NSW GOVERNMENT Transport for NSW

Centre for Road Safety

TOWARDS ZERO

Roads, roadsides and speeds - trauma trends

Report

February 2017 | Version: 1

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Reference:	Centre for Road Safety – Roads, Roadsides and Speeds - Trauma Trends Report
Division:	Freight, Strategy and Planning, Transport for NSW

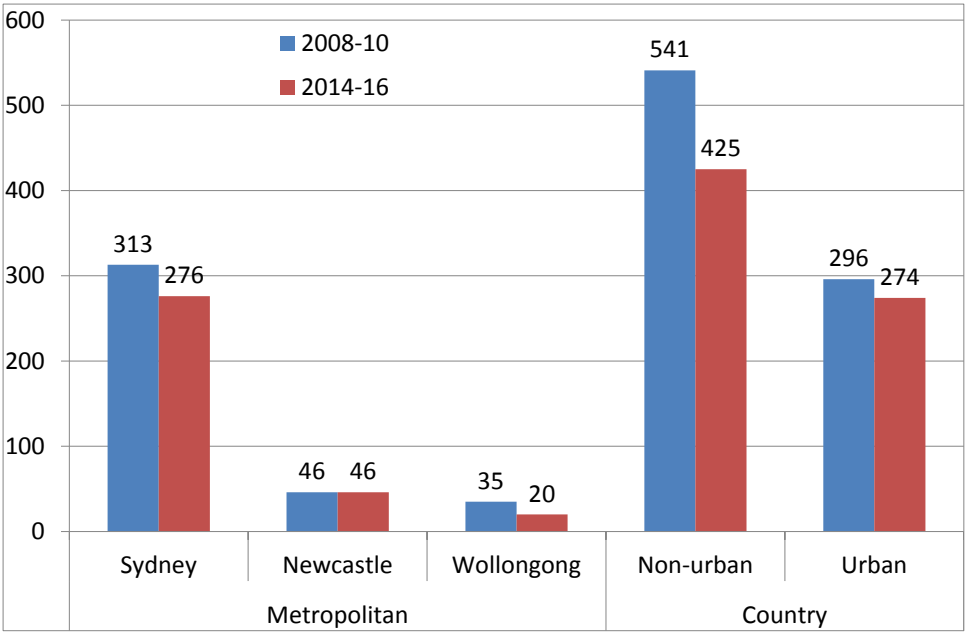
Contents

1 Trends in fatal and serious injury crashes

This section covers location factors in several ways: metropolitan or country, road classification, location type, and speed limit.

1.1 Urbanisation

1.1.1 Fatalities in 2008-10 and 2014-16 by urbanisation[1]



In 2014-16, two-thirds (67 per cent) of fatalities were on country roads:

- 41 per cent of fatalities were on country non-urban roads (speed limit 90 km/h or higher)
- 26 per cent of fatalities were on country urban roads (speed limit up to 80 km/h).

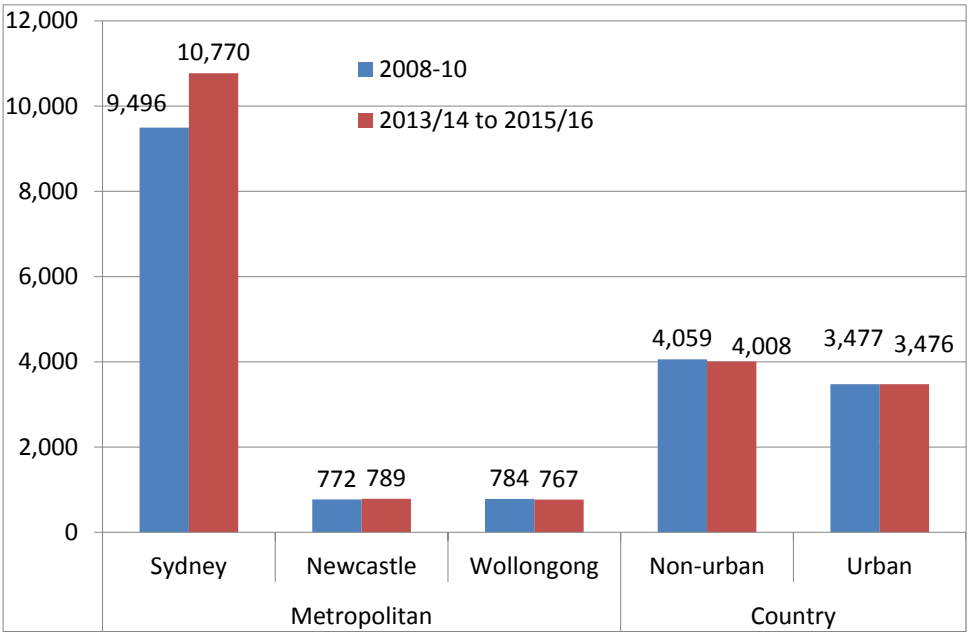
In the same period, 27 per cent of fatalities happened on Sydney metropolitan roads.

The total fatalities were 191 fewer in 2014-16 than in 2008-10 (16 per cent fewer). Much of this reduction (116 fewer fatalities) was on country non-urban roads (21 per cent).

[1] Metropolitan groups are defined as follows:

- Sydney metropolitan – Sydney metropolitan (but not Hawkesbury or Blue Mountains LGAs)
- Newcastle metropolitan - Newcastle City and Lake Macquarie City
- Wollongong metropolitan - Wollongong City and Shellharbour City.

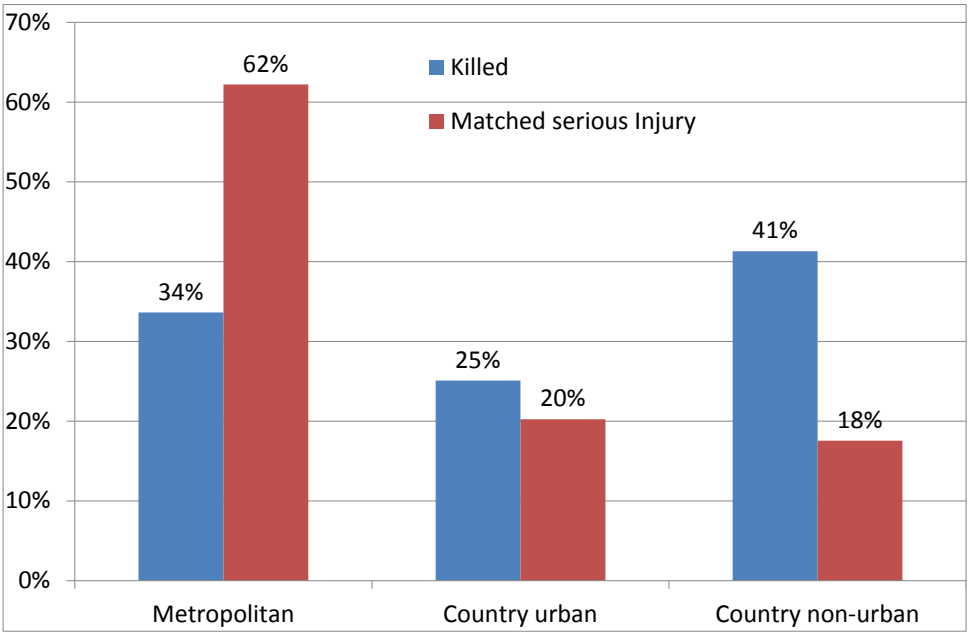
1.1.2 Matched serious injuries in 2008-10 and three years ended 30 June 2016 by urbanisation



Total matched serious injuries were 1,193 more in the three years ended 30 June 2016 than in 2008-10 (9 per cent). There was an increase of 1,274 on Sydney metropolitan roads (13 per cent) and little change in other urbanisation groups.

In the three years ended 30 June 2016, Sydney metropolitan roads had 54 per cent of matched serious injuries. For unmatched serious injuries, however, crash locations are unknown. It is estimated, based on the hospitals where they were first admitted, that about half of all serious injuries happened on Sydney metropolitan roads.

1.1.3 Fatalities and matched serious injuries in the three years ended 30 June 2016 by urbanisation

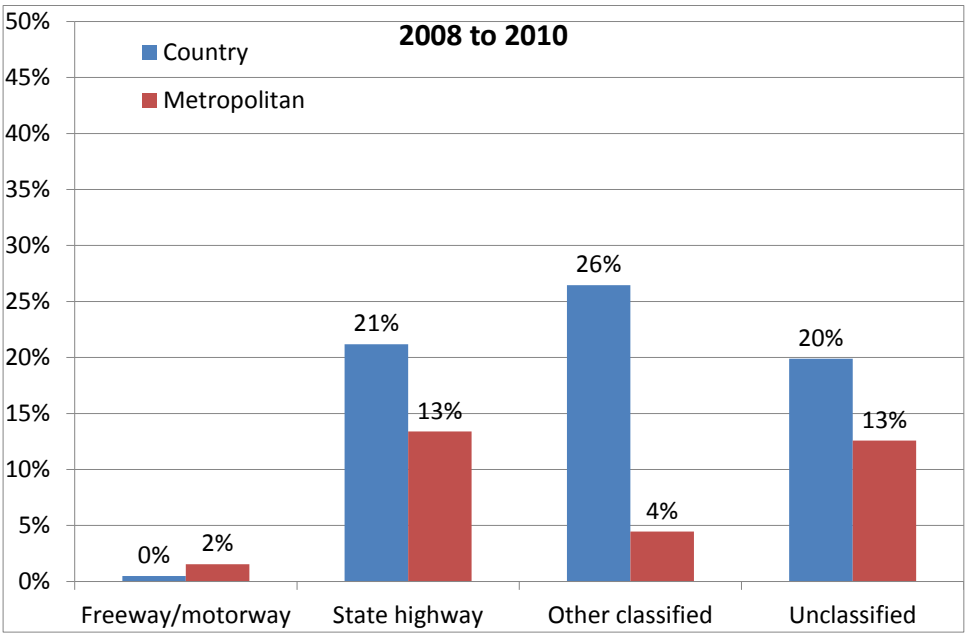


Matched serious injuries are most common on metropolitan roads, and fatalities are most common on country non-urban roads.

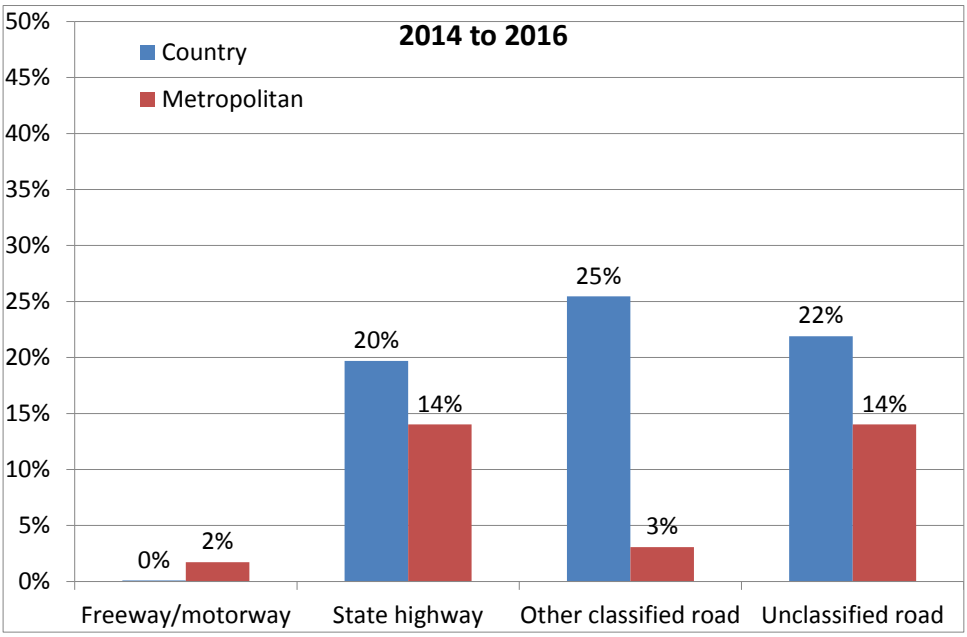
1.2 Road classification

Comparing 2008-10 with 2014-16, the two distributions are much the same, indicating that no category has changed more than another.

1.2.1 Distributions of fatalities by road classification and urbanisation for 2008-10



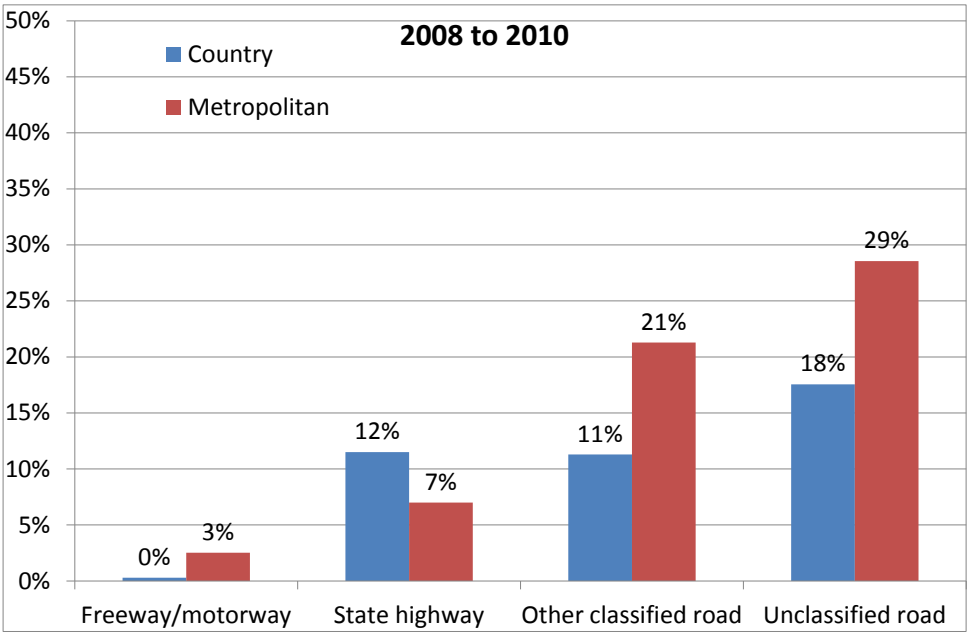
1.2.2 Distribution of fatalities by road classification and urbanisation for 2014-16



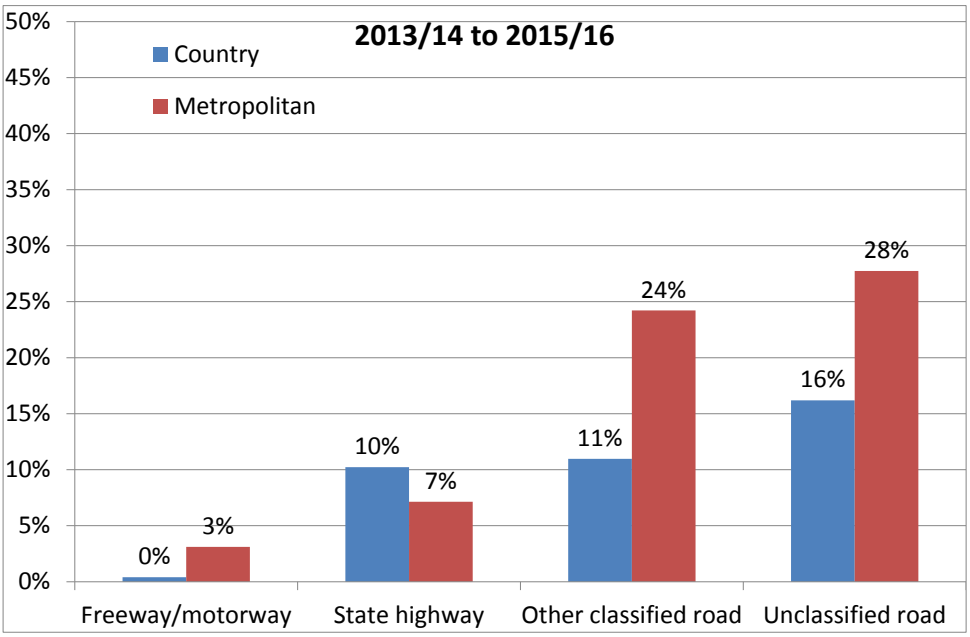
In 2014-16L

- 64% of fatalities were on classified roads
- 67% of country fatalities were on classified roads
- 57% of metropolitan fatalities were on classified roads.

1.2.3 Distribution of matched serious injuries by road classification and urbanisation for 2008-10



1.2.4 Distribution of matched serious injuries by road classification and urbanisation, for the three years ended 30 June 2016

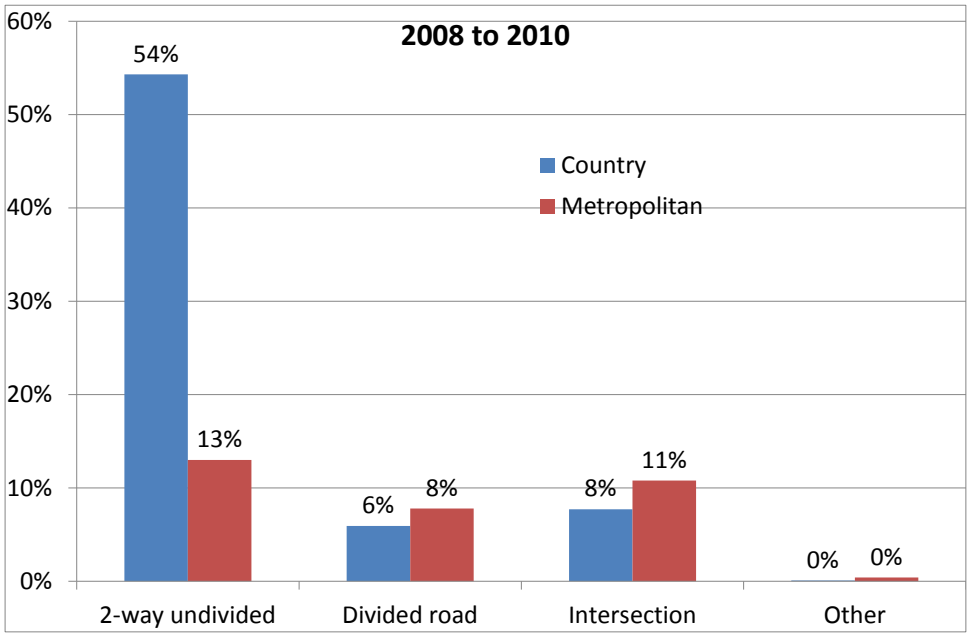


The largest change in the distribution is the increased proportion on other (lower order) classified roads in metropolitan areas. There was an increase of 835 matched serious injuries on these roads. Most of the increase in matched serious injuries was on metropolitan roads. Most of the increase on metropolitan roads was on other classified roads.

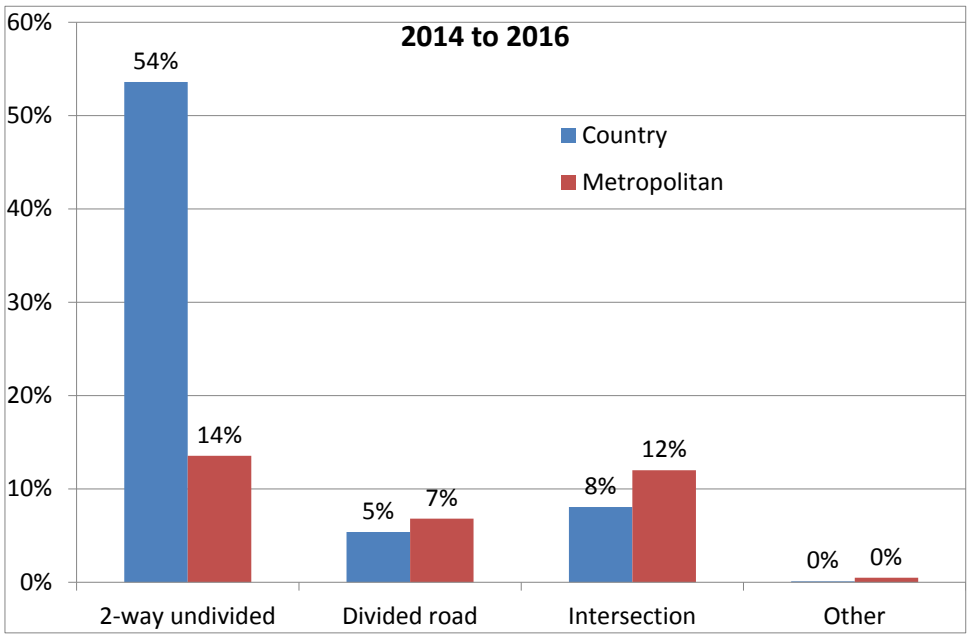
For matched serious injuries in country areas compared to fatalities, a greater proportion occurred on unclassified (local) roads and a lesser proportion on state highways.

1.3 Location

1.3.1 Distribution of fatalities by location types and urbanisation, for 2008-10



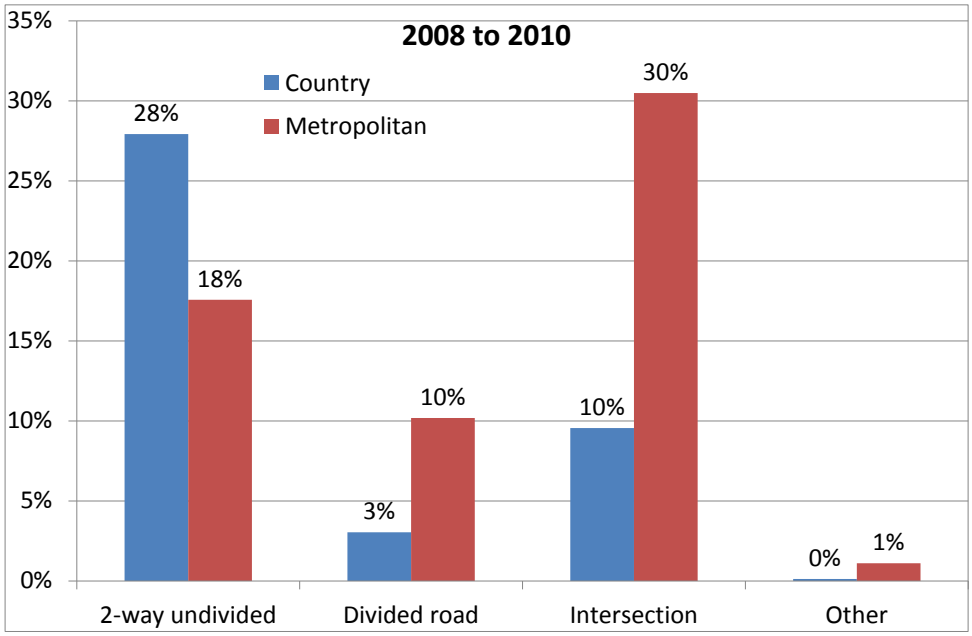
1.3.2 Distribution of fatalities by location types and urbanisation, for 2014-16



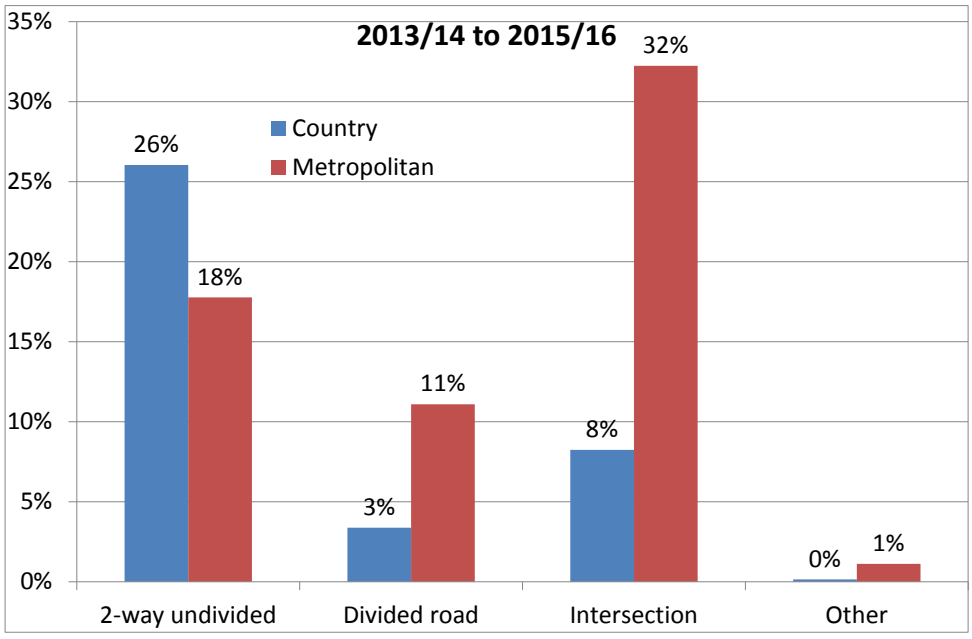
Comparing the three year periods, the distributions over location type and urbanisation have stayed much the same.

In 2014-16, 20 per cent of fatalities were at intersections. Most intersection fatalities were at T-junctions or cross-intersections; only 1 per cent of fatalities were at roundabouts.

1.3.3 Distribution of matched serious injuries by location types and urbanisation, for 2008-10



1.3.4 Distribution of matched serious injuries by location types and urbanisation, for the three years ended 30 June 2016



The largest change in the distributions is the increase in the proportion at metropolitan intersections. This is an increase of 710 matched serious injuries, comparing three year periods, which is 56 per cent of the increase in metropolitan matched serious injuries and 60 per cent of the increase in serious injuries across all location types.

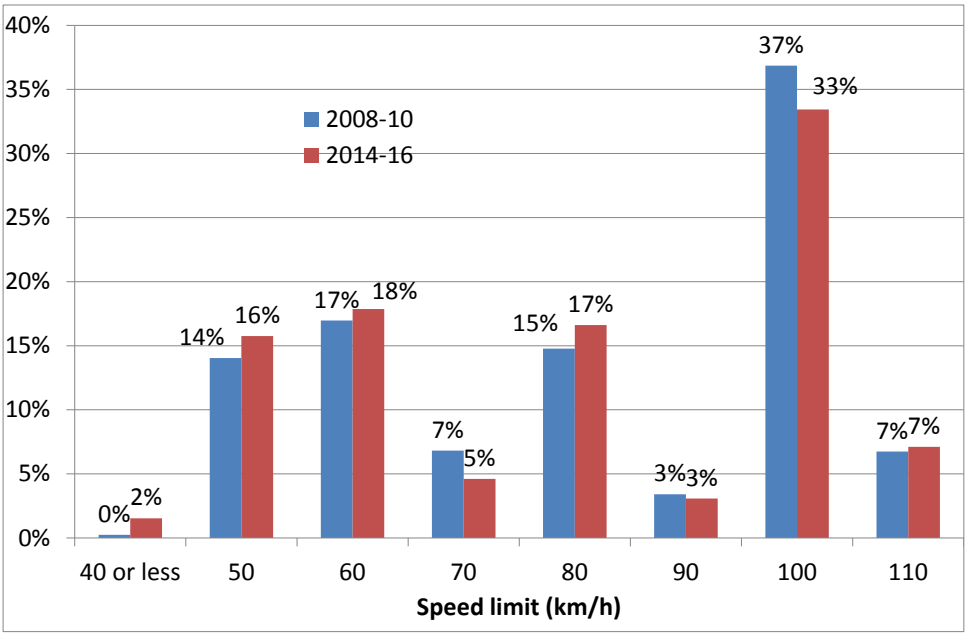
Crashes at intersections resulted in:

- 20 per cent of fatalities
- 40 per cent of matched serious injuries.

The difference reflects the more metropolitan nature of serious injuries compared to fatalities.

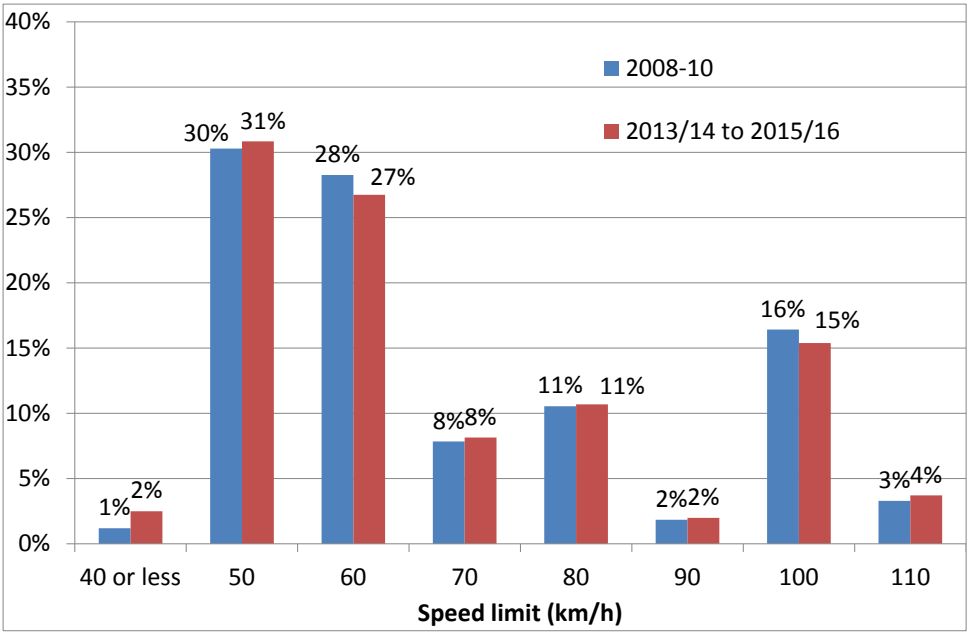
1.4 Speed

1.4.1 Distribution of fatalities by speed limits, for 2008-10 and 2014-16



The largest difference in the distributions is the decrease where the speed limit was 100 km/h. This represents 106 fewer fatalities on 100 km/h roads, comparing the three year periods. Most fatalities on 100 km/h roads are in non-urban areas, and this reduction substantially overlaps with the reduction on country non-urban roads.

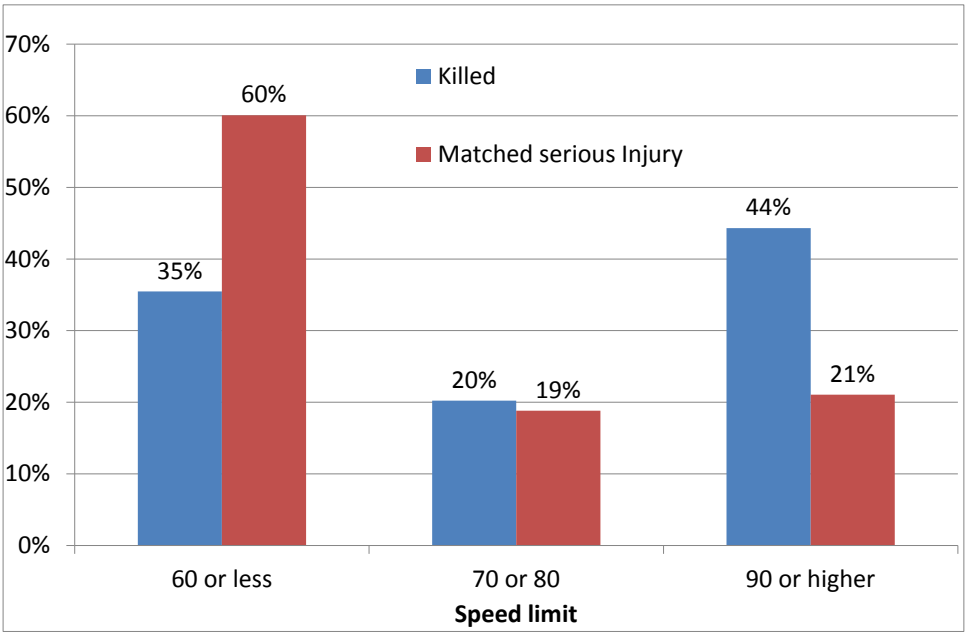
1.4.2 Distribution of matched serious injuries by speed limits, for 2008-10 and three years ended 30 June 2016



The distribution has changed very little when comparing 2008-10 and the three years ended 30 June 2016.

The difference between the distribution of fatalities and matched serious injuries is in the proportion of casualties on high-speed roads.

1.4.3 Distribution of fatalities and of matched serious injuries by speed limits, for the three years ended 30 June 2016

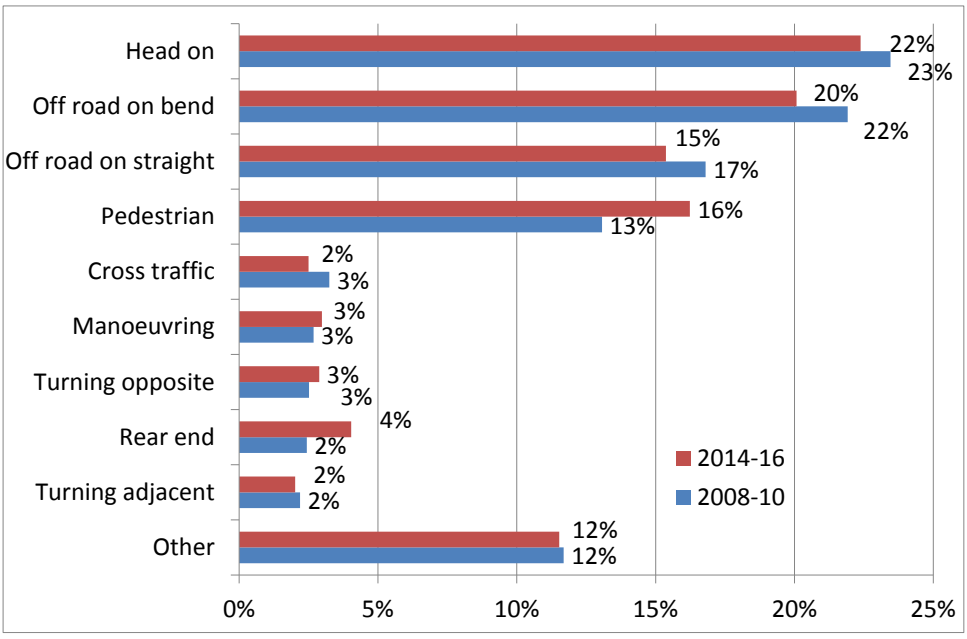


Although the above chart aggregates speed limits of 60 km/h or less, there are substantial numbers of serious casualties in both 50 km/h and 60 km/h zones. There is a difference between fatalities and matched serious injuries even comparing these two speed limits. In the three years ended 30 June 2016:

- There were 15 per cent more fatalities in 60 km/h zones than in 50 km/h
- There were 13 per cent fewer matched serious injuries in 60 km/h zones than in 50 km/h.

1.5 Crash types

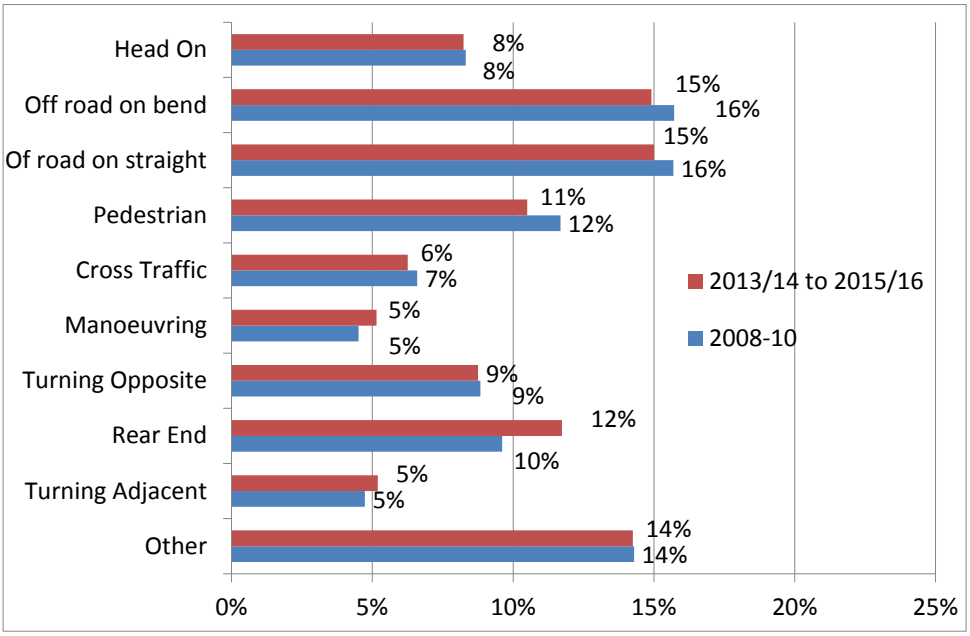
1.5.1 Distribution of fatalities by RUM groups 2008-10 and 2014-16



Road User Movements (RUMs) involving off road, head on, and pedestrian crashes continue to be the main crash types for fatalities. Only 3 per cent of head on crashes involved overtaking.

Comparing 2008-10 and 2014-16, the largest changes are in the pedestrian and rear end crash types. Compared to the totals, the increases in fatalities for these crash types is not large (12 for rear-end, and eight for pedestrian) but any increases are the exception, because overall fatalities decreased by 16 per cent. The pedestrian fatal crash type (and pedestrian fatalities) were a record low in 2014, but were substantially higher in 2015 and 2016. There are few rear end fatalities each year.

1.5.2 Distribution of matched serious injuries by RUM groups 2008-10 and three years ended 30 June 2016



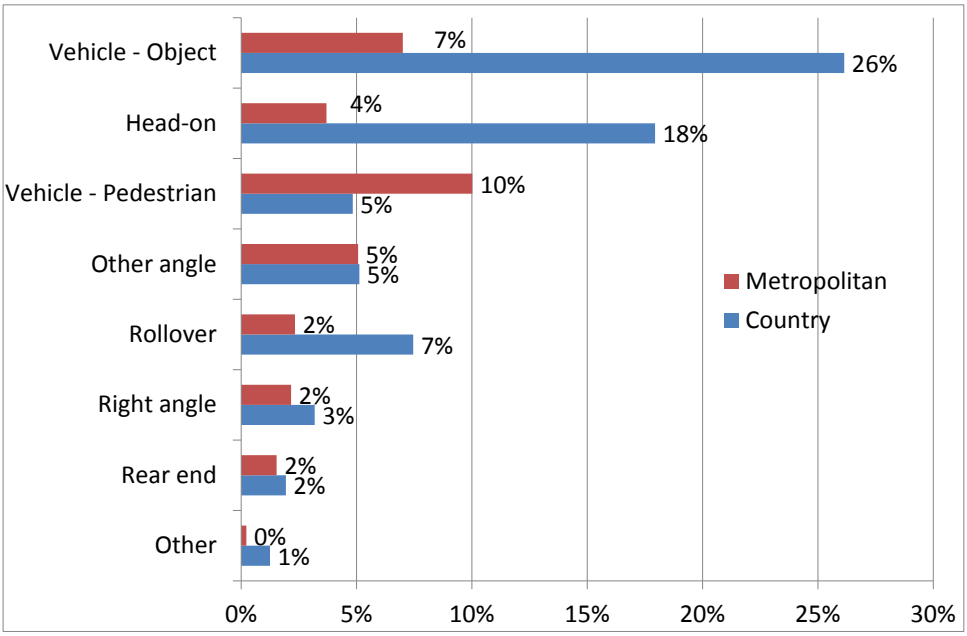
The largest increase in matched serious injuries is in the rear end crash type. Comparing the three year periods, rear end matched serious injuries increased by 535, which is 45 per cent of the increase in total matched serious injuries.

Fatalities have a much larger proportion of head-on crash type. Serious injuries have a much larger proportion of intersection-related crash types. Rear end RUMs are also much more common in matched serious injuries than in fatalities. Serious injury crash types are those more associated with metropolitan areas.

1.6 First impact type

First impact types tell a similar story to RUMs (which are based on first impacts). The following illustrates the differences between the first impacts in country and metropolitan serious trauma.

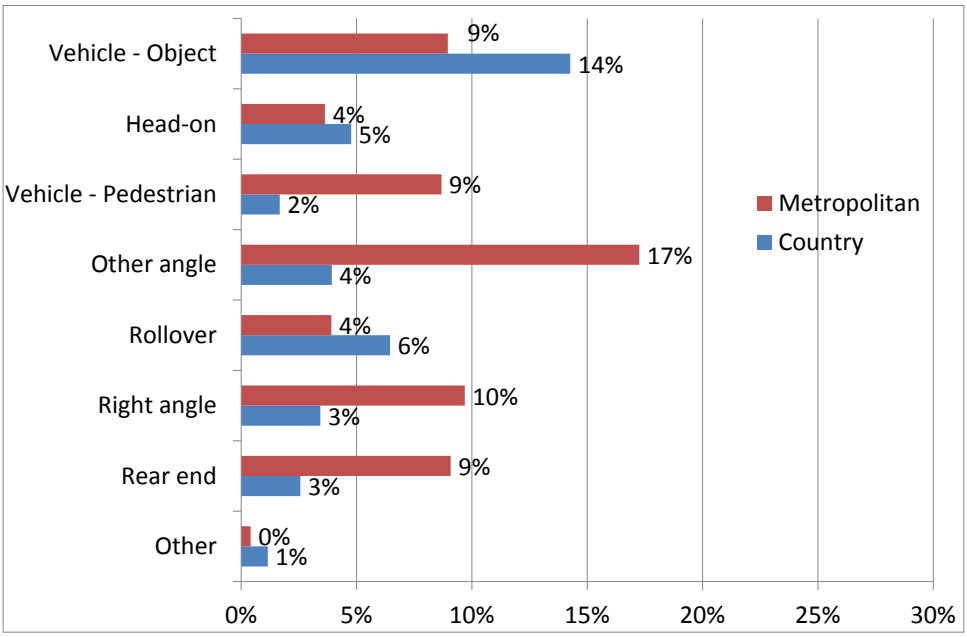
1.6.1 Distribution of fatalities by first impact types and urbanisation, for the five years ended 30 June 2016



For the five years ended 30 June 2016, vehicle-object impact was the first impact for 33 per cent of fatalities:

- 26 per cent on country roads
- 7 per cent on metropolitan roads.

1.6.2 Distribution of matched serious injuries by first impact types and urbanisation, for the first five years ended 30 June 2016



For the five years ended 30 June 2016, 62 per cent of matched serious injuries happened on metropolitan roads.

Serious injuries in multiple vehicle crashes (right angle, other angle, and rear end) are more common in metropolitan areas. Serious injuries in head on impact are the exception.

1.7 Objects

The crash data records the first object (if any) that a vehicle strikes and the second object (if any) that it strikes. A detailed analysis is beyond the current scope.

Two types of objects that are most common in serious casualties are categorised as:
- tree or bush
- utility pole

1.7.1 Number of fatalities in 2008-10 and 2014-16 which involved a vehicle striking a tree, bush or utility pole

	2008-10	2014-16
Tree or bush	268	225
Utility pole	77	78
Tree or bush, or utility pole	340	301
Other object or objects	191	138
No object	701	602
Total	**1,232**	**1,041**

In 2008-10, a tree or bush, or a utility pole was struck in 28 per cent of fatalities and 29 per cent of fatalities in 2014-16.

Most tree or bush fatalities were on country roads (80 per cent in 2008-10, 84 per cent in 2014-16). Utility pole fatalities were more evenly spread between metropolitan and country roads.

1.7.2 Numbers or matched serious injuries in 2008-10 and in the three years ended 30 June 2016 which involved a vehicle striking a tree or bush or a utility pole

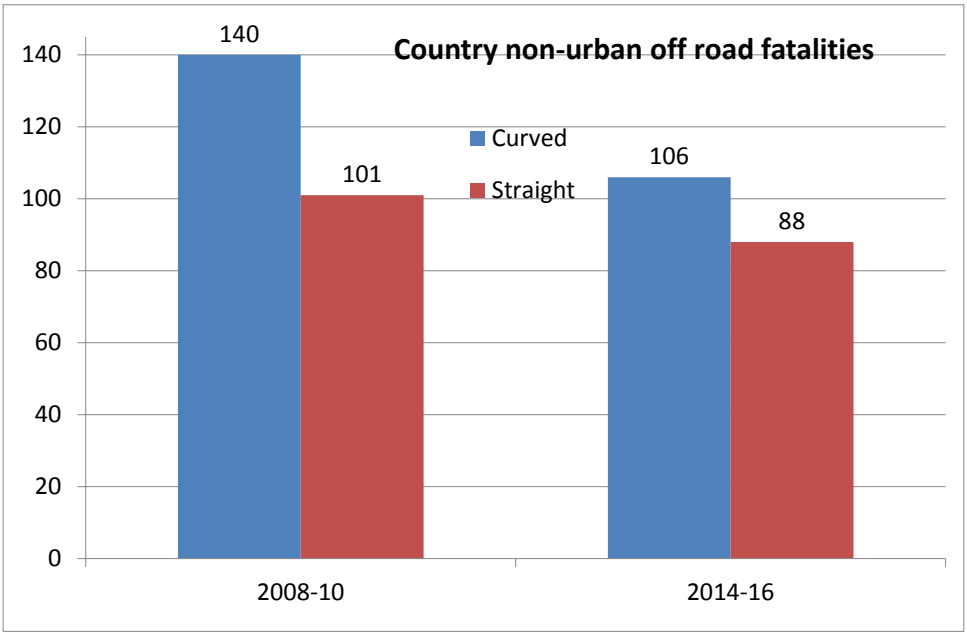
	2008-10	2013/14 to 2015/16
Tree or bush	1,876	1,941
Utility pole	1,000	923
Tree or bush, or utility pole	2,852	2,831
Other object or objects	2,580	2,845
No object	13,189	14,138
Total	**18,621**	**19,814**

In 2008-10, a tree or bush, or utility pole was struck in 15 per cent of matched serious injuries, and in 14 per cent in the three years ended 30 June 2016.

Most tree or bush matched serious injuries were on country roads (68 per cent in 2008-10, and 67 per cent in the three years ended 30 June 2016). Most utility pole matched serious injuries were on metropolitan roads (67 per cent in 2008-10, and 70 per cent in three years ended 30 June 2016).

1.8 Country non-urban fatalities

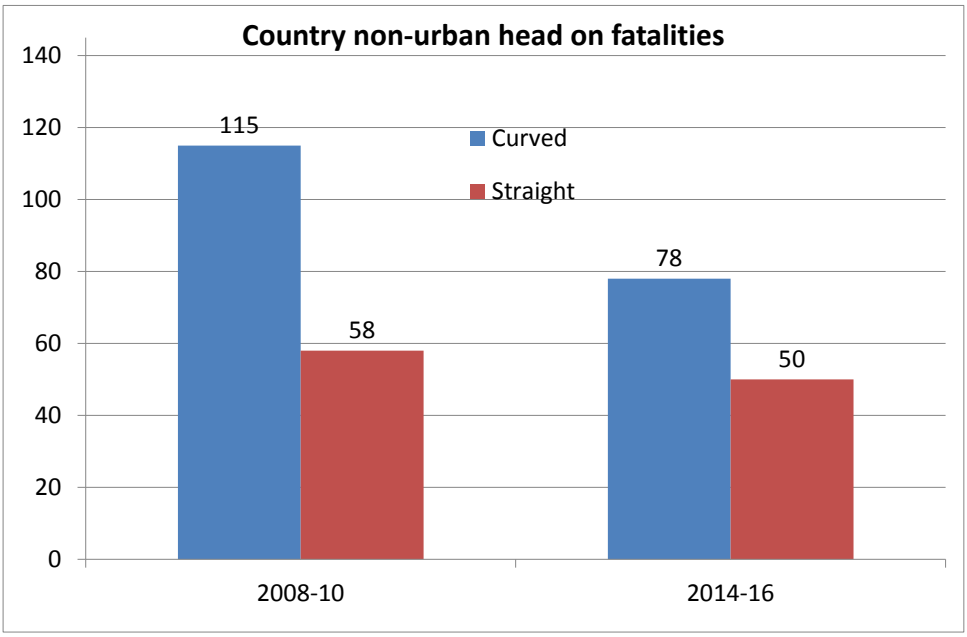
1.8.1 Off road fatalities on country non-urban roads by alignment, 2008-10 and 2014-16



Comparing 2008-10 and 2014-16, country non-urban off-road fatalities decreased by 20 per cent:

- on curves decreased by 24 per cent
- on straight decreased by 13 per cent

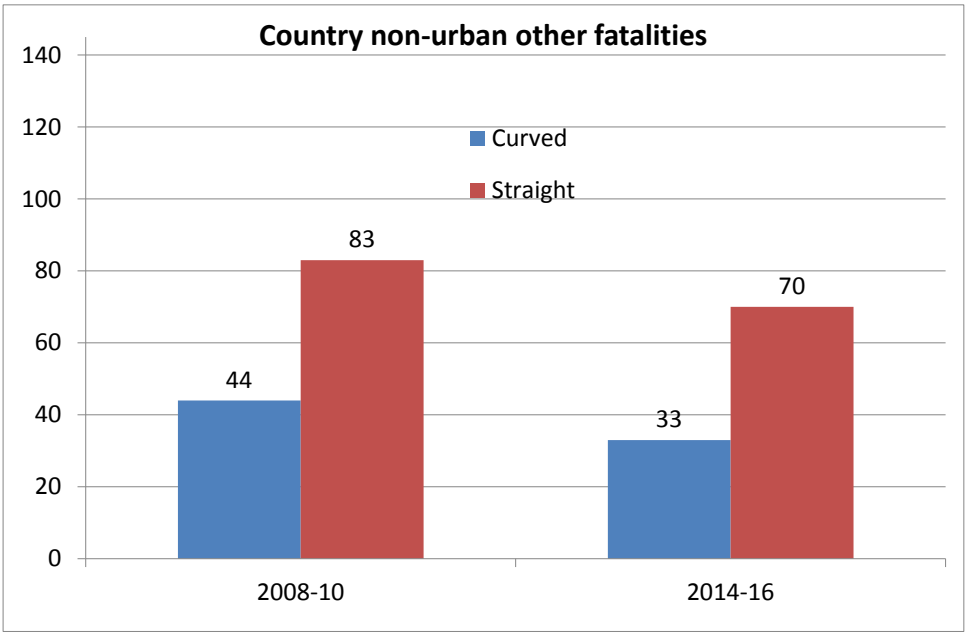
1.8.2 Head on fatalities on country non-urban roads by alignment 2008-10 and 2014-16



Country non-urban head-on fatalities decreased by 26 per cent:

- on curves decreased by 32%
- on straight decreased by 14%

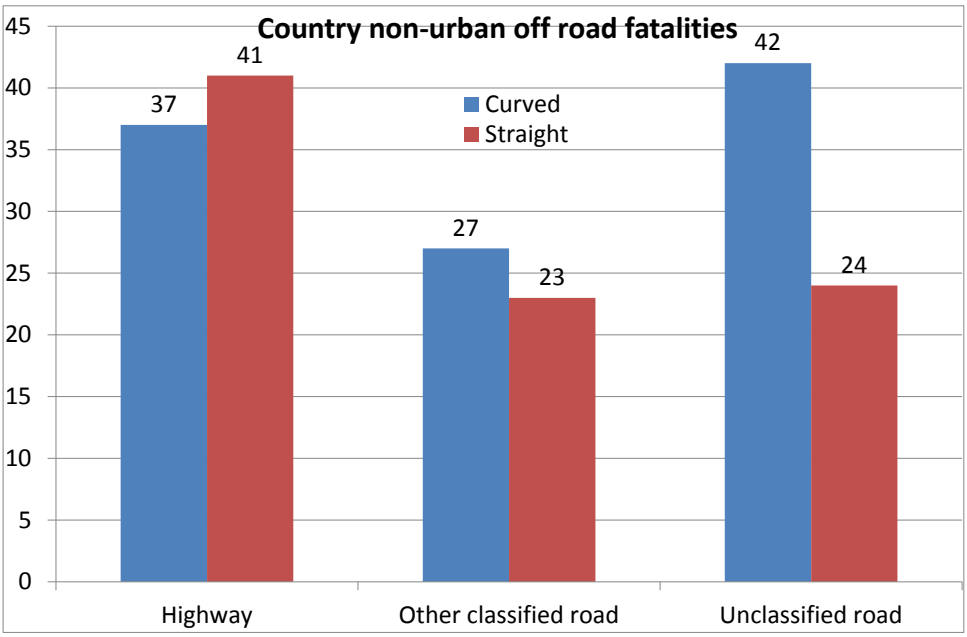
1.8.3 Fatalities other than head on and off road, on country non-urban roads by alignment, 2008-10 and 2014-16



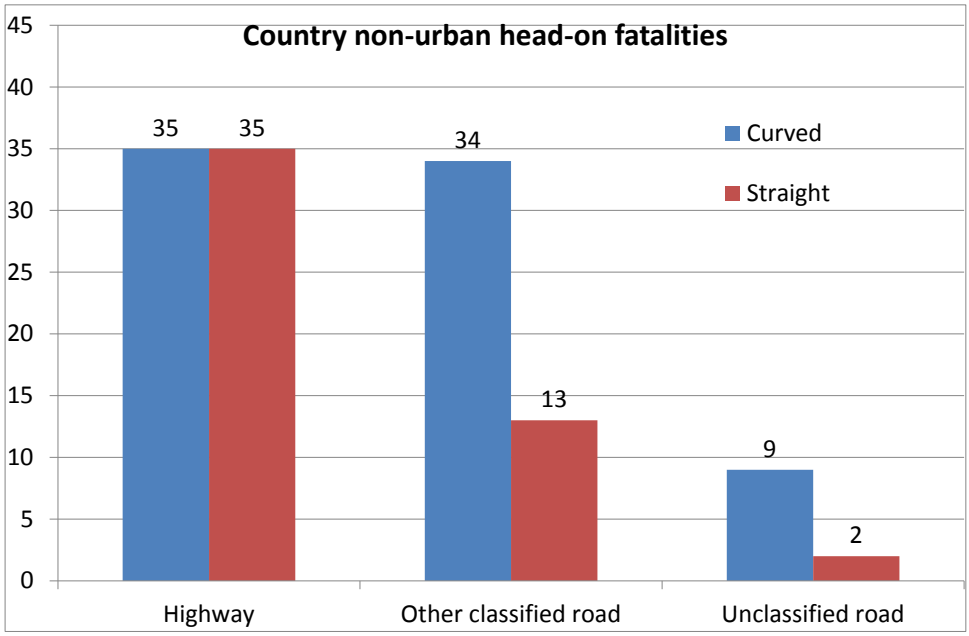
Other country non-urban fatalities decreased by 19 per cent:

- on curves decreased by 25 per cent
- on straight decreased by 16 per cent

1.8.4 Off road fatalities on country non-urban roads, by alignment and road classification 2014-16



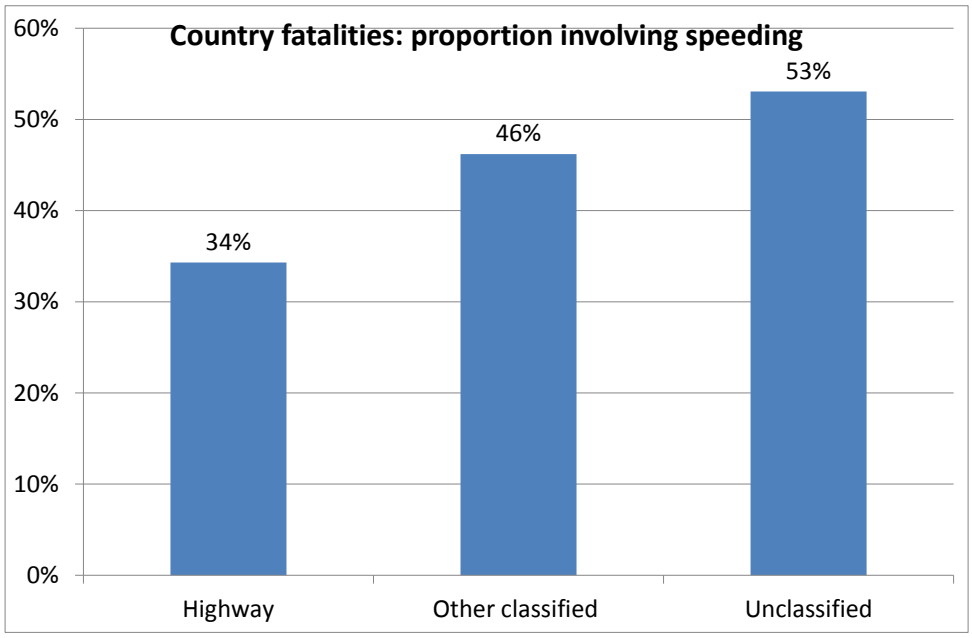
1.8.5 Head on fatalities on country non-urban roads by alignment, and road classification, 2014-16



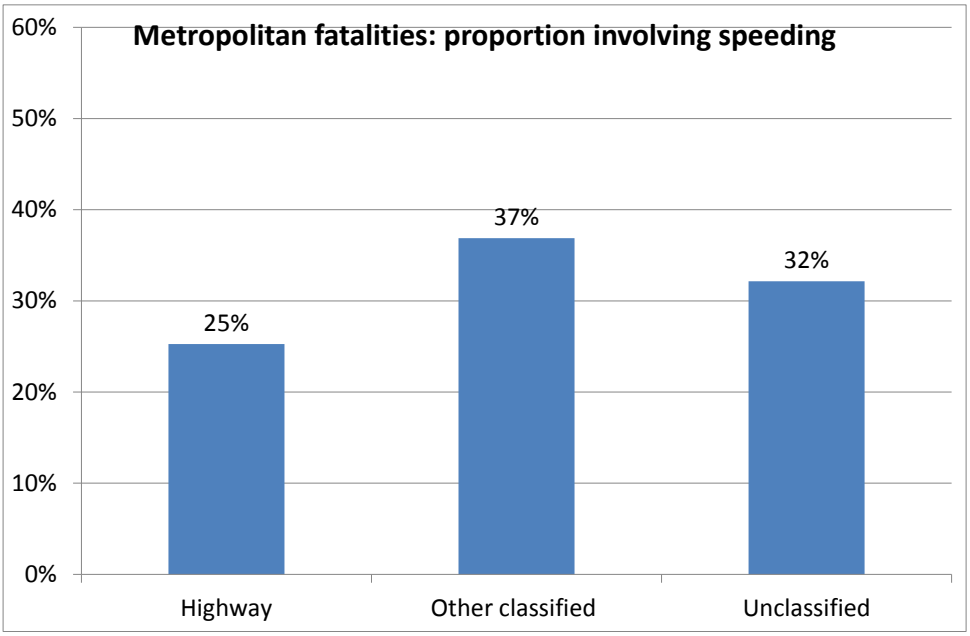
1.9 Speeding as a factor, urbanisation and road classification: fatalities

The proportion of fatalities considered to involve excessive or inappropriate speed depends on whether the crash happened on a country road and on the road classification. (In these graphs, “highway” incorporates freeways and state highways).

1.9.1 Proportion of fatalities that involved speeding, country roads by road classification



1.9.2 Proportion of fatalities that involved speeding on metropolitan roads by road classification



In the five years ended 30 June 2016, 711 of 1,756 NSW fatalities (40 per cent of fatalities) were considered to have involved inappropriate or excessive speed. Of these speeding related fatalities, 29 per cent happened on unclassified country roads. The figure below shows the proportion of the 711 fatalities that happened on each category of road, by classification and urbanisation.

1.9.3 Proportion of speeding related fatalities by urbanisation and road classification, five years ended 30 June 2016