINDINGS

Table 4.6 shows the colour of helmets worn by each general area and type of motorcycle noting that Coastal NSW motorcyclists (78%) and cruising (84%) and touring (72%) motorcycle riders are the most like to wear darker helmets. Whereas Southern Sydney motorcyclists (45%), sports bike (44%), road trail bike (44%) and scooter (40%) riders are most likely to wear brighter coloured helmets.

Table 4.6: Colour of Helmet by General Area & Motorcycle Type

COLOUR OF HELMET
BASE: MOTORCYCLES N=2,712
Note: row % are shown with statistics testing between general area and type of motorcycle
EXCLUDES NO HELMET N=2

	DARK & MOSTLY DARK	HIGH VIS & BRIGHT & MOSTLY BRIGHT	OTHER
GENERAL AREA			
Inner Sydney n=470	68%	32%	0%
Northern Sydney n=502	61%	38%	2%
Southern Sydney n=464	55% ↓	45% ↑	0%
Western Sydney n=178	70%	28%	2%
Outer Metro n=350	69%	30%	1%
Coastal NSW n=390	78% ↑	21% ↓	1%
Inland NSW n=358	61%	39%	0%
TYPE OF MOTORCYCLE			
Sports n=495	56% ↓	44% ↑	0%
Touring n=351	72% ↑	27% ↓	1%
Cruising n=390	84% ↑	15% ↓	1%
Traditional/Naked Bike n=764	68%	31%	1%
Road Trail Bike n=190	55% ↓	44% ↑	1%
Scooter n=477	58% ↓	40% ↑	2% ↑
Postie/Police/Other n=45	18% ↓	82% ↑	0%
Total n=2,712	65%	34%	1%

4. DETAILED FINDINGS

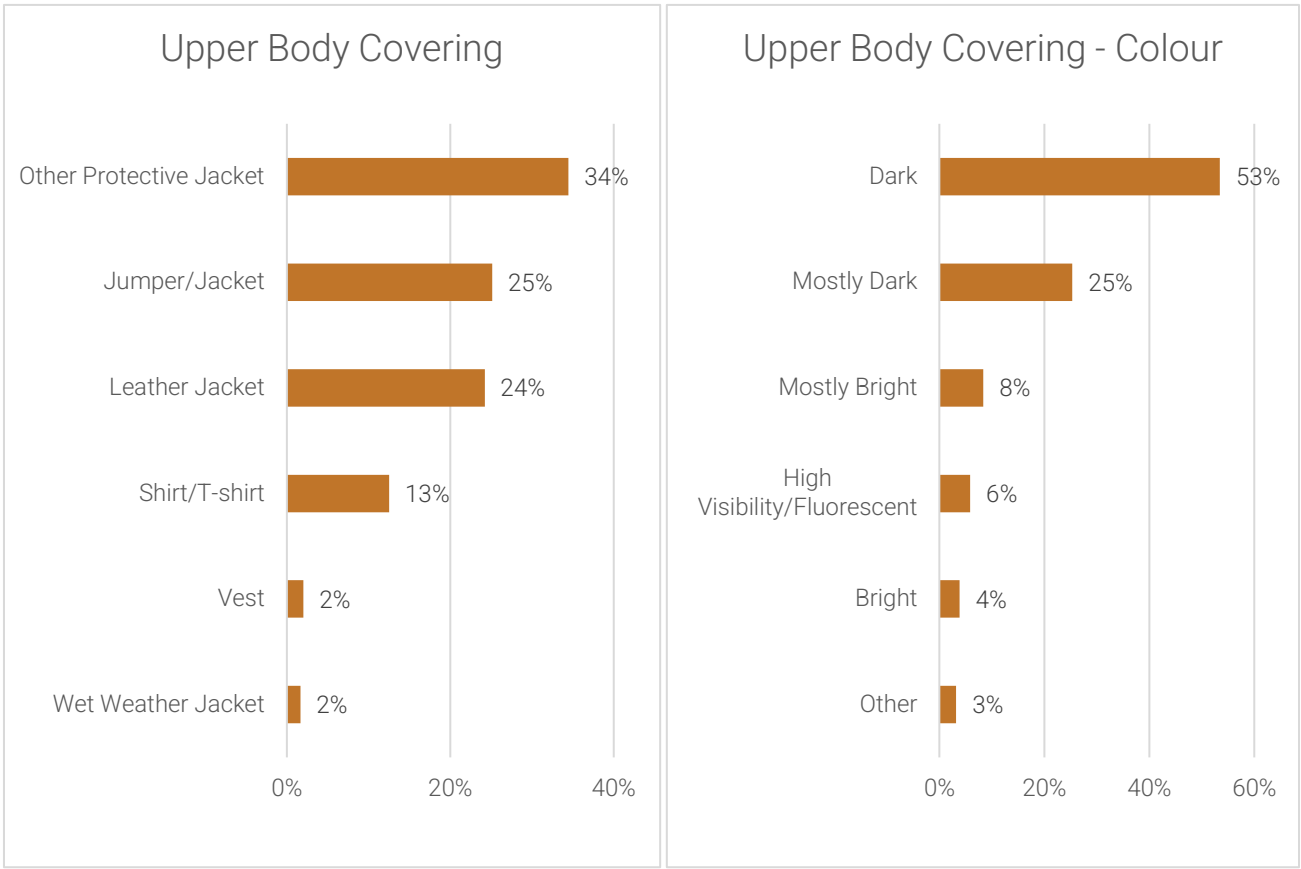
Over half of all motorcyclists observed were wearing leather jackets (24%) or other protective jackets (34%; Figure 4.5). Other protective jackets were defined as:

- Purpose made motorcycle jackets
- Materials such as Gore-Tex or treated canvas (not shiny like leather)
- Fitted waste and sleeves, but often longer covering hips
- Covered zips or buttons

Three-quarters of motorcyclists observed were wearing dark (53%) or mostly dark (25%) upper body coverings (Figure 4.5).

Figure 4.5: Upper Body Covering and Colour

UPPER BODY COVERING & COLOUR
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

Table 4.7 shows the upper body covering worn by each general area and type of motorcycle. Motorcyclists observed in Northern Sydney (69%) and Outer Metro areas (70%) were most likely to wear leather or other protective jackets while those in Inner Sydney (64%) were most likely to wear non-protective upper body clothing

In terms of motorcycle types, cruising (74%), sports (71%) and traditional (64%) motorcycles were most likely to wear leather or other protective jackets. Scooter (73%) and road trail bike (50%) and were most likely to wear non-protective upper body clothing.

Table 4.7: Upper Body Covering by General Area & Motorcycle Type

UPPER BODY COVERING
BASE: MOTORCYCLES N=2,714
Note: row % are shown with statistics testing between general area and type of motorcycle

	LEATHER & OTHER PROTECTIVE JACKET	JUMPER/ JACKET & SHIRT/T-SHIRT & VEST	WET WEATHER JACKET
GENERAL AREA			
Inner Sydney n=470	35% ↓	64% ↑	1%
Northern Sydney n=502	69% ↑	31% ↓	1%
Southern Sydney n=464	58%	40%	2%
Western Sydney n=178	55%	44%	1%
Outer Metro n=350	70% ↑	29% ↓	1%
Coastal NSW n=390	63%	36%	1%
Inland NSW n=360	63%	32% ↓	6% ↑
TYPE OF MOTORCYCLE			
Sports n=495	71% ↑	27% ↓	2%
Touring n=351	74% ↑	23% ↓	3% ↑
Cruising n=391	63%	35% ↓	3%
Traditional/Naked Bike n=764	64% ↑	35% ↓	1%
Road Trail Bike n=190	49% ↓	50% ↑	1%
Scooter n=477	26% ↓	73% ↑	1%
Postie/Police/Other n=46	61%	39%	0%
Total n=2,714	59%	40%	2%

4. DETAILED FINDINGS

Table 4.8 shows the colours observed on motorcyclists' upper body. Overall, 79% of motorcyclists wore dark or mostly dark colours with those on the Central Coast (86%) and riding sports (85%) and cruising (85%) motorcycles being most likely to wear dark or mostly dark clothing. Scooter and road trail bike riders (25% each) were most likely to wear brighter colours.

Table 4.8: Upper Body Colour by General Area & Motorcycle Type

UPPER BODY COLOUR
BASE: MOTORCYCLES N=2,714
Excludes "undetermined" n=5 codes
Note: row % are shown with statistics testing between general area and type of motorcycle

	DARK & MOSTLY DARK	HIGH VIS& BRIGHT & MOSTLY BRIGHT	OTHER
GENERAL AREA			
Inner Sydney n=470	72% ↓	21%	8% ↑
Northern Sydney n=502	79%	16%	5%
Southern Sydney n=464	78%	22%	0% ↓
Western Sydney n=178	74%	22%	4%
Outer Metro n=350	80%	19%	1%
Coastal NSW n=390	86% ↑	13% ↓	1% ↓
Inland NSW n=360	81%	15%	4%
TYPE OF MOTORCYCLE			
Sports n=495	85% ↑	13% ↓	1% ↓
Touring n=351	81%	18%	1% ↓
Cruising n=391	86% ↑	12% ↓	2%
Traditional/Naked Bike n=764	81%	16%	4%
Road Trail Bike n=190	73%	25% ↑	2%
Scooter n=477	68% ↓	25% ↑	8% ↑
Postie/Police/Other n=46	30% ↓	70% ↑	0%
Total n=2,714	79%	18%	3%

4. DETAILED FINDINGS

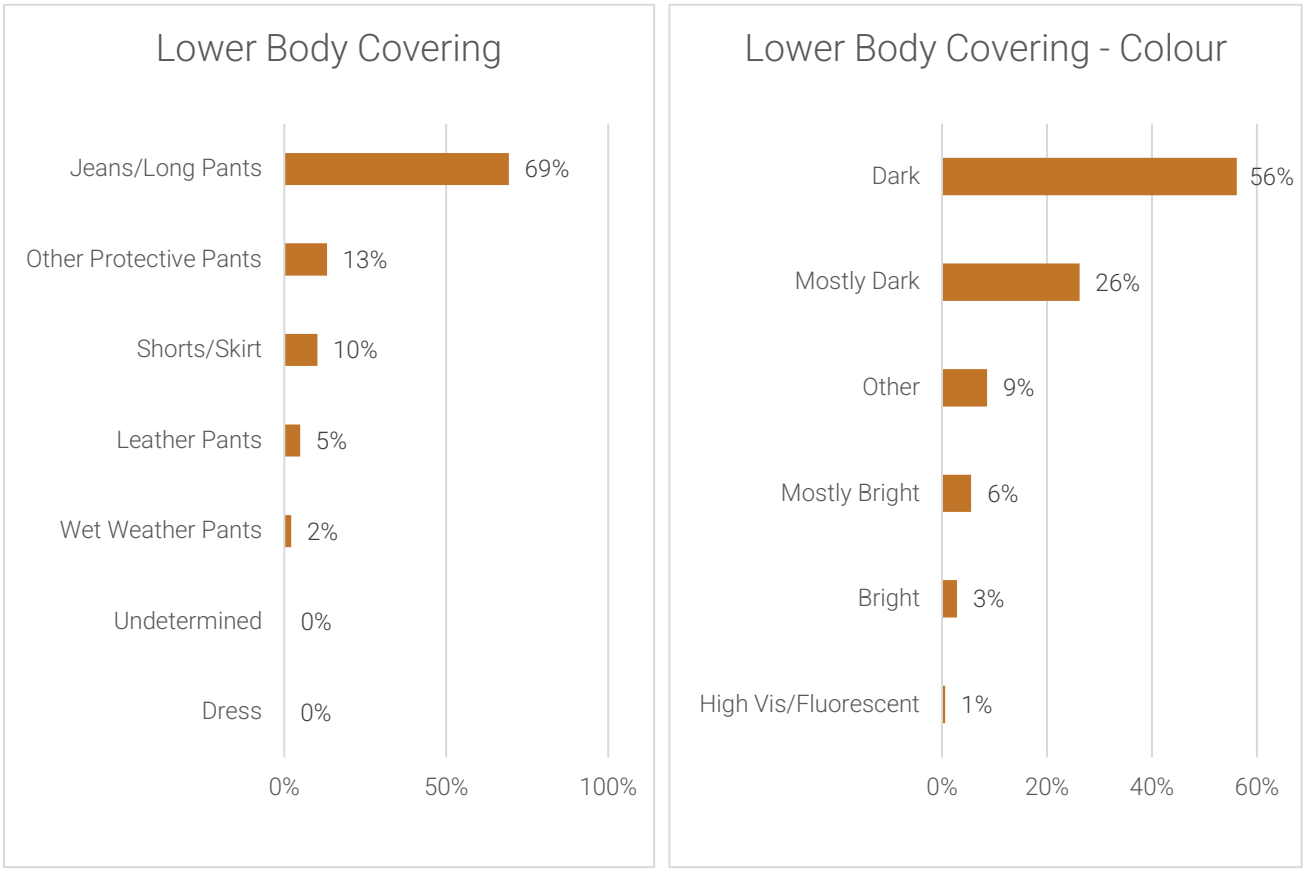
Over two-thirds of motorcyclists observed were wearing jeans or long pants (69%) with 18% wearing either leather or other protective pants (Figure 4.6). Jeans or long pants were defined as not purpose made for motorcycle riding including denim and other cloth however some may have been protective jeans as distinguishing between protective and non-protective jeans or long pants from the footpath is challenging. Other protective pants were defined as:

- Purpose made motorcycle pants
- Materials such as Gore-Tex or treated canvas-not shiny like leather
- Fitted and padded

Over four in five motorcyclists observed were wearing dark (56%) or mostly dark (26%) lower body coverings (Figure 4.6).

Figure 4.6: Lower Body Covering and Colour

LOWER BODY COVERING & COLOUR
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

Table 4.9 shows the lower body coverings by general area and location. Motorcyclists most likely to wear leather or other protective pants were those observed in Southern Sydney (31%), Coastal NSW (31%) and Outer Metro areas (27%) and those riding touring (30%), sports (26%) and cruising (24%) motorcycles. Those most likely not to be wearing protective or leather pants were those observed in Inner Sydney (98%), Northern Sydney (90%) and Western Sydney (88%) and those riding traditional/naked bikes (86%) and scooters (97%).

Table 4.9: Lower Body Covering by General Area & Motorcycle Type

LOWER BODY COVERING
BASE: MOTORCYCLES N=2,714
Excludes undetermined n=5
Note: row % are shown with statistics testing between general area and type of motorcycle

	LEATHER & OTHER PROTECTIVE PANTS	JEANS/LONG PANTS	SHORTS/SKIRT & DRESS	WET WEATHER PANTS
GENERAL AREA				
Inner Sydney n=470	2% ↓	74% ↑	24% ↑	0% ↓
Northern Sydney n=502	10% ↓	82% ↑	7% ↓	1%
Southern Sydney n=464	31% ↑	58% ↓	9%	2%
Western Sydney n=178	12% ↓	81% ↑	7%	0%
Outer Metro n=350	27% ↑	66%	6% ↓	1%
Coastal NSW n=390	31% ↑	62% ↓	7% ↓	0% ↓
Inland NSW n=360	15%	68%	7%	10% ↑
TYPE OF MOTORCYCLE				
Sports n=495	26% ↑	63% ↓	9%	1%
Touring n=351	30% ↑	59% ↓	4% ↓	6% ↑
Cruising n=391	24% ↑	66%	7%	3%
Traditional/Naked Bike n=764	14% ↓	78% ↑	7% ↓	1%
Road Trail Bike n=190	17%	66%	15% ↑	2%
Scooter n=477	3% ↓	75% ↑	22% ↑	1%
Postie/Police/Other n=46	23%	64%	9%	5%
Total n-2,714	18%	70%	10%	2%

4. DETAILED FINDINGS

Table 4.10 shows the majority of motorcyclists in all areas and riding all types of motorcycles wore dark or mostly dark colours on their lower body. Those most likely to wear other colours (including "road neutral" such as light blue and grey) were those in Inner Sydney (24%) and scooter riders (20%).

Table 4.10: Lower Body Colour by General Area & Motorcycle Type

LOWER BODY COLOUR
BASE: MOTORCYCLES N=2,714
Note: row % are shown with statistics testing between general area and type of motorcycle

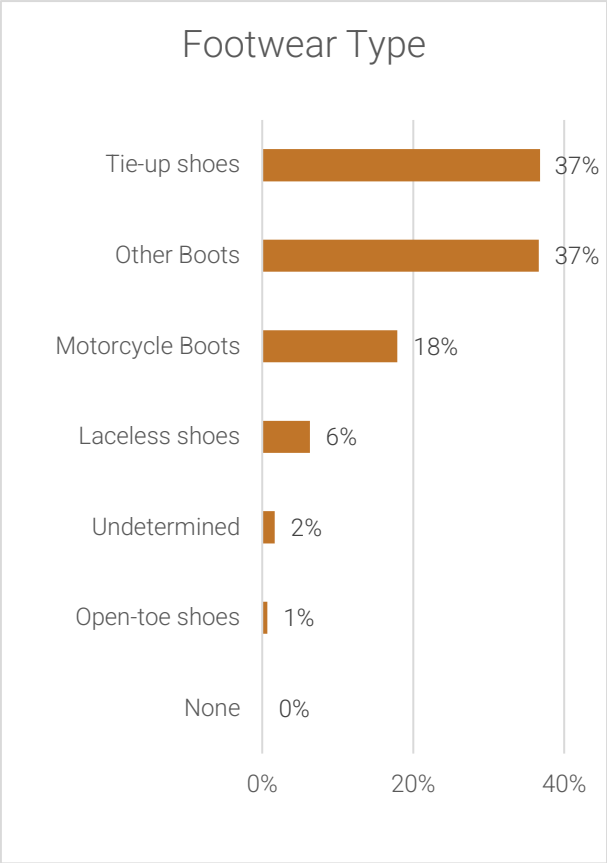
	DARK & MOSTLY DARK	HIGH VIS & BRIGHT & MOSTLY BRIGHT	OTHER
GENERAL AREA			
Inner Sydney n=470	68% ↓	8%	24% ↑
Northern Sydney n=502	78% ↓	12% ↑	10%
Southern Sydney n=464	91% ↑	9%	0% ↓
Western Sydney n=178	84%	10%	7%
Outer Metro n=350	80%	9%	11%
Coastal NSW n=390	88% ↑	12%	1% ↓
Inland NSW n=360	91% ↑	4% ↓	5% ↓
TYPE OF MOTORCYCLE			
Sports n=495	88% ↑	6%	6% ↓
Touring n=351	85%	11%	4% ↓
Cruising n=391	90% ↑	5% ↓	5% ↓
Traditional/Naked Bike n=764	83%	9%	8%
Road Trail Bike n=190	83%	11%	6%
Scooter n=477	69% ↓	11%	20% ↑
Postie/Police/Other n=46	67% ↓	30% ↑	2%
Total n=2,714	82%	9%	9%

4. DETAILED FINDINGS

Figure 4.7 shows that most motorcyclists were observed wearing either tie-up shoes (37%) or other boots (37%) with 18% wearing purpose made motorcycle boots. Note that tie-up shoes included sports and street shoes and other boots included hiking, work and fashion boots.

Figure 4.7: Footwear Type

FOOTWEAR TYPE
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

Motorcyclists observed in Inland NSW (28%), Southern Sydney (25%) and Coastal NSW (24%) and those on touring (36%), cruising (30%) and sports (29%) bikes were most likely to be wearing purpose made motorcycle boots (Table 4.11).

Table 4.11: Footwear by General Area & Location

FOOTWEAR
BASE: MOTORCYCLES N=2,669
Excludes undetermined n=45
Note: row % are shown with statistics testing between general area and type of motorcycle

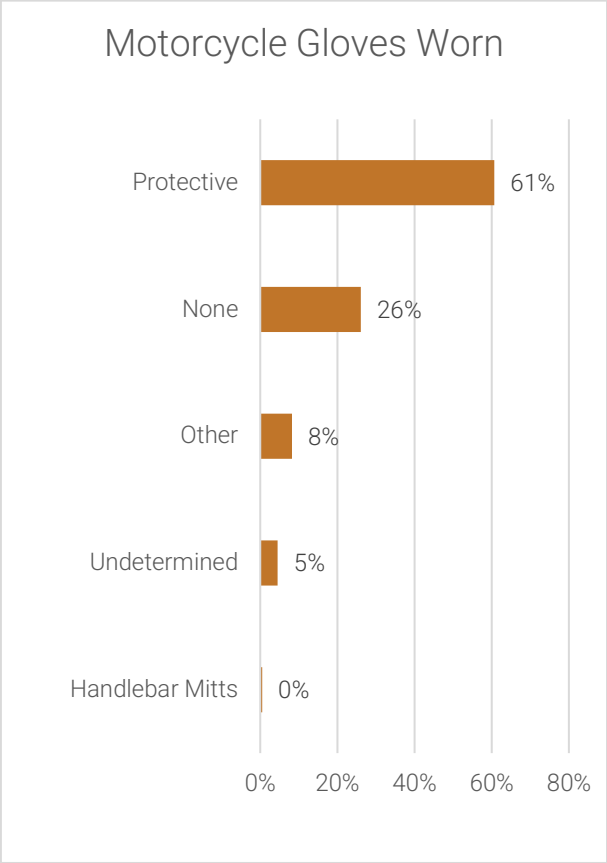
	MOTOR-CYCLE BOOTS	OTHER BOOTS	TIE-UP SHOES	LACELESS SHOES	OPEN-TOE SHOES	NONE
GENERAL AREA						
Inner Sydney n=470	10% ↓	17% ↓	58% ↑	13% ↑	2% ↑	0%
Northern Sydney n=502	9% ↓	30% ↓	52% ↑	7%	1%	0%
Southern Sydney n=455	25% ↑	37%	35%	3% ↓	0%	0%
Western Sydney n=177	10% ↓	48% ↑	25% ↓	17% ↑	0%	1%
Outer Metro n=337	22%	54% ↑	23% ↓	1% ↓	0%	0%
Coastal NSW n=377	24% ↑	55% ↑	19% ↓	1% ↓	0%	0%
Inland NSW n=351	28% ↑	34%	31% ↓	6%	0%	0%
TYPE OF MOTORCYCLE						
Sports n=482	29% ↑	38%	30% ↓	3% ↓	0%	0%
Touring n=344	36% ↑	39%	20% ↓	5%	0%	0%
Cruising n=386	30% ↑	43% ↑	22% ↓	4%	1%	0%
Traditional/Naked Bike n=749	11% ↓	44% ↑	40%	6%	0% ↓	0%
Road Trail Bike n=188	9% ↓	51% ↑	34%	7%	0%	0%
Scooter n=476	0% ↓	14% ↓	69% ↑	13% ↑	3% ↑	0%
Postie/Police/Other n=44	18%	55% ↑	18% ↓	9%	0%	0%
Total n=2,669	18%	37%	37%	6%	1	0%

4. DETAILED FINDINGS

Nearly two-thirds of motorcyclists were observed wearing purpose made motorcycle gloves (61%), however 26% were not wearing any gloves and 8% were wearing other types of glove (Figure 4.8). Other gloves were defined as any non-padded, fashion gloves or mittens. Observers saw a number of motorcyclists with fingerless gloves which were coded as 'other'. We note that fingerless protective motorcycle gloves are available but are possibly difficult to distinguish as protective at a distance.

Figure 4.8: Motorcycle Gloves Worn

MOTORCYCLE GLOVES WORN
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

Table 4.12 shows that motorcyclists observed in Northern Sydney (78%), Southern Sydney (73%) and Inland NSW (73%) were most likely to wear protective gloves as were motorcyclists on sports (81%), touring (75%) and traditional (70%) motorcycles.

Motorcyclists most likely to wear no gloves included those observed in Inner Sydney (46%) and Western Sydney (36%) and those riding scooters (62%).

Table 4.12: Motorcycle Gloves by General Area & Location

MOTORCYCLE GLOVES
BASE: MOTORCYCLES N=2,591
Excludes undetermined n=123
Note: row % are shown with statistics testing between general area and type of motorcycle

	PROTECTIVE	OTHER	HANDLEBAR MITTS	NONE
GENERAL AREA				
Inner Sydney n=470	41% ↓	12% ↑	1% ↑	46% ↑
Northern Sydney n=494	78% ↑	3% ↓	1%	18% ↓
Southern Sydney n=433	73% ↑	1% ↓	0%	26%
Western Sydney n=167	62%	2% ↓	0%	36% ↑
Outer Metro n=317	62%	15% ↑	0%	23%
Coastal NSW n=359	55% ↓	26% ↑	0%	19% ↓
Inland NSW n=351	73% ↑	3% ↓	0%	25%
TYPE OF MOTORCYCLE				
Sports n=474	81% ↑	4% ↓	0%	15% ↓
Touring n=344	75% ↑	7%	0%	17% ↓
Cruising n=374	66%	10%	0%	24%
Traditional/Naked Bike n=726	70% ↑	10%	0%	20% ↓
Road Trail Bike n=167	56%	17% ↑	0%	27%
Scooter n=462	28% ↓	8%	2% ↑	62% ↑
Postie/Police/Other n=44	52%	14%	0%	34%
Total n=2,591	64%	9%	1%	27%

4. DETAILED FINDINGS

Table 4.13 shows the type and colour of clothing motorcyclists wore by weather conditions. Motorcyclists were least likely to be observed wearing leather or other protective jackets (57%) and pants (17%) in fine weather.

Table 4.13: Weather Conditions by Body Cover & Colour

WEATHER CONDITIONS
BASE: MOTORCYCLES
Excludes undetermined
Note: column % are shown with statistics testing between weather type

	FINE	MIST/ LIGHT RAIN	PREVIOUS RAIN	EXPECTED RAIN
UPPER BODY COVER				
Leather + Other Protective	57% ↓	73% ↑	65% ↑	65% ↑
Non-Protective	42% ↑	21% ↓	25% ↓	29% ↓
Wet Weather	1% ↓	6% ↑	10% ↑	6% ↑
UPPER BODY COLOUR				
Dark + Mostly Dark	78%	80% ↑	89%	83%
Bright + Mostly Bright	18%	18%	10% ↓	13% ↓
Other	3%	2%	1%	4%
LOWER BODY COVER				
Leather + Other Protective	17% ↓	36% ↑	23%	27% ↑
Non-Protective	83% ↑	54% ↓	65% ↓	68% ↓
Wet Weather	1% ↓	10% ↑	12% ↑	6% ↑
LOWER BODY COLOUR				
Dark + Mostly Dark	82% ↓	85%	90% ↑	88% ↑
Bright + Mostly Bright	9%	12%	5% ↓	7% ↑
Other	9% ↑	3% ↓	5%	5% ↓

4. DETAILED FINDINGS

Table 4.14 shows the footwear and gloves motorcyclists wore by weather conditions. Motorcyclists were likely to be observed wearing motorcycles boots when there had been previous rain (32%) or rain was expected (28%) and less likely to wear protective gloves in fine weather (62%). These differences were statistically significant.

Table 4.14: Weather Conditions by Footwear & Gloves

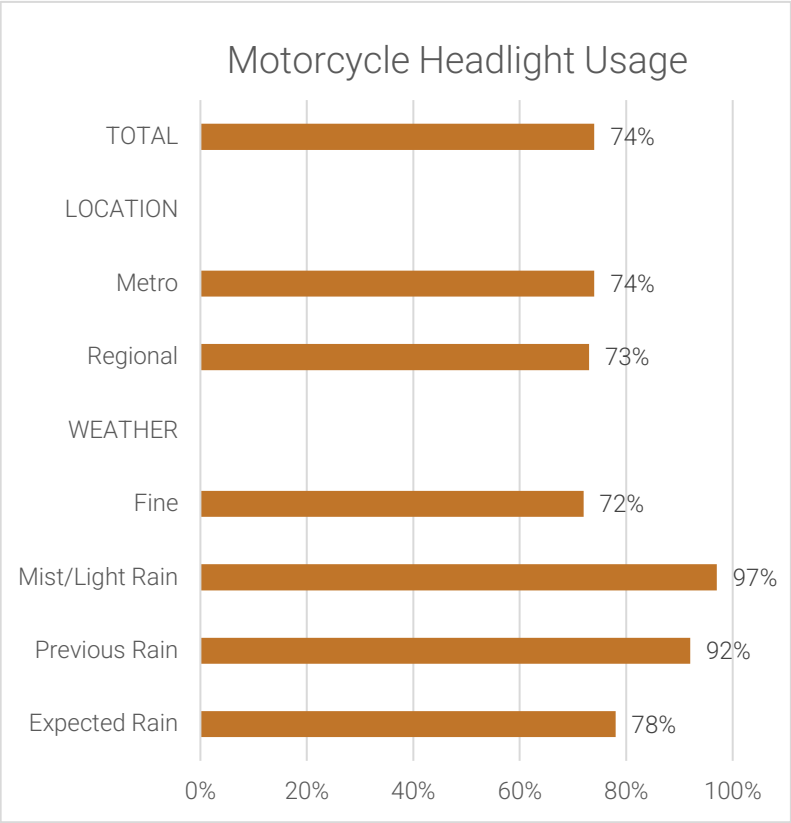
WEATHER CONDITIONS
BASE: MOTORCYCLES
Excludes undetermined
Note: column % are shown with statistics testing between weather type

	FINE	MIST/ LIGHT RAIN	PREVIOUS RAIN	EXPECTED RAIN
FOOTWEAR				
Motorcycle Boots	17% ↓	23%	32% ↑	28% ↑
Other Boots	36% ↓	45%	46% ↑	39%
Tie-up Shoes	39% ↑	29%	20% ↓	27% ↓
Lacelass Shoes	6%	3%	1% ↓	5%
Open-toe Shoes	1%	0%	0%	1%
None	0%	0%	0%	0%
GLOVES				
Protective	62% ↓	80% ↑	86% ↑	71% ↑
Other Gloves	9% ↑	7% ↓	4% ↓	7%
None	29% ↑	13% ↓	9% ↓	22% ↓
Handlebar Mitts	1%	0%	0%	1%

4. DETAILED FINDINGS

Nearly three in four motorcyclists observed had their headlight on (74%). Headlight usage increased to 97% when observed during mist or light rain and to 92% when there had be rain previous to the observation (Figure 4.9).

Figure 4.9: Headlight Usage



HEADLIGHT USAGE
BASE: MOTORCYCLES N=2,714

4. DETAILED FINDINGS

Table 4.15 shows that motorcycles observed in Inland NSW (92%) and Northern Sydney (88%) were most likely to have their headlights on as were those on touring motorcycles (79%).

Table 4.15: Headlights On by General Area & Motorcycle Type

TYPE OF MOTORCYCLE
BASE: MOTORCYCLES N=2,714
Note: row % are shown with statistics testing between general area and type of motorcycle

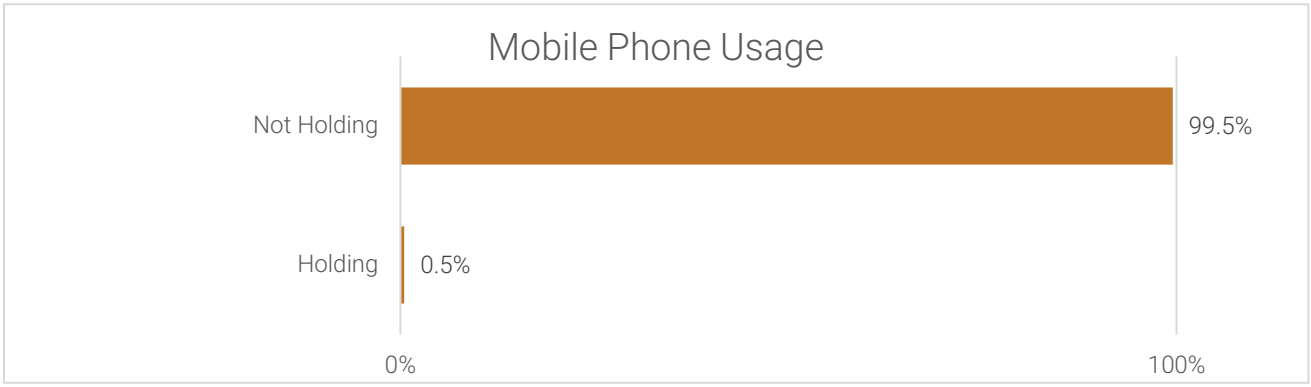
	HEADLIGHTS ON
GENERAL AREA	
Inner Sydney n=470	74%
Northern Sydney n=502	88% ↑
Southern Sydney n=464	77%
Western Sydney n=178	44% ↓
Outer Metro n=350	68% ↓
Coastal NSW n=390	56% ↓
Inland NSW n=360	92% ↑
MOTORCYCLE TYPE	
Sports n=495	76%
Touring n=351	79% ↑
Cruising n=391	76%
Traditional/Naked Bike n=764	77%
Road Trail Bike n=190	64% ↓
Scooter n=477	67% ↓
Postie/Police/Other n=46	83%
Total n=2,714	74%

4. DETAILED FINDINGS

Only 13 of 2,620 (<1%) motorcyclists were observed holding a mobile phone (Figure 4.10).

Figure 4.10: Mobile Phone Usage

MOBILE PHONE USAGE
BASE: MOTORCYCLES RIDERS ONLY N=2,620
Excludes undetermined n=8



4. DETAILED FINDINGS

Table 4.16 shows the only significant difference in mobile phone usage was that those observed in Inland NSW (2%) were more likely to be holding a mobile phone.

Table 4.16: Mobile Phone Usage by General Area & Location

MOBILE PHONE USAGE
BASE: MOTORCYCLES RIDERS ONLY N=2,628
Excludes undetermined n=123
Note: row % are shown with statistics testing between general area and type of motorcycle

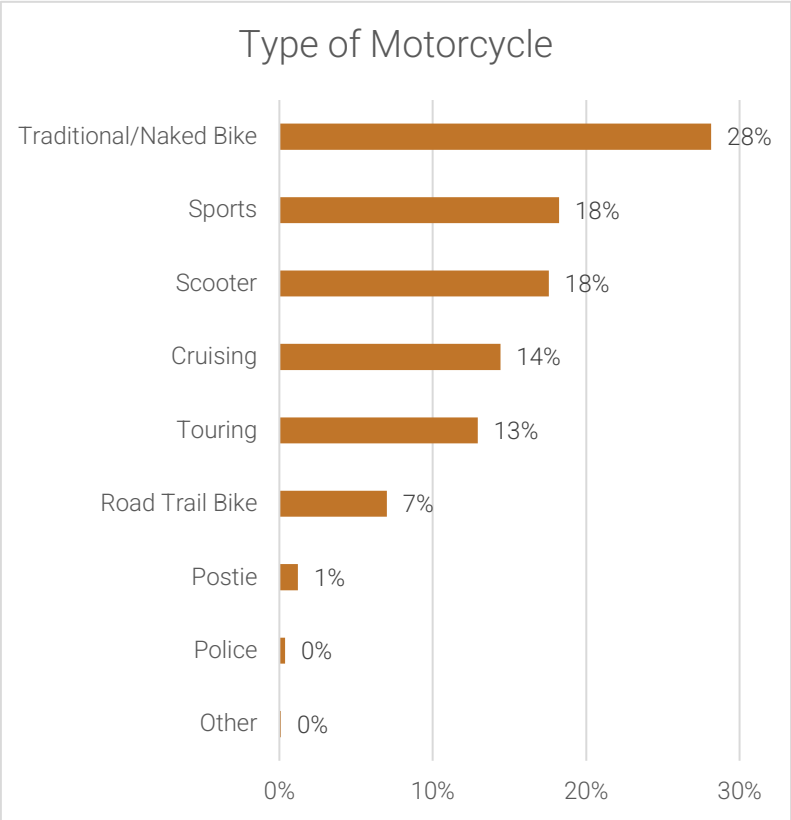
	NOT HOLDING	HOLDING
GENERAL AREA		
Inner Sydney n=458	99%	1%
Northern Sydney n=491	100%	0%
Southern Sydney n=449	100%	0%
Western Sydney n=171	100%	0%
Outer Metro n=338	100%	0%
Coastal NSW n=360	100%	0%
Inland NSW n=353	98% ↓	2% ↑
TYPE OF MOTORCYCLE		
Sports n=477	99%	1%
Touring n=333	100%	0%
Cruising n=368	100%	0%
Traditional/Naked Bike n=742	100%	0%
Road Trail Bike n=187	99%	1%
Scooter n=468	99%	1%
Postie/Police/Other n=45	100%	0%
Total n=2,620	100%	0%

4. DETAILED FINDINGS

Figure 4.11 shows that the most frequently observed motorcycles were traditional motorcycles (28%), followed by sport motorcycles and scooters (18% each).

Figure 4.11: Type of Motorcycle

TYPE OF MOTORCYCLE
BASE: MOTORCYCLES N=2,714



4. DETAILED FINDINGS

The type of motorcycles observed varied by general area with traditional/naked motorcycles being more frequent in Northern Sydney (40%), sports motorcycles being more frequent in Southern Sydney (27%) and scooters being more frequent in Inner Sydney (47%) and Northern Sydney (28%). Table 4.17 shows the frequency of other motorcycle types in each area.

Table 4.17: Type of Motorcycle by General Area

TYPE OF MOTORCYCLE
BASE: MOTORCYCLES N=2,714
Note: row % are shown with statistics testing between general area

	SPORTS	TOURING	CRUISING	TRADITIONAL NAKED BIKE	ROAD TRAIL BIKE	SCOOTER	POSTIE/ POLICE/ OTHER
GENERAL AREA							
Inner Sydney n=470	15%	7% ↓	7% ↓	22% ↓	3% ↓	47% ↑	0% ↓
Northern Sydney n=502	13% ↓	9% ↓	6% ↓	40% ↑	2% ↓	28% ↑	2%
Southern Sydney n=464	27% ↑	10% ↓	15%	27%	5%	15%	1%
Western Sydney n=178	11% ↓	16%	29% ↑	30%	6%	7% ↓	1%
Outer Metro n=350	22%	16%	16%	27%	13% ↑	3% ↓	2%
Coastal NSW n=390	18%	19% ↑	18%	25%	16% ↑	2% ↓	3%
Inland NSW n=360	18%	20% ↑	23% ↑	24%	7%	5% ↓	3%
Total	18%	13%	14%	28%	7%	18%	2%

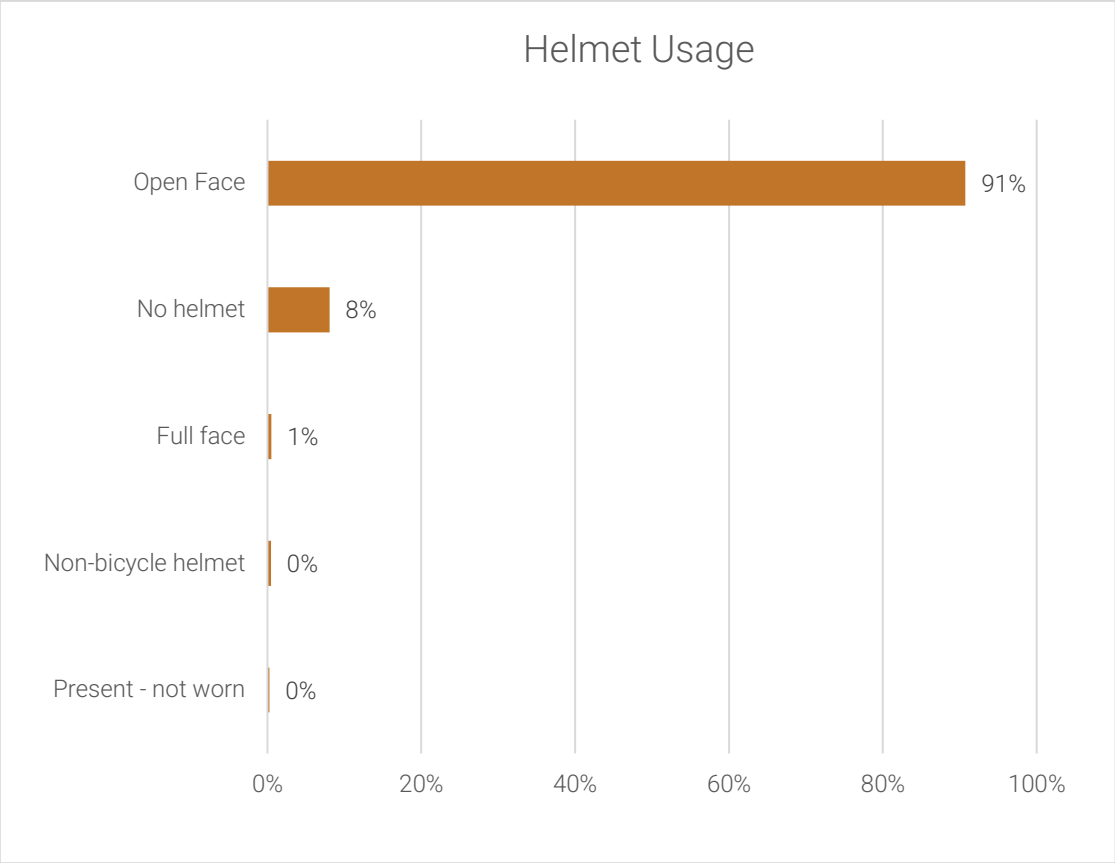
4. DETAILED FINDINGS

4.3. BICYCLES

Overall, more than 9 in 10 of bicyclists observed were wearing either an open face (91%) or full face (1%) bicycle helmet with 8% having no helmet and <1% having a helmet present but not wearing it (Figure 4.12; rounding accounts for sum over 100%). Compliance was generally consistent across locations, with only three locations having less than an 80% helmet wearing rate; Jervis Bay (79%), Manly (77%) and Tamworth (66%). See Appendix C for bicycle helmet wearing by general area and location.

Figure 4.12: Helmet Usage

HELMET USAGE
BASE: BICYCLES N=2,901



4. DETAILED FINDINGS

Table 4.18 shows that bicycle helmet usage was highest among those observed in metro areas (93% compared to 82% in regional areas), males (92% compared to 88% of females), those 18 plus in age (93% compared to 76% of 11-17 year olds). Note, bicyclists' age is based on the observers' best estimate. Bicyclists on dedicated cycleways (98%) and in mixed traffic (94%) were also more likely to be wearing a helmet.

Table 4.18: Helmet Usage by Location, Gender, Age & Path Type

HELMET USAGE
BASE: BICYCLES N=2,901

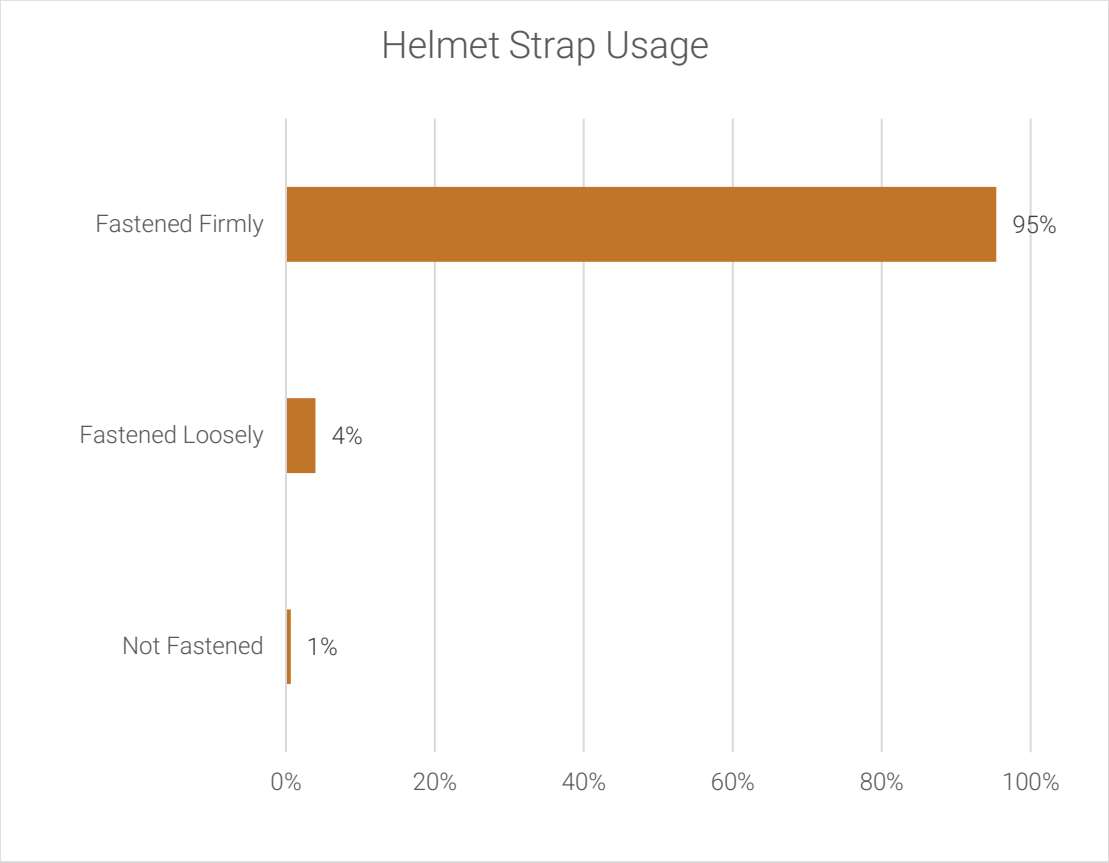
	OPEN OR FULL FACE HELMET WORN
LOCATION	
Metro n=2,320	93% ↑
Regional n=581	82% ↓
ASSUMED GENDER	
Male n=2,272	92% ↑
Female n=626	88% ↓
Unsure n=3	100%
ESTIMATED AGE	
10 and under n=157	96%
11-17 n=259	76% ↓
18 plus n=2,485	93% ↑
PATH TYPE	
Shared Path n=1,979	91%
Dedicated cycleway n=232	98% ↑
Road Shoulder n=56	98%
Mixed Traffic n=348	94% ↑
Adjacent to shared path or cycleway n=107	82%
Normal footpath n=179	82% ↓
TOTAL n=2,901	91%

4. DETAILED FINDINGS

Of the bicyclists observed wearing a bicycle helmet, 95% had the strap firmly fastened, 4% were loosely fastened and 1% not fastened. (Figure 4.13).

Figure 4.13: Helmet Strap Usage

HELMET STRAP USAGE
BASE: BICYCLIST WEARING A HELMET N=2,641
Excludes undetermined n=11 and no helmet n=249



4. DETAILED FINDINGS

Table 4.19 shows that observed bicyclists estimated to be 18 years of age and older (96%) were most likely to have their helmet strap firmly fastened.

Table 4.19: Helmet Strap Usage by Location, Gender, Age & Path Type

HELMET STRAP USAGE
BASE: BICYCLISTS WEARING A HELMET ONLY N=2,641
Excludes undetermined n=11 and no helmet n=249

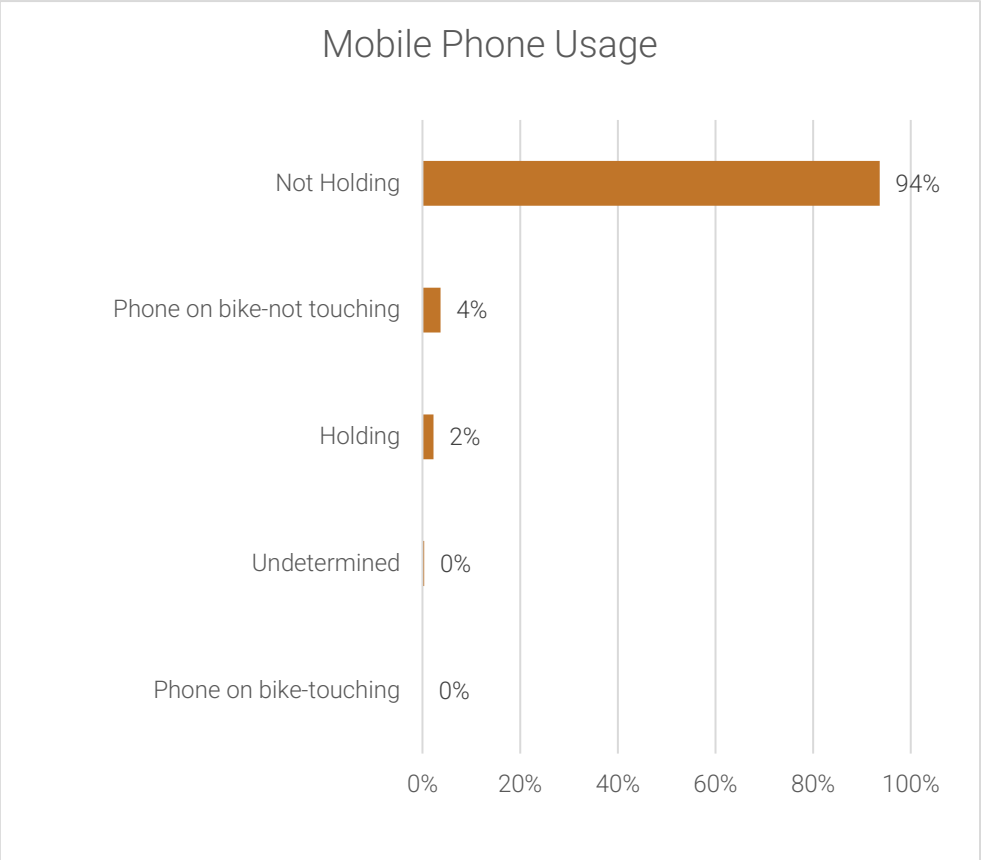
	FASTENED FIRMLY
LOCATION	
Metro n=2,320	96%
Regional n=581	93%
ASSUMED GENDER	
Male n=2,272	96%
Female n=626	94%
Unsure n=3	100%
ESTIMATED AGE	
10 and under n=157	93%
11-17 n=259	92% ↓
18 plus n=2,485	96% ↑
PATH TYPE	
Shared Path n=1,979	96%
Dedicated cycleway n=232	97%
Road Shoulder n=56	96%
Mixed Traffic n=348	98%
Adjacent to shared path or cycleway n=107	91%
Normal footpath n=179	86% ↓
TOTAL n=2,614	95%

4. DETAILED FINDINGS

Over nine in ten bicyclists observed were not holding a mobile phone (94%) or had a phone attached to their bicycle (4%). Only 2% were observed holding a mobile and <1% touching a phone that was attached to their handle bars (Figure 4.14).

Figure 4.14: Mobile Phone Usage

MOBILE PHONE USAGE
BASE: BICYCLES N=2,901



4. DETAILED FINDINGS

Table 4.20 shows there was little difference in mobile phone usage by bicyclists, with only those observed in regional areas (96%) being more likely to not be holding a phone than those in metro areas (93%).

Table 4.20: Mobile Phone Usage by Location, Gender, Age & Path Type

MOBILE PHONE USAGE
BASE: BICYCLES N=2,901

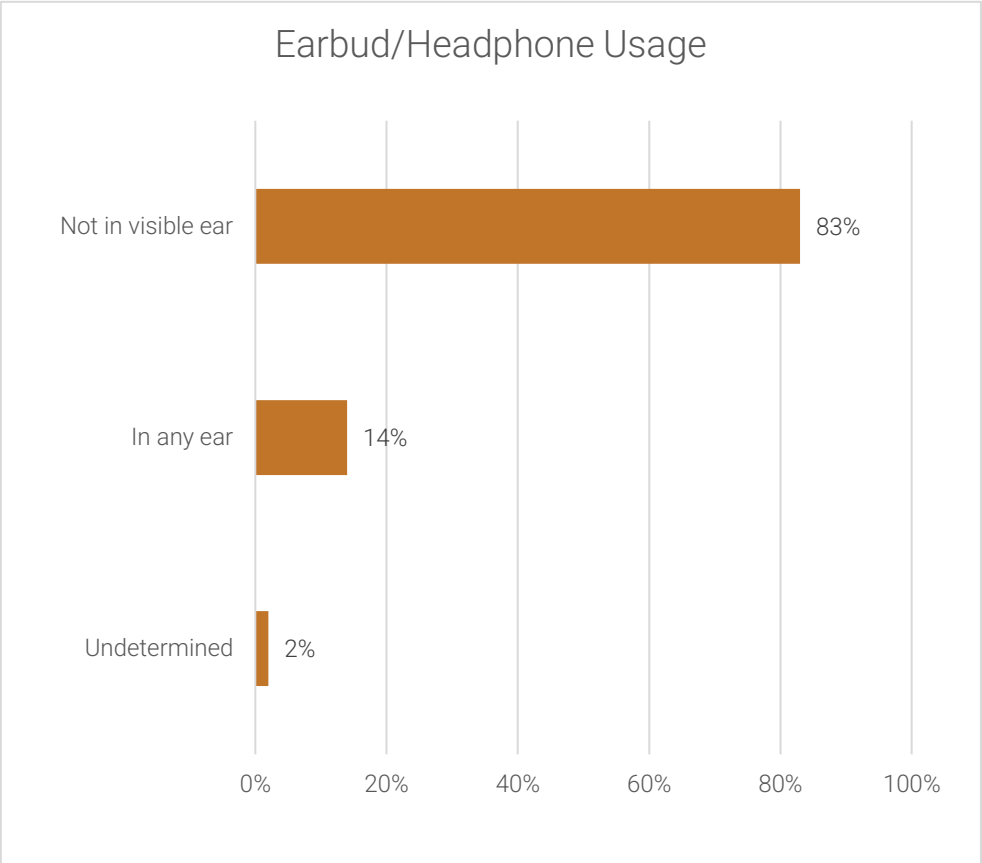
	NOT HOLDING
LOCATION	
Metro n=2,320	93% ↓
Regional n=581	96% ↑
ASSUMED GENDER	
Male n=2,272	94%
Female n=626	93%
Unsure n=3	100%
ESTIMATED AGE	
10 and under n=157	97%
11-17 n=259	95%
18 plus n=2,485	93%
PATH TYPE	
Shared Path n=1,979	93%
Dedicated cycleway n=232	94%
Road Shoulder n=56	98%
Mixed Traffic n=348	96%
Adjacent to shared path or cycleway n=107	93%
Normal footpath n=179	89%
TOTAL n=2,901	94%

4. DETAILED FINDINGS

Figure 4.15 shows that 83% of bicyclists observed did not have an earbud or headphone in an ear visible to the observer with 14% of bicyclists having an earbud or headphone visible to the observers.

Figure 4.15: Earbud/Headphone Usage

EARBUD/HEADPHONE USAGE
BASE: BICYCLES N=2,901



Note: "Not in visible ear" category is where observers could only see one of the cyclist's ears and could not see an earbud or headphone in use in that ear.

4. DETAILED FINDINGS

A visible earbud or headphone were most likely to be observed at metro locations (16% compared to 8 % in regional areas 8%), among 18 plus year olds (15%) and less likely to be observed in mixed traffic (9%; Table 4.21).

Table 4.21: Earbud/Headphone Usage by Location, Gender, Age & Path Type

EARBUD/HEADPHONE USAGE
BASE: BICYCLES N=2,901

	VISIBLE EARBUD/HEADPHONE
LOCATION	
Metro n=2,320	16% ↑
Regional n=581	8% ↓
ASSUMED GENDER	
Male n=2,272	14%
Female n=626	16%
Unsure n=3	0%
ESTIMATED AGE	
10 and under n=157	5% ↓
11-17 n=259	9% ↓
18 plus n=2,485	15% ↑
PATH TYPE	
Shared Path n=1,979	15%
Dedicated cycleway n=232	17%
Road Shoulder n=56	7%
Mixed Traffic n=348	9% ↓
Adjacent to shared path or cycleway n=107	11%
Normal footpath n=179	16%
TOTAL n=2,901	14%

5. SUMMARY & DISCUSSION

5.1. LIGHT VEHICLES

In summary, light vehicle observations showed that:

- 99% of light vehicle drivers and front seat passengers wore their **seat belts correctly**
- 97% of light vehicle drivers were **not** holding a **mobile phone**

There were few differences in seat belt and mobile phone usage rates among groups with the exception of seat belt usage at the Southern Sydney locations which had a higher rate of "worn-undetermined" (9%) and "worn-not conforming" (3%; See Appendix B). This may be explained by a couple of factors. Firstly, the same observers worked at both locations and reported a high number of tinted windows and were reluctant to code as "worn-conforming" if they had any doubts. Secondly, there have been press reports of community back lash to hooning and anti-social behaviour at the Bay Street location in particular. The observers reported seeing several drivers with the seat belt draped under their arm resulting in 4% "worn-not conforming" at Brighton-Le-Sands and 2% at Kirrawee.

5.2. MOTORCYCLES

In summary, motorcycle observations showed that:

- 99% of riders and pillions wore a **helmet** and 65% of helmets were dark or very dark
- 59% of motorcyclists wore leather or other protective jackets and 79% wore dark or very dark clothing on their **upper body**
- 69% of motorcyclists wore jeans or long pants (although some of these may have been protective jeans or pants) and 82% wore dark or very dark clothing on their **lower body**
- 37% of motorcyclists wore tie-up shoes and 37% wore other (non-motorcycle) **boots**
- 61% of motorcyclists wore purpose made motorcycle **gloves**
- 74% of motorcyclists had their **headlights** on
- Less than 1% of motorcyclists (13 of 2,620 observed) were observed holding a **mobile phone**

As a general observation there are two areas of concern:

- The majority of all motorcyclists wore dark or mostly dark clothing on both their upper and lower body. As motorcyclists are considered vulnerable road users, visibility to other road users is important and more emphasis should be placed on wearing clothing that contributes to visibility.
- Scooter riders were less likely to be observed wearing protective clothing, footwear and gloves than other motorcyclists. While scooters are more likely to be travelling at low speeds and going shorter distances, they are also likely to be travelling in high traffic areas and as vulnerable road users, emphasis is needed to educate scooter riders of the benefits of protective clothing.

5. SUMMARY & DISCUSSION

5.3. BICYCLES

In summary, bicycle observations showed that:

- 91% of bicyclists wore a **helmet** with a strap firmly (87%) or loosely (4%) fastened
- 98% of bicyclists were **not** holding a **mobile phone** or had it mounted to their bike
- 83% of bicyclists did not have an **earbud or headphone** in an ear visible to the observer

There were several differences in helmet usage between groups with regional bicyclists (82%), females (88%), those estimated to be 11-17 years old (76%) and those riding on a normal footpath (82%) being less likely to be wearing a helmet.

6. PROJECT LEARNING & RECOMMENDATIONS

As this was the first time the study has been conducted in this form, we encouraged observers to provide feedback on how the methodology and data collection instruments could be improved. Accordingly, we make the following suggestions to be considered for future research projects.

6.1. SITE SELECTION

- The original target was for n=100 observations per location, this was easily achieved within the allocated shifts with the exception of bicycles in some areas including Berkeley, Tamworth, Bathurst and Nowra. The low achieving sites were successfully replaced by identifying more heavily used cycle paths in consultation with locals including bicycle shop owners.
- To broaden the sample, we would suggest:
    - Splitting light vehicle/motorcycle shifts between two nearby locations could result in observations on a wider variety of road types (i.e., main, arterial, side streets). This would likely reduce the overall sample size, but increase the diversity.
    - Scheduling of shifts at different times of day considering the direction of the sun to reduce the glare
    - Bicycle shifts could also be split moving between commuter locations during peak, more recreational areas out of peak and to school areas before/after school hours to observe a variety of bicyclists.

6.2. LIGHT VEHICLES

- Light vehicle observations were the easiest and fastest to complete as demonstrated by the high sample numbers achieved therefore there may be scope to add additional observation items at the cost of sample size. Also, at very busy locations we suggest limiting the sample to 2 or 3 vehicles per light change and stressing that observers concentrate on the quality of the observation and data entry rather than attempting to observe every vehicle. Also, avoiding vehicles with tinted windows should be considered.
- Observers felt that back seat passengers could be observable with the main issues being tinted windows/sun reflection, inability to see into two door and hatch back type cars and having time to record the driver, front seat passenger and back seat passengers. That later issue could be addressed by giving back seat passengers priority over front seat passengers when present. The concern with child seats is that drivers were somewhat suspicious of being observed and might be even more suspicious of their children being observed, additionally it may be difficult to determine if the child is appropriately fastened in.

6.3. MOTORCYCLES

- We suggest a review of the types of motorcycles on the coding list. It has been suggested that endurance and adventure motorcycles, along with trike and side-cars should be added to the list.
- The lower body code of jeans/long pants should be separated as protective motorcycle jeans are available although difficult to distinguish from regular jeans. We also suggest adding an example of protective jeans to the training document examples as they may be distinguishable by the extra stitching or obvious padding in some cases. Additionally, finer distinctions could be

made for upper body clothes such as a vest/sleeveless top to indicate bare arms rather than a vest over other clothing.

- A number of fingerless gloves were observed and coded as other gloves. We suggest adding some obvious examples of fingerless protective gloves to the examples of motorcycles gloves and to instruct observers to code them in that category if protective knuckle guards are obvious. We suggest adding codes for reflective strips/patches to the helmet and clothing categories such 'Mostly Dark with reflective stripes/patches' and 'Mostly Bright with reflective stripes/patches'
- Other items that could be recorded include:
    - Temperature range (min, max and humidity during observations)
    - Helmet attachments such as GoPro or camera mounts
    - Obvious food delivery riders based on branded bags or bulky backpacks although like age and gender this would be an estimate

6.4. BICYCLES

- We suggest considering adding bicycle categories, including electric bicycles, foot scooters and electric foot scooters. Also, indicating if the bicycle has a child seat or trailer attachment.
- As with motorcycles obvious food delivery cyclists could be recorded.
- We suggest classifying bicycles with potential categories including recreational, commuter, sports/trainer, child and delivery. This may need to be determined by a mix of type of bike and clothing.

7. APPENDIXES

7.1. APPENDIX A – OBSERVATION ITEMS AND CODES

The observation items and codes for each mode are detailed below:

MOTORCYCLES

Position:
- Rider
- Pillion

Headlight:
- On
- Off

Type of Motorcycle:
- Sports
- Touring
- Cruising
- Traditional/Naked
- Road Trail
- Scooter
- Postie
- Police
- Other

Type of Helmet
- Full face
- Open face
- Dual purpose/motocross
- None
- Undetermined

Colour of Helmet:
- Dark
- Mostly dark
- High vis/fluorescent
- Mostly bright
- Bright
- Other
- No helmet

Upper Body:
- Leather jacket
- Other protective jacket
- Jumper/jacket
- Shirt/t-shirt
- Wet weather jacket
- Vest
- Undetermined
- Dress

Upper Body Colour:
- Dark
- Mostly dark
- High vis/fluorescent
- Mostly bright
- Bright
- Other

Lower Body:
- Leather pants
- Other protective pants
- Jeans/long pants
- Shorts/skirt
- Wet weather pants
- Undetermined
- Dress

Lower Body Colour:
- Dark
- Mostly dark
- High vis/fluorescent
- Mostly bright
- Bright
- Other

Footwear
- Motorcycle boots
- Other boots
- Tie-up shoes
- Laceless shoes
- Open-toe shoes
- None
- Undetermined

Gloves
- Protective
- Other
- Handlebar mites
- None
- Undetermined
- Passenger

Mobile Phone
- Holding
- Not holding
- Undetermined
- Pillion

7. APPENDIXES

LIGHT VEHICLE	BICYCLE
Position: • Driver • Passenger Assumed Gender: • Male • Female • Don't know Seat Belt: • Worn conforming • Worn undetermined • Worn NOT Conforming • Not Worn • Undetermined Mobile Phone • Holding-looking up • Holding-looking down • Not holding • Undetermined • Passenger Licence: • Unrestricted • Learner • Provisional Vehicle Type: • Small-passenger vehicle • Medium-passenger vehicle • Large-passenger vehicle • People mover • SUV-small • SUV-large • Commercial-ute • Commercial-van • Other/undermined Position in Traffic: • Stopped first at light • Stopped behind others • Moving slowly	Assumed Gender: • Male • Female • Don't know Estimated Age: • 10 and under • 11-17 • 18 plus Type of Helmet • Open face • Full face • Non-bicycle helmet • None • Present-not worn Helmet Strap • Fastened firmly • Fastened loosely • Not fastened • Undetermined • No helmet Path Type • Shared path • Dedicated cycleway • Road shoulder • Mixed traffic • Adjacent to shared path or cycleway • Normal footpath Mobile Phone • Holding • Not holding • Undetermined • Phone on boke-touching • Phone on bike-not touching Earbuds/Headphones: • In any ear • Not in visible ear • Undetermined • Commercial-van • Other/undermined

7. APPENDIXES

7.2. APPENDIX B – LIGHT VEHICLE SEAT BELTS WORN BY LOCATION

LOCATION	WORN CONFORMING	WORN-UNDETERMINED	WORN-NOT CONFORMING	NOT WORN	UNDETERMINED	SAMPLE
Anzac Pde & Dacey Ave, Moore Park	97%	1%	1%	1% ↑	0%	366
Victoria Rd & Darling St, Rozelle	99%	0%	0%	0%	0%	466
Epping Rd & Centennial Ave, Lane Cove West	100% ↑	0% ↓	0%	0%	0%	575
Spit Rd & Military Rd, Mosman	99% ↑	1%	0%	0%	0%	796
Pacific Hwy & Berowra Waters Rd, Berowra	99%	0% ↓	0%	1% ↑	0%	624
Acacia Rd & President Ave, Kirrawee	89% ↓	8% ↑	2% ↑	0%	1%	449
The Grand Parade & Bay St, Brighton-Le-Sands	86% ↓	10% ↑	4% ↑	0%	1%	468
The Northern Rd & Maxwell St, Penrith	96% ↓	1%	1%	0%	3% ↑	504
Prospect Hwy & Blacktown Road, Blacktown	100% ↑	0% ↓	0%	0%	0%	673
Princess Highway & Creamery St, Albion Park	98%	1%	1%	0%	1%	968
Newcastle Link Road & Lake Road, Wallsend	99%	0% ↓	0%	0%	1%	473
Pacific Hwy & Coffs Street, Coffs Harbour	95%	2%	2%	1%	1%	151
Princess Hwy & Moss Street, Nowra	99% ↑	1%	0% ↓	0%	0%	1,304
Oxley Hwy & Peel Street, Tamworth	99% ↑	0% ↓	0%	0%	0%	753
Great Western Hwy George Street, Bathurst	99%	0%	0%	0%	0%	203
Sturt Hwy & Docker Street, Wagga Wagga	99% ↑	0% ↓	1%	0%	0%	682
Total	98%	1%	1%	0%	0%	9,455

7. APPENDIXES

GENERAL AREA	WORN CONFORMING	WORN-UNDETERMINED	WORN-NOT CONFORMING	NOT WORN	UNDETERMINED	SAMPLE
Inner Sydney	98%	1%	0%	0% ↑	0%	832
Northern Sydney	99% ↑	0% ↓	0% ↓	0%	0%	1,995
Southern Sydney	87% ↓	9% ↑	3% ↑	0%	1%	917
Western Sydney	98%	0% ↓	1%	0%	1% ↑	1,177
Outer Metro	98%	1% ↓	0%	0%	1%	1,441
Coastal NSW	99% ↑	1%	0%	0%	0%	1,455
Inland NSW	99% ↑	0% ↓	0%	0%	0% ↓	1,638
Total	98%	1%	1%	0%	0%	9,455

7. APPENDIXES

7.3. APPENDIX C – KEY BICYCLE FINDINGS BY LOCATION

LOCATION	BICYCLE HELMET WORN (OPEN OR FULL FACE)	HELMET WITH STRAP FIRMLY OR LOOSELY FASTENED	HOLDING MOBILE PHONE	VISIBLE EARBUD OR HEADPHONE
Anzac Parade Shared Path & Lang Road Shared Path, Moore Park	97% ↑	97% ↑	1%	25% ↑
Victoria Road Shared Path, Rozelle	96% ↑	95%	1%	11%
Sydney Harbor Bridge Cycle Path, Upper Fort St. Millers Point	100% ↑	99% ↑	1%	14%
Delhi Road & Epping Road Shared Path, M2 Hills Motorway Freeway Shoulder, North Ryde	99%	99%	0%	6%
South Steyne Shared Path & Victoria Parade Shared Path, Manly	77% ↓	76% ↓	2%	10%
Berowra Waters Road Shoulder, Berowra	96%	96%	4%	8%
Toronto Parade Mixed Traffic & Waratah Street Shared Path, Sutherland	99% ↑	98% ↑	2%	20%
Cook Park Shared Path and Alice St Road Shoulder, Ramsgate	95%	95%	1%	15%
Mulgoa Road Shared Path at Jamison Road, Penrith	84%	82%	2%	5%
Blacktown Road Shared Path & Lancelot St. Road Shoulder, Seven Hills	83%	75%	25% ↑	17%
M7 Shared Path & Westlink M7 & Freeway Shoulder, Glenwood	100% ↑	100% ↑	1%	24% ↑
Princess Highway Shared Path & Northcliff Drive, Berkeley	100%	100%	0%	0%
Throsby Creek Shared Path & Hannel Street Mixed Traffic, Wickham	95% ↑	94% ↑	4%	12%
Squires Way Shared Path & Stuarts Park Shared Path, North Wollongong	90%	90%	2%	20% ↑
Coastline Cycleway Shared Path, Jervis Bay	79% ↓	79% ↓	1%	0% ↓
Hogbin Drive Shared Path & Harbour Drive Shared Path, Coffs Harbour	92%	89%	15% ↑	34% ↑
Princes Hwy Shared Path & Shoalhaven River Bridge Shared Path, Nowra	84%	84%	0%	5%
Peel River Shared Path & Scott Road (New England Hwy) Shared Path, Tamworth	66% ↓	64% ↓	0%	3% ↓
Great Western Hwy Road Shoulder, Shared Path & Bridge Street Shared Path Bathurst	88%	87%	0%	1% ↓
Total	91%	90%	2%	14%

7. APPENDIXES

GENERAL AREA	OPEN FACE & FULL FACE HELMET WORN	HELMET WITH STRAP FIRMLY OR LOOSELY FASTENED	HOLDING MOBILE PHONE	VISIBLE EARBUD OR HEADPHONE
Inner Sydney	97% ↑	97% ↑	1% ↓	18% ↑
Northern Sydney	84% ↓	83% ↓	2%	9% ↓
Southern Sydney	97% ↑	97% ↑	1%	18%
Western Sydney	95%	94%	3%	19%
Outer Metro	93%	92%	3%	15%
Coastal NSW	84% ↓	83% ↓	6% ↑	12%
Inland NSW	79% ↓	77% ↓	0% ↓	2% ↓
Total	91%	90%	2%	14%

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