

## Safe System Review of Fatal Crashes in the ACT

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### Abstract

The ACT Justice and Community Safety Directorate engaged the Australian Road Research Board to undertake a Safe System review of ten years of fatal crashes in the ACT. The review identified common fatal crash factors across Safe System pillars (roads, speed, vehicles, people, and post-crash care) based on crash data and reports from the Australian Federal Police and Roads ACT. The method developed allowed analysis of crash factors and identification of crash patterns to determine ‘gaps’ in the System that likely contributed to the cause and/or severity of each crash. Using this, countermeasures were developed to address these gaps across the Safe System pillars.

### Background

The ACT Justice and Community Safety Directorate sought to undertake a Safe System performance review of fatal crashes that occurred on the ACT road network over a ten-year period (2007-2016). The review covered an initial 114 fatal crashes that involved all road user groups.

Key aims of the study were to:

- Develop a method for evaluating fatal crashes that would assist identifying gaps in the Safe System approach to managing the ACT road network.
- Identify factors that contributed to cause and severity of fatal crashes broken down by Safe System pillar (roads, speeds, vehicles, people and post-crash response / care)
- Analyse the results of the Safe System review of ACT fatal crashes to inform the development of potential countermeasures to close these gaps, including infrastructure, road user education, policy and legislation

### Method

Crash data and reports for each fatal crash were received from the Australian Federal Police and Roads ACT. The crash data and reports for each fatal crash incident were reviewed by a team of road safety infrastructure and human factors experts to identify causal and severity factors contributing to each crash. These factors were categorised according to the Safe System pillars, including a proxy for post-crash care.

Contributing crash factors were analysed:

- Within each pillar to determine the common crash factors across the data set.
- By cross-tabulating various pillars to identify additional trends and links between pillars.
- To identify typical fatal crash profiles for each Safe System crash type.

Countermeasures were developed from the analysed results to address the identified Safe System gaps.

The bespoke database, crash factor coding, Safe System classification, and analytical methods developed during the crash review were based on a combination of road safety principals, existing crash dataset structures, previous studies, and project team experience.

### Results / Recommendations

Primary Safe System gaps and potential countermeasures for the five typical crash profiles are shown in Table 1.

**Table 1. Safe System gaps and potential countermeasures for typical crash profiles**

<b>Crash type</b>	<b>Primary Safe System gap</b>	<b>Potential countermeasure</b>
<b>Motorcycle (30%)</b>	Inexperienced riders	Improve rider training including graduated licensing scheme
<b>Run-off road (21%)</b>	Non-frangible roadside hazards	Review hazard locations with regard to clear zone and speed limit
<b>Intersection (19%)</b>	Older drivers 'looking but not seeing', or misjudging speed and distance	Review methods and procedures for ensuring fitness to drive
<b>Head-on (13%)</b>	Carriageways signed above Safe System speed for head-on collisions (70 km/h)	Reduce speed limit or consider need to separate carriageways (dual carriageway or median barrier)
<b>Pedestrian (12%)</b>	Speed limit exceeds Safe System speed for vulnerable road users	Reduce speed limit to 30 km/h in areas with high-pedestrian activity (commercial and retail districts, residential areas and areas with large numbers of child and elderly pedestrians)

Approximately 5% of crashes were considered atypical, and analysis did not reveal any patterns or trends within these crashes.

Other common factors identified across various crash types include:

- Increased severity for crashes where road users exceed Safe System speeds for the road environment
- Higher likelihood of younger male drivers being involved in a run-off road crash
- Drivers use of drugs and/or alcohol
- Older vehicles overrepresented across all crash types compared to age of entire ACT vehicle fleet
- Seagull intersections potentially exceeding safe traffic volume or speed

An additional outcome of this review was identifying the need for improved co-ordination and documentation of fatal (and serious injury) crashes, including identification of suicide crashes. It was concluded that such improvements would improve the efficiency and effectiveness of future Safe System assessments and provide road safety policy advisors and decision makers with a stronger evidence-based approach to developing holistic road safety strategies thus leading the way towards a zero death and serious injury future.