

**Submission
No 42a**

INQUIRY INTO HEAVY VEHICLE SAFETY AND USE OF TECHNOLOGY TO IMPROVE ROAD SAFETY

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Transport
for NSW

NSW Government Submission

Staysafe Inquiry into heavy vehicle safety and use of
technology to improve road safety

PART II

Road Toll 1 December 2017 – 31 January 2018

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1 Introduction

As a result of the increasing road toll involving heavy vehicles, in October 2017, the Minister for Roads, Maritime and Freight, the Hon Melinda Pavey MP, requested the Parliamentary Joint Standing Committee on Road Safety (Staysafe) Committee inquire and report into heavy vehicle safety and the potential for technology to improve road safety.

Further to this, on 5 January 2018, the Minister requested the Staysafe Committee extend the terms of reference to investigate the increased road toll over the 2017/2018 Christmas holiday period.

The Terms of Reference for the Inquiry into heavy vehicle safety and the potential for technology to improve road safety include:

1. The management of heavy vehicle driver fatigue and other safety risks through in-vehicle technologies, including benefits, costs, availability and adoption by industry
2. The development of connected and automated vehicle technologies specific for the heavy vehicle industry and opportunities for further development in this space
3. The role of compliance and enforcement in maintaining the safety of heavy vehicles on our roads
4. Heavy vehicle safety strategies implemented in other jurisdictions, both domestically and internationally.
5. Report on the road toll during the period commencing 1 December 2017 through to 31 January 2018.

Due to the data requirements for the additional term of reference, the Staysafe Committee agreed to the NSW Government's response being submitted in two parts:

- Part 1 - Heavy vehicle safety and the potential for technology to improve road safety.
- Part 2 -The road toll during the period commencing 1 December 2017 through to 31 January 2018.

This submission is Part 2 of the NSW Government response to the Inquiry.

2 NSW road toll context overview

In 2017, 392 people lost their lives on NSW roads (provisional data as at 1 January 2018), almost 70 per cent of these fatalities occurred on country roads. Country people are a third of the NSW population, yet consistently account for more than two thirds of deaths on NSW roads. In addition, we see over 12,000 total serious injuries every year as a result of crashes.

As the NSW economy, population, road network and trips continue to grow, there will be increasing exposure to risk across the network as more and more people use our roads. This presents an opportunity to accelerate safety benefits, for example, by designing the latest proven safety features into all new and upgraded roads to keep all road users safe. The NSW vehicle fleet continues to grow each year too. In 2009 there were 4.5 million registered motor vehicles in NSW. By 2017 this had grown by 21 per cent to over 5.4 million.

The preliminary fatality result from the 1 December 2017p-31 January 2018p (Dec17p/Jan18p) period, with 80 fatalities, was the highest for any 1 December- 31 January period (December-January) since 2005/06. It represents a significant increase (41 per cent) in fatalities over the average for the previous four equivalent two-monthly periods.

Speed was the leading contributing factor in Dec17p/Jan18p, while there was an increased proportion of fatigue related fatalities (23 per cent) compared with the previous four December-January periods. There was also an increase in the proportion of driver and passenger fatalities (74 per cent), female fatalities (33 per cent) and fatalities amongst the 21 to 25 year old (16 per cent) and 60 years and over age groups (35 per cent).

While there was an increase in the proportion of fatalities occurring on country roads who were metropolitan residents, country residents still continued to account for the majority of fatalities on country roads, and country roads accounted for the majority of fatalities across the State.

In summary, the characteristics of fatalities and fatal crashes during the Dec17p/Jan18p period were not significantly different from those experienced during the previous four December-January periods. That is, they were largely fatalities of vehicle occupants, fatalities on country roads, involved in run-off road crashes vehicle or opposing (head on) crashes, occurred on single lane undivided carriageways and high speed roads.

2.1 Road Safety Plan 2021

In February 2018, the NSW Government released the Road Safety Plan 2021 (RSP 2021), which was developed to set new road safety priorities and actions to help NSW work toward the State Priority Target of a 30 per cent reduction in road fatalities by 2021 (compared to 2008-2010 levels).

The six priority areas of the RSP 2021 include:

- Saving lives on country roads – improving road safety infrastructure, including targeting high-risk roads and behaviours, as the fatality rate on country roads is four times the rate on metropolitan roads.
- Safe urban places – addressing crashes in busy local areas, including pedestrian trauma which accounts for around 17 per cent of all deaths and 9 per cent of serious injuries in NSW.
- Using the roads safely – preventing risky road behaviour, such as drink and drug driving.
- Building a safer community culture – working in partnership with local and state road authorities, education providers, business and industry, vehicle manufacturers, community organisations and road safety advocates to build a safety culture.

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- New and proven vehicle technology – leveraging advances in technology to prevent crashes and minimise human error which contributes to around 94 per cent of crashes.
- Building a safe future – ensuring that when we plan, develop, design, operate and maintain our roads, safety is at its core.

These priority areas are based on a detailed analysis of current road trauma statistics over recent years and other evidence gathered throughout the development process for the RSP 2021. In particular, this analysis shows that:

- Around 65 per cent of NSW road deaths occur on country roads, which can lack safety features that protect road users in the event of a crash.
- Around two-thirds of serious injuries occur on metropolitan roads where there is higher traffic volume, greater concentrations of vulnerable road users, and more conflict points such as at intersections.
- Over 40 per cent of fatalities involve speeding, 19 per cent involve a driver with presence of an illicit drug, 18 per cent involve fatigue, and 15 per cent involve drink driving.
- Only 33 per cent of the current light vehicle fleet on our roads is rated with a 5 Star safety rating, which have key safety features to keep occupants safe in a crash.
- Of those killed in cars on our roads, 38 per cent were in cars 15 years old or older – despite these vehicles making up only 16 per cent of registered vehicles.

These priority areas will guide delivery of specific actions included in the RSP 2021 over the next four years.

3 NSW Road Safety Data

3.1 Overall road toll trend

There has been significant progress in saving lives on NSW roads, achieving the lowest road toll of 307 in 2014 compared to a peak of 1,384 fatalities in 1978. Since 2014, the road toll has been slowly increasing.

The 2017 provisional road toll was 392 fatalities, equivalent to a fatality rate of 4.99 per 100,000 population. This was 12 more fatalities than in 2016 and is the third consecutive year that the road toll has increased.

Between 2005 and 2017p there was a 23 per cent decrease in fatalities and also a 23 percent decrease in fatal crashes. In recent years, fatalities have increased by 28 per cent from the low point in 2014.

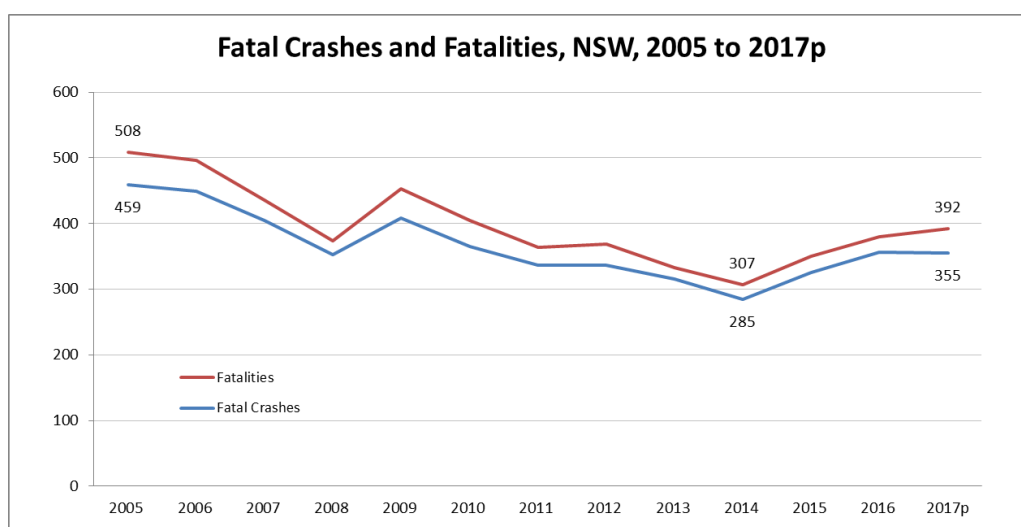


Figure 1: Fatal crashes and fatalities, 2005-2017p

Key challenges identified in the 2017 road toll statistics¹ included:

- 69 per cent of fatalities occurred on country roads (272 fatalities)
- 64 per cent of all fatal crashes were run-off-road or head-on crashes (256 fatalities)
- 43 per cent of fatalities involved speeding in excess of the limit or too fast for the conditions (167 fatalities)
- 19 per cent of fatalities involved fatigue (75 fatalities)
- 8 per cent of fatalities involved restraint non-usage (30 fatalities)
- Data for impaired driving in the 2017 road toll is incomplete as laboratory blood and urine test results for all drivers involved in fatal crashes are not yet available. However, drink driving was a factor in at least 45 fatalities (based on incomplete data to the end of October), and illicit drugs were found in the system of drivers involved in at least 45 fatalities (based on incomplete data to the end of September).

There was also a:

- 52 per cent increase in the number of passengers killed (from 54 in 2016 to 82 in 2017p)
- 12 per cent increase in fatal crashes occurring on state highways (from 92 in 2016 to 103 in 2017p),

¹ A definition of terms used at Appendix I

- 32 per cent increase in fatalities from heavy vehicle crashes (from 65 in 2016 to 86 in 2017p) with the increase in fatalities largely occurring on country roads (from 37 to 62) and in particular from articulated truck crashes on country rural roads (from 16 to 37).
- Note that there was a 45 per cent increase in fatalities from heavy truck crashes (from 56 in 2016 to 81 in 2017p)

The overall number of casualties and casualty crashes has been declining over the 2005 to 2016/17p, particularly since 2011. Between 2005 and 2016/17p casualties decreased by 25 per cent and casualty crashes decreased by 23 per cent. However, there has been an artificial decrease in overall casualties and casualty crashes associated with changes to Police procedures introduced in late 2014 for the reporting of lower severity crashes.

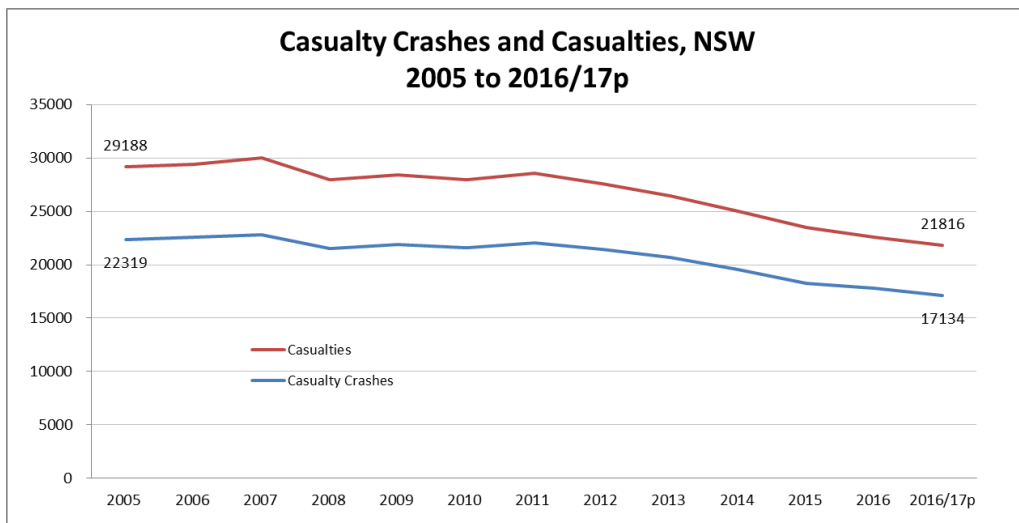


Figure 2: Casualty crashes and casualty, 2005 to 2016/17p

3.2 Fatality trends (Dec17p/Jan18p)

Preliminary data as at 1 February 2018 show that during Dec17p/Jan18p there were 72 fatal crashes resulting in 80 fatalities. Of these crashes, 67 were single fatality crashes, 4 double fatality crashes and 1 fatal crash resulting in 5 deaths.

The number of people killed over the two month period was significantly higher than the number killed during the equivalent period Dec16/Jan17p and the previous 4 year average. As Table 1 below shows, there were 80 fatalities during Dec17p/Jan18p, 23 more fatalities (41 per cent) than both Dec16/Jan17p and the previous four year average².

2 months Dec-Jan	2013/14	2014/15	2015/16	2016/17p	Previous 4 Yr Ave (2013/14 to 2016/17p)	2017p/18p
Fatalities	62	55	53	57	56.8	80
Fatal Crashes	59	48	51	53	52.5	72

Table 1: Fatalities and fatal crashes during Dec13/Jan14 to Dec17p/Jan18p

² 2013/14, 2014/15, 2015/16 and 2016/17p

It is also worth noting that previous analyses found that there were 32 fatalities during NSW Police Operation Safe Arrival (18 day period from 15 December 2017 to 1 January 2018), 18 more fatalities than for the same operation dates in Dec16/Jan17p.

3.2.1 Fatalities by road user

The road deaths in the period Dec17p/Jan18p included:

- 42 drivers
- 17 passengers
- 11 pedestrians
- 9 motorcyclists
- 1 bicyclist.

Drivers made up the highest proportion (53 per cent) of fatalities in Dec17p/Jan18p and this was identical to Dec16/Jan17p (53 per cent) but higher than the previous four year average (45 per cent).

Passengers contributed to 21 per cent of the road deaths in Dec17p/Jan18p, more than in Dec16/Jan17p (14 per cent) and the previous four year average (17 per cent).

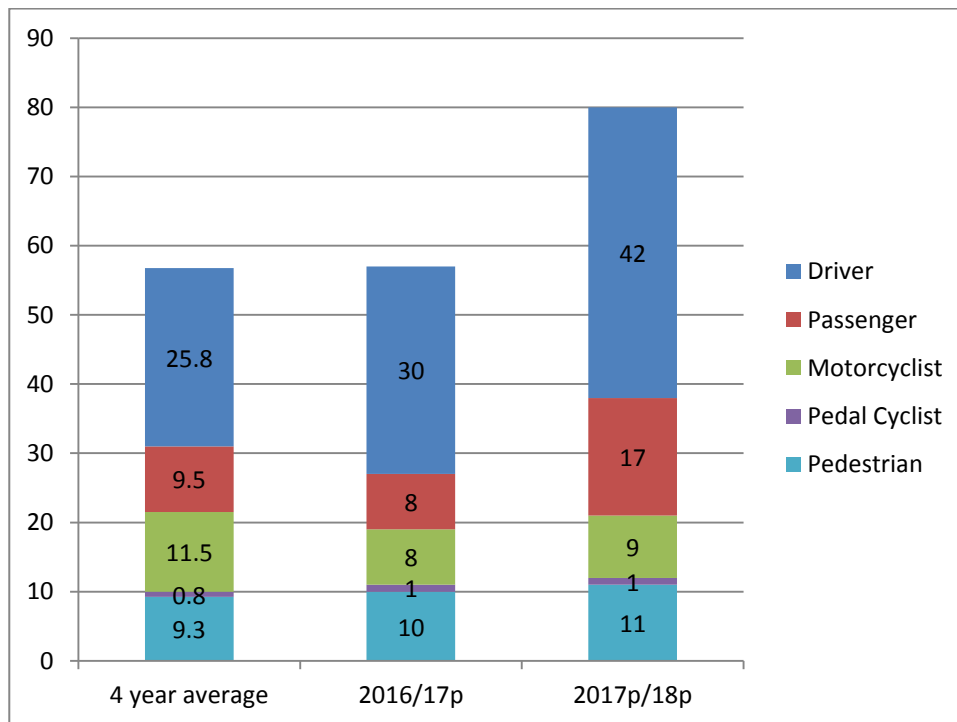


Figure 3: Fatalities by class of road user during the two month periods Dec17p/Jan18p, Dec16/Jan17p and the average of the four years Dec13/Jan14 to Dec16/Jan17p

3.2.2 Fatalities by gender and age group

Sixty-eight per cent of those killed in Dec17p/Jan18p were males, the same as in Dec16/Jan17p (68 per cent) and slightly less than the previous four year average (70 per cent).

Over a third (35 per cent) of those killed in Dec17p/Jan18p was aged 60 years or more. This was higher than both Dec16/Jan17p (30 per cent) and the previous four year average (26 per cent). Of the 28 people

aged 60 years or more killed in Dec17p/Jan18p, 16 were drivers, 6 were passengers, 5 were pedestrians and 1 was a bicyclist. Of the 16 driver fatalities aged 60 year or more in Dec17p/Jan18p, 13 (81 per cent) were considered the key vehicle controller. However, of the 26 driver fatalities aged under 60 years, 23 (88 per cent) were considered the key vehicle controller.

The proportion of fatalities among 21-25 year olds has increased from 9 per cent in Dec16/Jan17p to 16 per cent in Dec17p/Jan18p. Among 40-49 year olds group the fatalities increased from 4 per cent to 8 per cent.



Figure 4: Fatalities by age group during the two month periods Dec17p/Jan18p, Dec16/Jan17p and the average of the four years Dec13/Jan14 to Dec16/Dec17p

3.2.3 Fatalities by urbanisation of crash³

The majority of those killed in Dec17p/Jan18p died on country roads (68 per cent). This was not too dissimilar to previous period figures 65 per cent in Dec16/Jan17p and 67 per cent for the previous four year average.

³ Crash Link derives the urbanisation categories from the LGA and the speed limit for the crash. Further detail for the categories in the Figure 5 can be found in Appendix I.

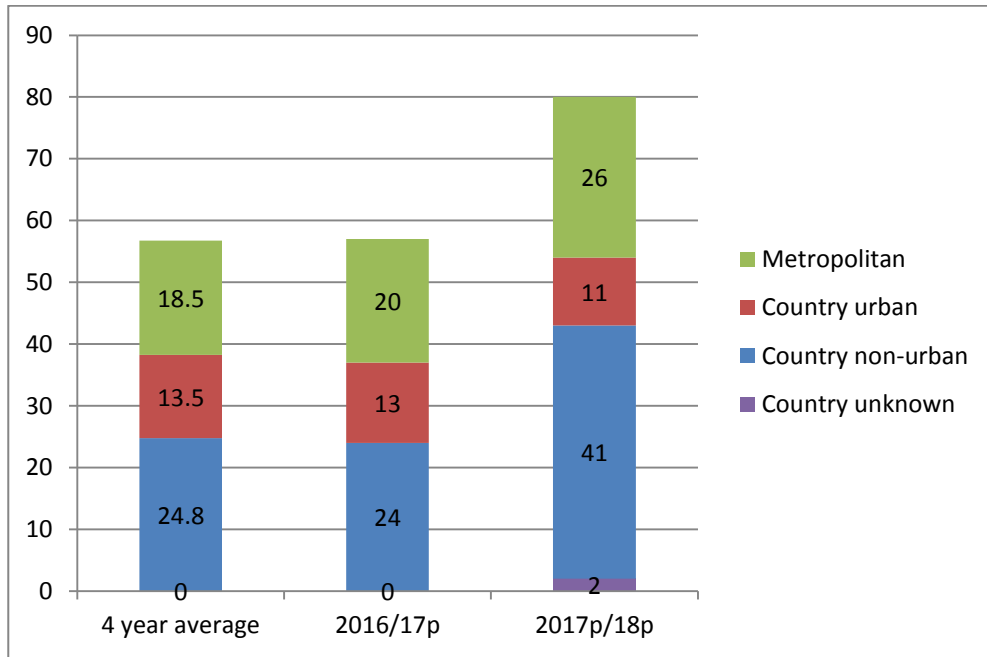


Figure 5: Fatalities by crash location during the two month periods Dec17p/Jan18p, Dec16/Jan17p and the average of the four years Dec13/Jan14 to Dec16/Jan17p

Of the 54 people killed on country roads in Dec17p/Jan18p, 61 per cent resided in country Local Government Areas (LGAs), 15 per cent were from metropolitan LGAs, 11 per cent lived interstate or overseas and the remaining 13 per cent the residence was unknown at the time of the preliminary crash report.

By contrast, of the 37 fatalities on country roads in Dec16/Jan17p, 86 per cent were country residents and only 5 per cent were metropolitan residents.

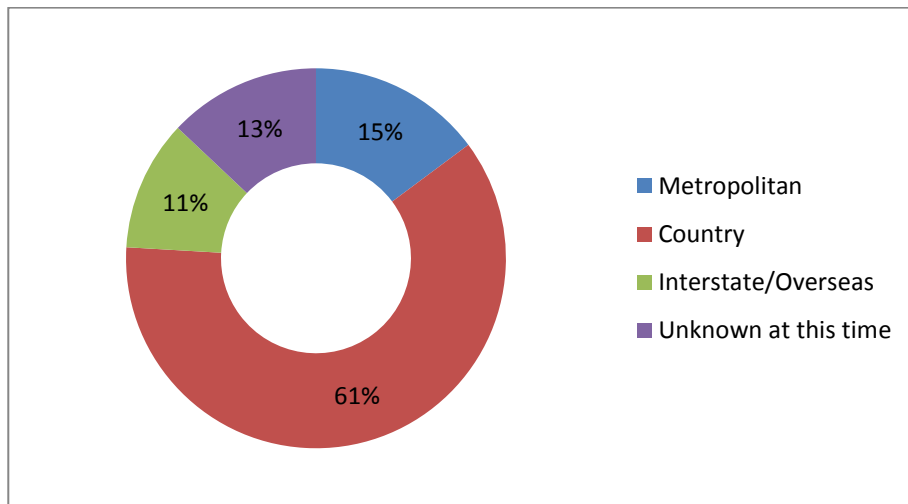


Figure 6: Urbanisation of residence of persons killed on country roads during the two month period Dec17p/Jan18p

One quarter of the 80 fatalities from Dec17p/Jan18p occurred in the Sydney RMS Region:

- 20 in Sydney (25 per cent)
- 17 in Hunter (21 per cent)
- 14 in Northern (18 per cent)
- 12 in Western (15 per cent)
- 9 in Southern (11 per cent)
- 8 in South West (10 per cent).

3.2.4 Fatalities by behavioural factors

Excessive or inappropriate speed was considered a contributing factor in 45 per cent of the crashes resulting in fatalities over the Dec17p/Jan18p. This was marginally higher than the figures recorded in Dec16/Jan17p (42 per cent) and the previous four year average (41 per cent).

The contribution of fatigue was 23 per cent in Dec17p/Jan18p which was higher than both the previous year (19 per cent) and the previous four year average (15 per cent). The involvement of alcohol in Dec17p/Jan18p fatalities is not yet finalised and therefore not included in this report.

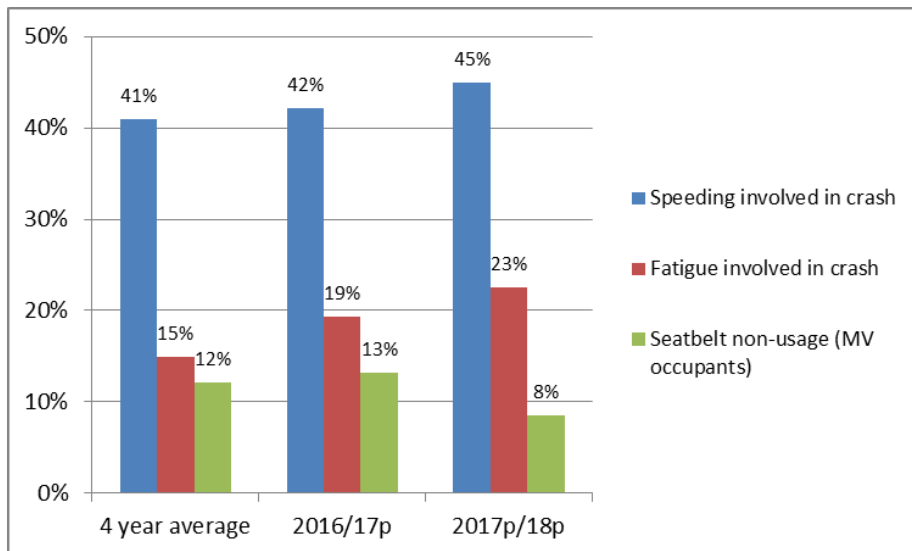


Figure 7: Percentage of fatalities by behavioural factors during the two month periods Dec17p/Jan18p, Dec16/Jan17p and the average of the four years Dec13/Jan14 to Dec16/Jan17p

Five of the 59 motor vehicle occupants killed in Dec17p/Jan18p period were not wearing a seatbelt, representing 8 per cent of the motor vehicle occupant toll. This proportion was slightly lower compared to previous years. Of the nine motorcyclists killed over the Dec17p/Jan18p, one was not wearing a helmet.

3.2.5 Fatal crashes by road user movement

Over half (54 percent) of the fatal crashes in Dec17p/Jan18p period were single vehicle crashes in which a driver lost control or ran off the road, 18 percent were opposing direction (head on) collisions and 15 percent were pedestrian crashes. The proportion of off-path crashes in Dec17p/Jan18p period was higher than Dec16/Jan17p (42 per cent) period and the previous four year average (44 per cent).

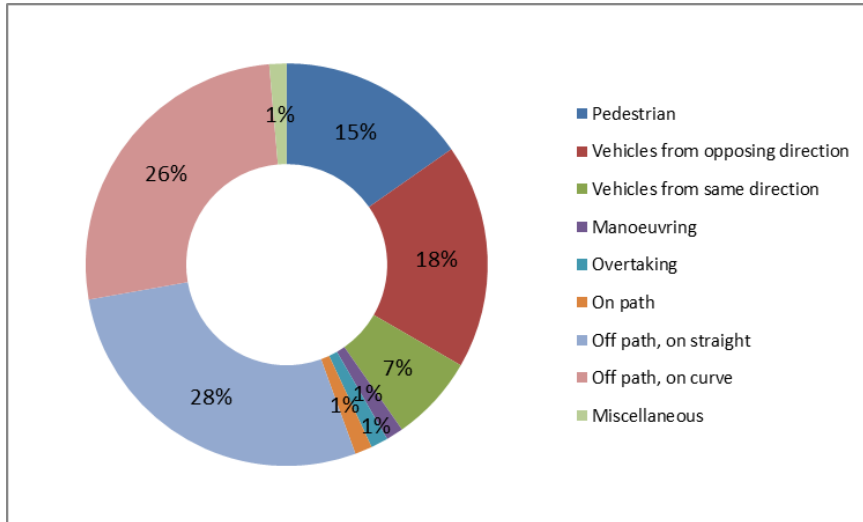


Figure 8: Percentage of fatal crashes by Road User Movement (RUM) Group during the two month period Dec17p/Jan18p

3.2.6 Fatal crashes by type of location

More than two-thirds (69 per cent) of the fatal crashes occurred on two-way undivided roads in the Dec17p/Jan18p period. This percentage was slightly higher than the 62 per cent that occurred in Dec16/Jan17p period and the 65 per cent recorded as the previous four year average.

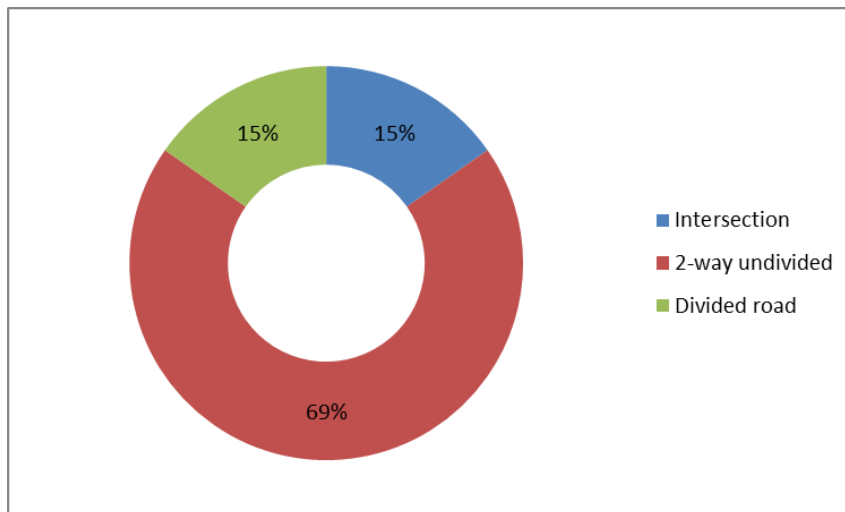


Figure 9: Percentage of fatal crashes by type of location during the two month period Dec17p/Jan18p

3.2.7 Fatal crashes by posted speed limits

Just under half (46 per cent) of the fatal crashes occurred on roads sign-posted with a speed limit of 100km/h or more. This was slightly higher than both the Dec16/Jan17p period (42 per cent) and previous four year average (42 per cent). More fatal crashes occurred (31 per cent) on freeways/motorways and State highways in Dec17p/Jan18p compared to Dec16/Jan17p (25 per cent) and the previous four year average (26 per cent).

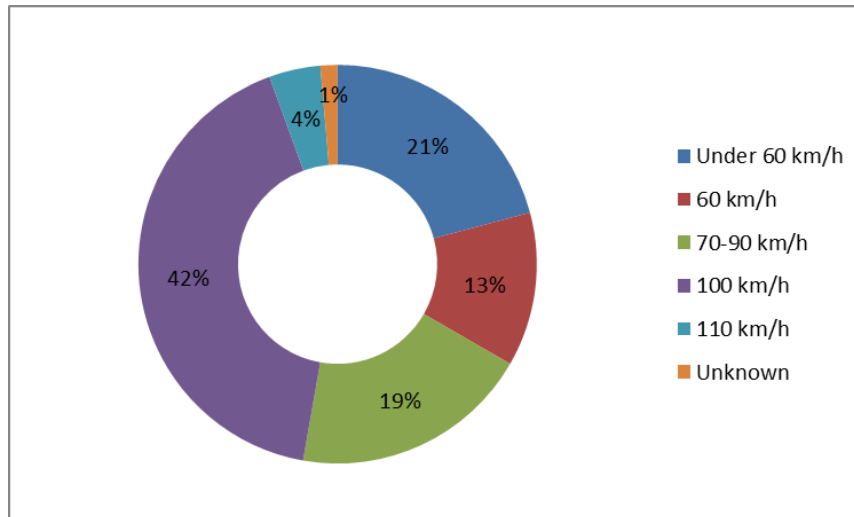


Figure 10: Percentage of fatal crashes by speed limit during the two month period Dec17p/Jan18p

3.2.8 Fatal crashes by type of crash (car crash, heavy truck crash, etc.)

Cars/car derivatives were involved in the majority (71 per cent) of the fatal crashes in the Dec17p/Jan18p period. Heavy trucks were involved in 9 (13 per cent) of the fatal crashes, slightly below Dec16/Jan17p (14 per cent) but slightly above the previous four year average figure (10 per cent). Notably, the proportion of heavy truck fatal crashes during the past five December-January periods was well below their involvement in fatal crashes for the full 2017p calendar year (19 per cent).

3.2.9 Motor vehicles drivers and riders involved in fatal crashes by residence

Of the motor vehicle drivers and riders involved in the 72 fatal crashes in Dec17p/Jan18p, 76 per cent resided in NSW (79 out of the 104 motor vehicle drivers and riders). The corresponding figure for Dec16/Jan17p was 90 per cent.

However, since the residence for 14 of the 104 motor vehicle drivers (16 per cent) was unknown at the time of this analysis, the above result may not be significant after the crash data is finalised.

3.2.10 Motor vehicles drivers and riders involved in fatal crashes by licence type

Of the 104 motor vehicle drivers and riders involved in the 72 fatal crashes in Dec17p/Jan18p, 66 (63 per cent) were standard licence holders, up by 32 per cent from 50 in Dec16/Jan17p. Between Dec16/Jan17p and Dec17p/Jan18p there was virtually no change in the number provisional licence holders (steady at 9) and unauthorised drivers and riders (steady at 4) involved in fatal crashes. However, there are 22 (21 per cent) drivers and riders yet to have their licence type finalised.

3.2.11 Motor vehicles drivers and riders involved in fatal crashes by age of vehicle

Of the 104 motor vehicle drivers and riders involved in the 72 fatal crashes in Dec17p/Jan18p, one quarter (27 per cent) were in vehicles less than five years old, 17 per cent in vehicles aged 5 to 9 years, 27 per cent in vehicles aged 10 to 14 years and 18 per cent in vehicles aged 15 to 19 years. Only 8 per cent were

motor vehicles were 20 years or older. The age distribution of motor vehicles involved in fatal crashes in Dec17p/Jan18p does not differ significantly from that experience over the previous four years.

3.2.12 Motor vehicles drivers and riders involved in fatal crashes by key vehicle role in first impact

Of the 64 car/car derivative drivers involved in fatal crashes in Dec17p/Jan18p, 45 (70 per cent) were considered the key traffic unit. For light truck involvements, this percentage was 77 per cent (10 out of 13), heavy trucks it was 33 per cent (4 out of 12) and for motorcycles it was 100 per cent (9 out of 9). The percentage for heavy trucks with key vehicle status in Dec17p/Jan18p was below that experienced in Dec16/Jan17p (64 per cent), whilst motorcyclists were up on the previous year (33 per cent). However, these results are based on relatively small numbers and are subject to statistical variation.

3.2.13 Analysis of fatalities Dec17p/Jan18p compared against the full financial year

Over the last 17 financial years (2000/2001 to 2016/2017p), the number of fatalities during the December-January period have not been disproportionately high overall.

The historical fatality results for the two month periods December-January since Dec00/Jan01 are detailed below. Figure 11 shows that the number of fatalities (80 fatalities) for the two-month period Dec 17p/Jan18p was actually the highest for the corresponding two month periods since Dec05/Jan06 (with 103 fatalities).

The trend line for the December-January results since 2000/01 shows decreases through to Dec13/Jan14 and Dec14/Jan15 and then an increasing trend.

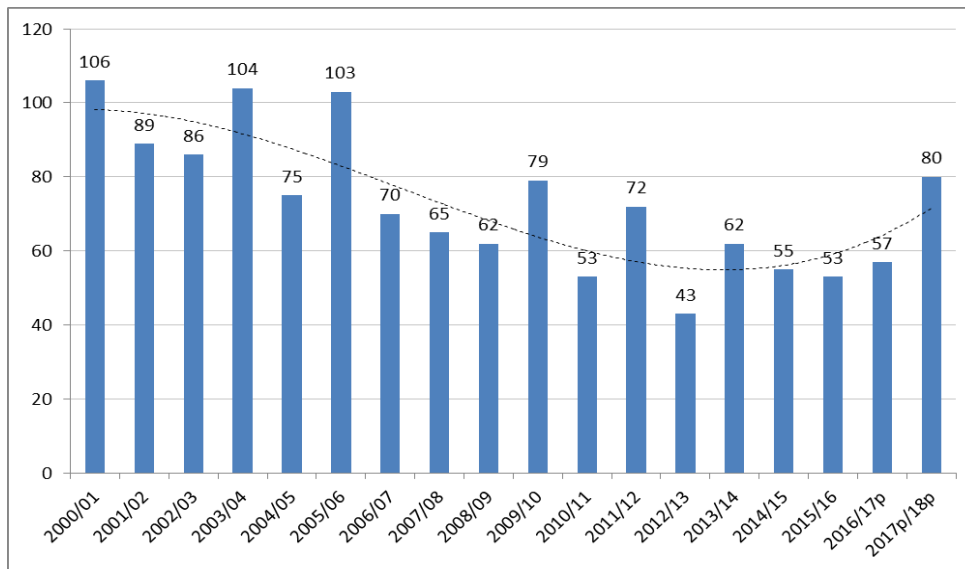


Figure 11: Number of fatalities during Dec00/Jan01 to Dec17p/Jan18p

Eight of the 17 December-January periods (as highlighted in the table below) recorded less than 17 per cent of the total number of fatalities during the respective financial year – for example only 16 per cent of all fatalities in 2016/17p financial year occurred in the December-January period.

Overall, notwithstanding the result for Dec17p/Jan18p, the level of fatalities during this two month period are generally in line with the underlying levels of fatalities throughout the rest of the year.

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However, there are subtle differences in the nature of fatalities during the December-January period compared with the rest of the year, including:

- The incidence of fatalities on country non-urban roads tends to be higher (ten of the 17 periods)
- The incidence of fatalities from heavy truck crashes tends to be lower (four out of the 17 periods)

Based on the data analysis, these results are very likely to be an outcome from changes in the relative exposure levels during the December-January two month period – travel on country roads increases with holiday traffic at this time and freight movements tend to drop off from mid-December and not pick up to normal levels until late January.

Number of fatalities				
No	Financial Year	Financial Year Road Toll	Dec – Jan Road Toll only	Dec - Jan Road Toll as % of Financial Year Total
1	2000/01	549	106	19%
2	2001/02	565	89	16%
3	2002/03	520	86	17%
4	2003/04	545	104	19%
5	2004/05	503	75	15%
6	2005/06 #	536	103	19%
7	2006/07	442	70	16%
8	2007/08 #	376	65	17%
9	2008/09	432	62	14%
10	2009/10 #	445	79	18%
11	2010/11	355	53	15%
12	2011/12 #	386	72	19%
13	2012/13	341	43	13%
14	2013/14	337	62	18%
15	2014/15	304	55	18%
16	2015/16	387	53	14%
17	2016/17p	355	57	16%
18	2017p/18p	N/A	80	N/A

Table 2: Fatalities trends for December-January period, financial years (2000/01 to 2017p/18p)

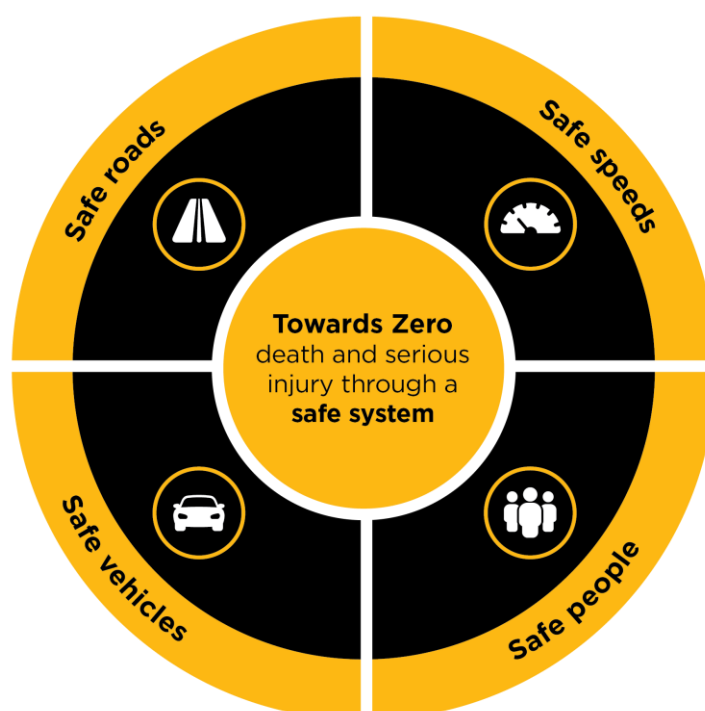
Note: # denotes one of the four Dec to Jan periods where fatalities from heavy truck crashes exceeded the norm for that financial year

4 Implementation of road safety measures

4.1 Safe System approach

The NSW Government applies the Safe System approach to improving road safety, which guides the priority areas of the RSP 2021 and development of countermeasures to reduce death and serious injury on NSW roads.

Central to the Safe System approach is an acknowledgement of the limited ability of our human bodies to tolerate physical force. The impact forces in any major crash type are well known and, if they are exceeded, can result in death or serious injury. It also recognises human error in the system is inevitable, no matter how educated and compliant we are in obeying road rules.



Source: <http://www.towardszero.nsw.gov.au/>

Safe System principles focus attention on the design and management of safe road infrastructure, safe vehicles and safe travel speeds, as well as safe road user behaviours recognising that road trauma levels are largely determined by the interaction of these key elements.

The elements are supported by a range of strategies to encourage safe and compliant road user behaviour such as education, regulation, enforcement and penalties.

The Safe System approach recognises that the road user and their ability to withstand the forces from a crash impact, is at the heart of improving. Implementing an effective safe system strategy involves each of the following elements guided by safety evidence for effectiveness and trauma reduction outcomes:

- Law enforcement and behavioural interventions to encourage safe behaviour, compliance and manage non-compliance of the road rules.
- Understanding crashes and risks through data analysis, research and evaluation.
- Managing access to the road through licensing, training and education of drivers and riders.
- Providing appropriate vehicle regulation and management as well as vehicle registration, and supporting actions to bring safety features and technologies to fleets.

- Providing education and information to the community through public education campaigns.
- Effective coordination and communication through stakeholder engagement.
- Ensuring safe road infrastructure, treatments and highway management for all types of road transport modes and road users.
- Scoping new innovations and technologies.
- Building road safety capacity, management and performance assessment to support transformative safe system changes to provide safe mobility.

However, it is important to note that these strategies cannot be viewed in isolation but as a suite of interventions. A multi-faceted approach is required to address all the pillars of the Safe System in a coordinated and holistic manner. Whilst driver education and training is an integral component embedded within the safe system approach, it can only be effective in conjunction with the other elements within the framework.

In NSW, education combined with enforcement of penalties including fines, demerit points, and licence suspensions are key countermeasures under Safer People that aim to motivate road users to follow the rules and behave safely on and around the road. The penalty notice system, including fine levels and demerit points, is integrated into a broader system of deterrence that includes enforcement, safety cameras, roadside drink and drug testing, and double demerit periods.

The effectiveness of this approach is demonstrated by the high proportion of licence holders who comply with the law. In 2014, the Staysafe Committee Inquiry into Speed Zoning and its Impact on the Demerit Points Scheme found that 70 per cent of all licence holders did not have any demerit points, and 97 per cent had accrued six or fewer demerit points.

NSW crash data suggests that double demerit periods are highly effective at discouraging offending during targeted periods. From 1997 to 2013, there were 32 per cent fewer fatalities during double demerit periods than for the same periods before the introduction of double demerits.

Over the 114 double demerit point periods since the introduction of the measure in 1997 and up until the Australia Day 2018 holiday weekend, there have been 789 fatalities, 452 (36 per cent) fewer fatalities than for the corresponding periods prior to double demerit points.

Overall, road safety is improved through a combination of targeted improvements to road infrastructure, promoting safer vehicles and equipment, speed management, and encouraging road users to comply with the road rules and drive responsibly through education and enforcement.

The following sections outline key road safety initiatives and actions that were undertaken during Dec17p/Jan18p.

4.2 Enforcement Activity

The NSW Police Force (NSWPF) undertakes regular enforcement activities to ensure compliance with the road rules and change road user behaviour. The majority of road users are deterred from risky behaviour by the sanctions and penalties in place – fines, licence disqualification and possible gaol times – if they know enforcement will be conducted or they perceive a threat of enforcement.

NSWPF enforcement activity provides visible and strong deterrence for unsafe driving. The perceived certainty of enforcement and immediacy of a penalty are known to produce positive behaviour change⁴.

⁴ Davey & Freeman, 2011
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Without certainty of enforcement, road users are more likely to remain undeterred by sanctions and will continue to engage in unsafe behaviours⁵.

Table 3 below provides data on the infringements issued in the December-January period over the past five years, including NSWPF operations under the Enhanced Enforcement Program (see section 4.3).

Year	Start date	End date	No. of days	Police issued speeding infringements	Seat belt infringements	Motorcycle helmet infringements	Mobile phone infringements	No. of overall infringements (not speed)	No. of RBTs conducted	Number of PCA Charges (not persons)	No. of kilometres travelled
2017/2018	01-Dec	31-Jan	62	51,003	4,417	441	5,947	56,246	1,217,806	3,504	1,646,633
2016/2017	01-Dec	31-Jan	62	50,523	4,716	387	6,512	76,324	972,200	3,458	1,658,509
2015/2016	01-Dec	31-Jan	62	41,342	4,840	321	6,669	69,942	1,733,318	3,785	1,357,439
2014/2015	01-Dec	31-Jan	62	37,943	4,918	335	5,851	66,279	1,467,946	3,777	1,437,166
2013/2014	01-Dec	31-Jan	62	39,186	4,417	326	5,698	66,881	1,303,499	3,946	967,176

Table 3: Infringements during Dec13/Jan14 to Dec17/Jan18

4.3 The Enhanced Enforcement Program

The Enhanced Enforcement Program (EEP) has been operating since 1996 and investment in the Program has evolved and been optimised to respond to road safety trends in NSW.

EEP is a partnership between the NSWPF and TfNSW, which is funded through the Community Road Safety Fund. Around \$14.5 million per annum is allocated to the EEP and its high visibility on-road enforcement operations that target road user behaviours known to contribute to road trauma.

The Program provides additional funds to the NSWPF, Traffic and Highway Patrol Command to allow an extension of the dedicated hours. The Program's objectives are to improve road safety in two ways: to increase the perceived and real profile of NSWPF to deter unsafe behaviours and to reduce crashes.

This includes speeding, drink driving, drug driving, fatigue, illegal use of mobile phones and non-use of seatbelts. Enhanced enforcement operations are also supported with public education campaigns to target the main behaviours related to crashes in NSW.

⁵ Ipsos, 2016; Woolcott, 2013

The program is guided by five key principles regarding the way enforcement activity is to be conducted. It must:

- be highly visible and effectively targeted
- be additional to baseline levels committed by the NSWPF
- target road safety behaviours known to contribute to road trauma
- be supported by coordinated public education
- be operationally the responsibility of the NSWPF.

The EEP undertakes three different types of enhanced operations:

- State-wide operations – these are usually run over long weekend and holiday periods in conjunction with double demerit point periods.
- Major route operations – these are route specific operations that provide profile and enforcement on arterial, orbital and major routes across the state including the M2, M7, M5, Pacific Highway, Newell Highway, Kings Highway, Great Western Highway, Hume Highway and New England Highway
- Additional operations – these are enforcement operations run in geographical areas targeting specific local behavioural issues.

Over the holiday period Dec17/Jan18, two major state wide EEP operations were undertaken – Operation Safe Arrival and Operation Safe Return.

For the previous four years (Dec13/Jan14 to Dec16/Jan17p), the rate of fatalities during Operation Safe Arrival (0.79 fatalities per day) was below the rate of fatalities across the respective financial year (1.06 fatalities per day). While, the rate of fatalities during Operation Safe Return (1.11 fatalities per day) was around the same as the rate of fatalities across the respective financial year (1.06 fatalities per day). Over the combined operation periods the rate of fatalities (0.86 fatalities per day) was lower than that for the respective financial year (1.06 fatalities per day).

With 36 fatalities over 22 days for the combined operation periods in Dec17p/Jan18p (1.64 fatalities per day), the most recent operation periods experienced a relatively high rate of fatalities – around twice the rate experienced over the previous four years of operations. The daily fatality rate was highest during the Operation Safe Arrival phase – 1.78 fatalities per day.

4.3.1 Operation Safe Arrival

Operation Safe Arrival is undertaken from the start of the school holiday period and runs until the New Year's Day holiday. While this operation covers the legislated double demerit point period, it usually commences several days earlier in line with the commencement of NSW school holidays.

For the five year period (2013 – 2017), Operation Safe Arrival has run on average for 16 days while double demerits have applied for an average of 12 days.

Operation Safe Arrival ran over 18 days from 15 December 2017 to 1 January 2018 and there were 32 fatalities, up from 14 for the same operation period in 2016/17. Over the past five years of Operation Safe Arrival (2013/14 to 2017/18), there were a total of 72 fatalities.

Through EEP funding, Operation Safe Arrival has allocated 349,875 baseline hours over the five year period. In the last Operation, the NSWPF committed an additional 80,000 on road enforcement hours.

4.3.2 Operation Safe Return

Operation Safe Return is a state wide operation that runs over the Australia Day long weekend, which often coincides with the end of the school holiday period in NSW. The Operation Safe Return runs for four or five days per annum depending on the legislated double demerit period.

For the period 2014-2018, Operation Safe Return has run on the same dates as the double demerit period. There were four fatalities recorded for this operation period in 2018, the same number as for the previous operational period in 2017.

On average, over this five year period an average of 25,000 baseline hours and 5,600 enhanced hours were committed to on-road enforcement.

4.3.3 Other Enhanced Enforcement Program operations

Each year, the December-January period also sees additional EEP operations undertaken throughout the state. These are run locally and address specific road trauma trends within a geographical or route based location. There are approximately 40 of these operations undertaken across the state over this time period; however, they are run at different times of day and days of week in each area, in line with crash data.

While the overall funding for the operations is allocated on a trimester basis it is estimated that on average over the five year period for 2013/14 to 2017/18 that approximately \$1.7 million was allocated to additional operations over the December-January period outside of Operations Safe Arrival and Safe Return.

The Centre for Road Safety and the NSWPF also run one-off highly targeted operations at various times to address state wide or local spikes in the road toll.

To address the 2017 trend of an increasing road toll, Operation Towards Zero was undertaken in January 2018 between Operation Safe Arrival and Safe Return, and was completed in line with the end of the NSW school holiday period.

The Operation Towards Zero ran from 2 – 30 January 2018, with approximately 6,240 additional enforcement hours⁶ committed to high visibility on-road enforcement.

4.4 Public Education Campaigns

Road safety advertising campaigns are proven to play a role in educating the public on key road safety issues and changing behaviour to reduce trauma on our roads. These campaigns are developed through the incorporation of attitudinal studies as well as behavioural trends through crash statistics. In addition, previous campaign content and approaches are taken into consideration to build upon existing public knowledge. Education combined with enforcement⁷ is proven to have a greater impact on behaviour change than either enforcement or public education in isolation.

⁶ Because Operation Towards Zero is all cancelled rest days there are no baseline hours – the whole operation is enhanced hours

⁷ Rune Elvik, Truls Vaa, Alena Hoye, Michael Sorensen, The Handbook of Road Safety Measures: Second Edition, 2009
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Road safety campaigns play several important roles in contributing to the improvement of road safety in NSW:

- Awareness and education of road safety risks for key behavioural issues (e.g. speeding, driver fatigue)
- Encourage behaviour change for key vulnerable road user groups (e.g. motorcyclists, pedestrians)
- Supporting enforcement initiatives to deter risky behaviour (e.g. double demerits, random breath testing, mobile drug testing).

Speeding, fatigue and impaired driving remain the key behavioural campaigns advertised over the December-January holiday period. In addition, activity for the new enforcement campaign – Stop it or Cop it – was up-weighted over the holiday period.

The suite of campaigns were scheduled as part of an overall coordinated media strategy to ensure relevant and contextual year round messaging. This approach includes communicating during fixed dates of police enforcement (e.g. double demerits), and during periods when there are more people on the road including Easter, Christmas holidays and long weekends.

TfNSW campaigns are subject to tracking and evaluation to monitor their ongoing effectiveness.

4.4.1 ‘Saving Lives on Country Roads’ Campaign

The ‘Saving Lives on Country Roads⁸’ campaign was launched on 4 December 2017 by the Deputy Premier and the Minister for Roads, Maritime and Freight. It is the first-ever comprehensive road safety campaign to specifically target regional NSW as more than two-thirds of fatalities occur on country roads. The campaign encourages country people to re-think the common excuses used to justify their risky behaviour on their local roads.

The campaign highlights that, ultimately, there is no excuse for unsafe behaviour on the road, because it can have tragic and life-changing consequences. It also aims to engage with the broader regional audience by encouraging friends, family and local communities to influence safe driving behaviour.

Despite the fact that the majority of fatalities on country roads are local residents, TfNSW research found that country drivers often resist the notion that the way they drive puts themselves or others at risk. There is also a tendency for complacency, over confidence and lower perception of risk when driving on familiar roads. The campaign aims to address this issue, and forms part of a long term integrated communications program designed to increase the personal salience of road trauma to country drivers in NSW, drive positive behaviour change, and foster community support for road safety initiatives.

The ‘Saving Lives on Country Roads’ campaign has been promoted through television, radio, print and digital/social media channels.

4.4.2 ‘Stop it or Cop it’ Enforcement Campaign

On 14 December 2017, the ‘Stop It or Cop It⁹’ police enforcement campaign was launched across NSW by the Minister for Roads, Maritime and Freight and the Minister for Police and Emergency Services. The

⁸ <http://roadsafety.transport.nsw.gov.au/campaigns/saving-lives-on-country-roads/index.html>

⁹ <http://roadsafety.transport.nsw.gov.au/campaigns/enhancedpolice.html>
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campaign seeks to increase awareness that 16,500 NSWPF officers can enforce illegal road user behaviour anywhere and at any time.

The enforcement campaign aims to deter NSW drivers breaking road rules that are known to contribute to the road toll, including speeding, drink-driving, not wearing a seat belt, and illegal use of a mobile phone while driving. Communications play a key role in the overall road safety enforcement strategy, by working in concert with enforcement to reinforce the perception that drivers breaking the law are likely to be caught.

The campaign enhances the perception that enforcement by Police is commonplace by:

- Showcasing that anyone, anywhere, anytime can be caught for breaking the road rules, by featuring a range of situations, locations and people getting caught by the police.
- Overcoming misperceptions that police enforcement only occurs occasionally, by showing the different ways police can detect and enforce illegal driving behaviour and the different times enforcement occurs.
- Showing the consequences of getting caught through personal stories, portraying the cost, loss of points/loss of licence and the embarrassment of offending.

The 'Stop It or Cop It' campaign has been promoted through television, radio, outdoor and digital/social media channels.

4.5 Social media

TfNSW is increasingly using social media – primarily Facebook – to facilitate and expand our engagement with the community, and to share information on a range of road safety issues.

The NSW Road Safety Facebook page was launched in December 2015¹⁰ and by February 2018 it had reached 141,000 followers, making it one of the top four most popular NSW Government Facebook accounts.

The page delivers evidence-based content which is designed to be credible, relevant and engaging. This content supports and links a range of websites (including the Centre for Road Safety) and also directs customers to apps, and other relevant sources of information and data.

Posts are tailored to different road users – for example, bicycle riders (understanding potential hazards, increased penalties and recent rule changes), motorcyclists (encouraging low risk riding) and pedestrians – and are aligned with events, seasonal activities (e.g. holidays), road safety campaigns, and enforcement activities.

Between Dec17/Jan 18, a total of 91 pieces of content were posted on the NSW Road Safety Facebook page. This content had a combined reach of 24.02 million people (up to 35 per cent on the Dec16/Jan17 period) engaged 835,374 users (up 8.5 per cent on the Dec16/Jan17 period), and had 5,716,724 video views (up 287 per cent on the Dec16/Jan17 period).

Video was the most engaging form of content during the period and accounted for 76 per cent of total engagements visitors had with posts on the page. The videos included 'human stories' (interviews with road trauma survivor, Sam Bailey), vox pops (everyday country people answering questions on road

¹⁰ While the NSW Road Safety page was launched on 9 December 2015, Facebook cannot supply statistics for the 2015/16 Operation Safe Arrival period

safety), heavy vehicles (Be Truck Aware aiming to target vulnerable road users (pedestrians, cyclists and motorcyclists) tailored to different audience, footage of vehicle crash tests, animations and television commercials. Images and graphics were also used.

Appendix I - NSW Road safety statistics definitions

The data presented in this chapter uses the following definitions:

- Provisional data – fatality data as at 1 January 2018, subject to change.
- Preliminary data – fatality data for the December 2017 to January 2018 period (Dec17/Jan18), subject to change (not necessarily collated on a particular date).

Crash and casualty

- 'A crash' is a crash which is reported the Police, which occurs on a road (or within road reserve) which is open to the public, which involves at least one moving road vehicle and which involved at least one person killed or injured or at least one motor vehicle towed away.
- 'A casualty' is considered any person killed or injured because of a crash.
- 'A fatal crash' is a crash in which there is at least one fatality.
- 'A fatality' is a person who dies within 30 days of a crash from injuries received in that crash.
- 'A serious injury crash' is a crash which involves at least one person seriously injured but no fatalities.
- 'A serious injury' is a person identified in a police report and matched to a health record indicating a hospital stay due to injuries sustained in a crash, or is identified as an icare (Lifetime Care) participant, but this person has not died within 30 days.
- 'A heavy truck crash' is a crash involving at least one heavy truck.

Urbanisation¹¹

CrashLink derives the urbanisation from the LGA and speed limits in effect, as follows:

- Metropolitan – Sydney, Newcastle and Wollongong metropolitan areas.
- Sydney Metropolitan – all Sydney metropolitan LGAs.
- Newcastle metropolitan – Newcastle City and Lake Macquarie City LGAs.
- Wollongong metropolitan – Wollongong City and Shellharbour City LGAs.
- Country urban – Other LGAs, where speed limit is up to and including 80 km/h (less than or equal to 80 km/h).
- Country non-urban – Other LGAs, where speed limit is more than 80km/h (greater than 80km/h).
- Country unknown – Other LGAs, where speed limit is unknown.

¹¹ CrashLink Reporting System – Data Manual, 2017