WA Regional Road Network Speed Survey

Fact Sheet

Working together to prevent road trauma

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It has been well documented that lower speeds lead to fewer crashes, resulting in fewer deaths and serious injuries (Rowley, 2019). On Western Australian roads, speeding and speed related crashes have unremittingly been featured in the reporting of KSI (killed or seriously injured) figures on WA roads (Rowley, 2018). As such, ongoing evaluations and initiatives to assist in reducing travel speed in Western Australia is paramount to keeping drivers, passengers and pedestrians safe.

Background

Between 2013 and 2017, 4147 people were killed or seriously injured (KSI) on regional roads throughout Western Australia, with speed being assessed as a contributing factor in 15.8% of crashes (Road Safety Commission, 2019). Speeding has a significant impact on the rural road network and regional communities, as such ongoing evaluations and initiatives to assist in reducing speed in WA are vital.

To evaluate trends in speed, 13 annual speed surveys have been conducted from 2000 to 2018 reviewing the WA rural road network to evaluate trends and changes in driver speed compliance over time and its relation to the effectiveness of road safety programs (Sultana, 2019).[1] The survey data is collected from different speed limit roads across the rural road network where free flowing traffic conditions occur (Sultana, 2019).

The information included in this fact sheet has been taken from the 2018 annual survey report - *Trends in Driver Speed Behaviours on Rural Road Networks 2000 to 2018* (Sultana, 2019). Readers are recommended to review this report for more detailed information on the methodology, historical results, data analysis and recommendations. Copies can be accessed through the Main Roads WA www.mainroads.wa.gov.au and Road Safety Commission www.rsc.wa.gov.au websites.

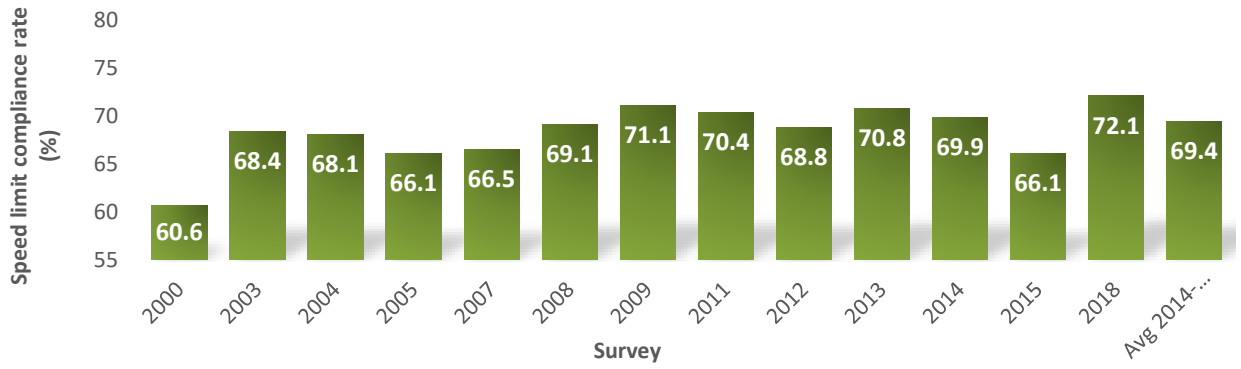
Overall Network Compliance

All Roads

When reviewing drivers speed compliance rates (the percentage of drivers that travel at or below the posted speed limit) across the thirteen speed surveys conducted since 2000, though overall improvements are noted, variation between survey years are seen (Sultana, 2019). In the baseline data conducted in 2000, 60.6% of vehicles surveyed demonstrated compliance with driving at or below posted speed limits, whilst in 2009 this increased to 71.1%, it then dropped to 66.1% in 2015 before increasing to 72.1% in 2018 (Sultana, 2019). Comparatively the average driver's compliance rates from 2014 to 2018 was 69.4% (Sultana, 2019). This average rate demonstrates significant improvements in drivers' compliance to speed limits on the rural road network since 2000 (Sultana, 2019).

Compliance on State and Local Roads

Since the initial survey in 2000, a 22.4% increase is noted in driver speed limit compliance on both state and local roads across the rural road network (Sultana, 2019). In 2000, 63.4% of drivers on state roads and 54.3% on local roads complied with or drove below the required speed limits (Sultana, 2019). In 2018, these rates increased to approximately 69.9% on state roads and 76.6% on local roads (Sultana, 2019). The latest survey suggests increased compliance on both state and local roads has been achieved over time with the 2018 survey demonstrating the highest compliance of speed limits on both road types since the initial survey in 2000. (Sultana, 2019).



Graph 1. *Copy of the Driver Speed compliance to speed limits across the rural road network 2000 to 2018* (Sultana, 2019, p. 18).

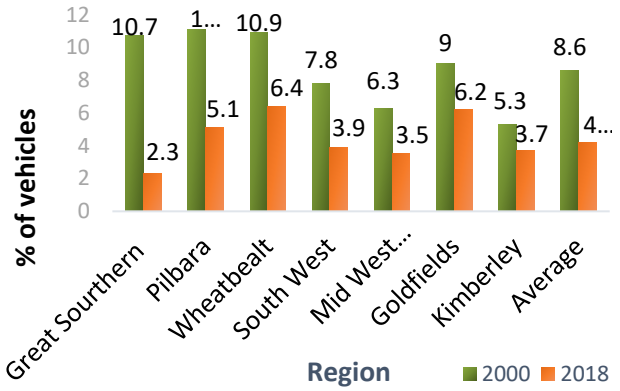
[1] Evaluating the effectiveness of road safety programs occurs through changes seen in speed compliance, excess speed behaviours of 10+km/h, 85th percentile and mean speeds (Sultana, 2019).

Motorcycle Drivers Compliance Rates

Analysis of the 2000 to 2005 surveys demonstrated motorcyclist's compliance with speed limits or driving below posted limits, was 61.5% (Sultana, 2019). When reviewing survey data from 2015 to 2018, the compliance rate fell to 60.7% in 2015, then increased to 67.3% in 2018 (Sultana, 2019). Though variations in motorcyclists' compliance is evident across the survey years, the 2018 survey results indicated that motorcyclists demonstrated the greatest increase in speed compliance.

Excess Speeds of 10km/hr above the speed limit.

In 2000, the initial baseline survey recorded 8.6% of drivers across the network travelling at speeds greater that 10km/hr above the speed limit. By comparison, the 2018 survey recorded a significant increase in compliance and a decrease in drivers travelling at speeds greater that 10km/hr above the speed limit (4.2%) (Sultana, 2019). In reviewing the 13 surveys, the 2018 results suggest a 51% reduction in the number of drivers engaging in speeds of 10 or more km/hr above the posted speed limits across the network has been achieved (Sultana, 2019). The graph provides a comparative view of the percentage of drivers in each region that exceeded speed limits by 10+km/hr in the 2000 and in the 2018 surveys.



Graph 2. *Copy of the percentage distribution of vehicles recorded in 2000 and 2018 that exceeded the speed limit by 10+km/hr by region (Sultana, 2019, p. 38).*

Class Vehicle Speed Compliance and Excess Speed

Compliance rates for Austroad class vehicles over the 2011 to 2018 survey period have identified triple road trains (Class 12) being one of the most consistent speed compliant vehicles on the rural road network which is followed closely by 4 or 5-axle trucks (Class 5) (Sultana, 2019). The lowest performing class vehicles have been identified as 3-axle articulated vehicles (Class 6) and B doubles or heavy truck and trailers (Class 10) (Sultana, 2019). In 2018, 3-axle articulated vehicles were additionally reported to be "2.4 times, more likely to exceed 10km/hr above the speed limit allowed for the vehicle class (that is 100km/hr) than the Class 1 (cars)" and are generally the least compliant to speed limits (Sultana, 2019, p 48).

Factors Impacting Speeding Behaviours

Throughout the surveys, several factors have been evaluated that may influence or impact driver speed. These include:

Speed Limit on Road: In 2018, driver compliance to speed limits found those travelling on 60km/hr (72.6%), 70km/hr (74.4%) and the 90km/hr (73.3%) roads all demonstrated the highest speed compliance rates (Sultana, 2019). The lowest level of driver compliance was seen by drivers on 80km/hr (69.9%), 100km/hr (69%) and 110km/hr (69%) roads (Sultana, 2019). Compliance rates on 50km/hr roads were also reported to be low at 53.3% in 2018, however, it should be noted that this is a 10.7% increase compared to the 2006 recorded data (42.6% compliance in 2006) (Sultana, 2019). The greatest increase in driver compliance to specific speed limits since 2000 has occurred on 60km/hr roads, which increased by 24.3% in the 2018 survey (Sultana, 2019). When considering all speed limits, drivers were estimated to be most likely to engage in excess speeding (10+km/hr above limits) on 100km/hr roads than in other speed limit areas (Sultana, 2019).

Day of the week: Across the surveys, weekdays have predominantly demonstrated the highest rates of driver speed compliance, whilst weekends have continued to be cited as having the lowest rates (Sultana, 2019). These results are replicated in the 2018 survey which found Sundays, followed by Saturdays, were the most common days of the week where vehicles are likely to travel 10+km/hr or more above the speed limit (Sultana, 2019). The most speed compliant days in 2018 were Monday, Wednesday and Thursday (Sultana, 2019).

Time of day: When reviewing all surveys, the most likely time where drivers may engage in excessive speeds of 10km/h or more above the spee d limit was between 7:00pm to 7:00am (Sultana, 2019). The least likely time where drivers may engage in excess speeds is estimated between 8:00am and 1:00pm (Sultana, 2019). In 2018, 5% to 11% of speeding drivers were recorded between 11:00pm and 6:00am on the rural road network (Sultana, 2019).

Region travelling through: Across all regions, driver's compliance to speed limits has shown improvements since the initial 2000 survey, however, differences between regions is reported. The highest performing regions across all surveys was reported to be within the Mid-West Gascoyne, Great Southern and the South West regions, finding under 5% of drivers engaged in excess speeds of 10km/hr or more above the posted limits (Sultana, 2019). The Wheatbelt, Goldfields-Esperance and the Pilbara regions were seen to have the lowest performance finding 5% to 6.4% of drivers engaged in excess speeds of 10km/hr or more above the speed

limit (Sultana, 2019). When reviewing the 2018 survey alone, the Kimberley (82.7%), followed by the Great Southern (79.4%), Mid-West Gascoyne (74.3%) and the Wheatbelt (72.6%) were reported to be the most speed compliant regions (Sultana, 2019).

Mean Speeds and 85th Percentile Indices

The evaluation of mean speeds and 85th percentile indices are also explored in the survey to support evaluations of driver speed behaviours and the effectiveness of road safety programs within the network.

Mean Speed

Mean travel speeds have demonstrated some variation across both the survey years and within specific speed posted limits. For instance, the mean speed of drivers reported in 2000 on 60km/hr roads was 59.8km/hr, this decreased to 57.2km/hr in 2009, and 56.8km/hr in 2011, before increasing to 58.0km/hr in 2012 (Sultana, 2019). By 2018, the mean speed rate was recorded at 55.1km/hr, suggesting a 7.8% overall decrease in the average speed drivers engage on 60km/hr roads since the 2000 survey (Sultana, 2019). As seen in the table below, in 2018; 60km/hr, 80km/hr, 90km/hr and 100km/hr roads all demonstrated significant reductions in their mean speeds in comparison to the 2000 survey (-4.7km/hr, -3.6%km/hr, -3.2km/hr and -4.6km/hr respectively) (Sultana, 2019). On 70km/hr and 110km/hr roads, the mean speeds remained relatively consistent with minimal changes being reported (-0.5km/hr and +0.08km/h respectively) (Sultana, 2019).

Summary

Since the baseline survey in 2000, improvements within the rural road network are seen in driver speed compliance over time (Sultana, 2019). The data collected has highlighted key environmental factors relating to speed such as time of the day, day of the week, region travelling through and speed limits on the road (Sultana, 2019). The results are suggested to provide evidence and indicators of the patterns, behaviours and factors that may influence driver behaviours whilst encouraging future initiative considerations (Sultana, 2019). Further evaluations have been suggested in the report for the utilisation of the data to investigate the relationship between speed compliance to speed enforcement initiatives, and considering the impacts/severity of road crashes relating to speed behaviours identified in the report (Sultana, 2019). The report additionally suggests that speed enforcement strategies should consider or incorporate temporal factors, road types, regions, and speed limits in future initiatives (Sultana, 2019). Despite improvements being seen, continued vigilance in reducing speed is paramount across local and state roads in the rural road network, to not only diminish unnecessary road trauma but improve road safety for all users.

	Year 2000 Survey		Year 2009 Survey		Year 2013 Survey		Year 2018 Survey		2000 v 2018
KM/H	**Mean Speed**	**85th %**	**Mean Speed**	**85th %**	**Mean Speed**	**85th %**	**Mean Speed**	**85th %**	**Mean Difference**
60km/h	59.8	68.1	57.2	65.4	57.0	64.8	55.1	63.3	- 4.7
70km/h	65.9	74.4	64.8	71.5	66.4	73.2	65.4	72.5	- 0.5
80km/h	77.9	85.6	71.1	83.4	72.8	82.5	74.3	84.1	- 3.6
90km/h	87.9	98.5	85.0	95.2	84.4	93.9	84.6	93	-3.2
100km/h	97.1	110.0	98.2	108.4	97.6	106.1	92.5	104.1	- 4.6
110km/h	102.1	114.9	102.3	113.2	100.2	112.6	102.9	112.6	+ 0.08
% of vehicles exceeding speed limit 10km/h above limit	8.6%		5.1%		5.0%		4.2%		-
Total % exceeding speed limit- all speed limits	39.4%		28.9%		30.1%		27.9%		-

Table 1. *Copy of data for survey years 2000, 2009, 2013 and 2018 only. Vehicle speed characteristics of mean speed and 85th Percentiles per speed limit on the rural road network (Sultana, 2019, p.xvi & 32).*

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Rowley, P. (2018). *Speed Management Information Sheet.* Retrieved May 2020. from https://www.rsc.wa.gov.au/resources. East Perth: Road Safety Commission.

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