Undertaking a Safe System Audit

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Abstract

Before the release of the *Austroads Safe System Assessment Framework*, Safe System Solutions Pty Ltd developed a methodology and template to advance road safety praxis by undertaking Safe System Audits.

This paper outlines the principles of Safe System Auditing and uses as a case study - the Safe System Audit for the ACT Government in relation to on-road intersection activities such as windscreen washing, entertaining, collecting, selling and advertising.

The outcomes of the audit were a set of fifteen recommendations grouped into categories; safer road and roadside treatments, for safer vehicles, for safer road users, and for safer speeds.

Background

Safe System principles are an accepted part of road safety strategies. The underpinnings are that fallible humans will inevitably make mistakes when driving, riding, or walking. Nevertheless, road trauma is not inevitable. No one should be killed or seriously injured on our roads. Consequently, to prevent serious trauma, the whole road system must be forgiving, so that collision forces do not exceed limits that the human body can tolerate.

At the tactical level, there is considerable guidance available on the conduct of Road Safety Audits.

Before the release of *Austroads Research Report AP-R509-16 - Safe System Assessment Framework* Safe System Solutions Pty Ltd, a Victorian based road safety consultancy, has developed a methodology and template to advance road safety praxis by undertaking Safe System Audits.

Method

A Safe System Audit examines the four components of the Safe System shown in Figure 1 within a formal safety examination of a road-related program, project, initiative or activity. The Safe System Audit comprehensively assesses the safety of one or more of an existing road, intersection or length; a road investment project; a community road safety program; a roadside or on-road activity; a road transport policy or strategy.

Figure 1. Diagrammatic representation of the components of the Safe System

The audit then categorises identified speeds (Liu et al., 2012; Quimby et al., 1999) road and roadside treatments (Candappa et al., 2008; Moon and Mihailidis, 2013), vehicles and road user (Wierwille et al. 2002) features as:

1. **Primary treatments**: Safe System compliant treatments or features;
2. **Step Towards Safe System compliant** treatments or features;
3. **Safe System supporting** treatments or features; or
4. **Non-Safe System compliant** treatments or features.

The Safe System Audit provides advice on how to raise all road and roadside features into the **primary treatments** category, and suggests measures to implement Safe System principles into the speeds, vehicles and road user categories.

Results

As a case study of a Safe System Audit we will use, as an example, the Safe System Audit for the ACT Government undertaken by Safe System Solutions Pty Ltd in relation to on-road intersection activities such as windscreen washing, entertaining, collecting, selling and advertising.

The Auditors assessed the on-road intersection activities as having poor alignment with Safe System principles. The major reason for this poor alignment is the presence of a vulnerable road user in an environment where, if struck, the forces exceed that tolerable by the human body. Identified issues included the potential for high energy crashes between:

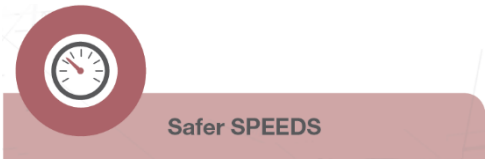
- windscreen washers and cars
- windscreen washers and motorcycles
- windscreen washers and commercial vehicles
- vehicle-to-vehicle crashes

The Auditors acknowledged that road authorities have competing demands, and thus provided a variety of recommendations.

Conclusions

The major recommendation in each category are:

1. Raised intersections or raised safety platforms



1. Raised intersections or raised safety platforms with advisory speed limits

5. Enforce existing restrictions on illegal movements/activities.

15. Ensure compatibility between permitted activities and deployed Autonomous Vehicle systems.

References

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