Introducing Rural Intersection Advanced Warning Signs in Western Australia: A collaborative forward planning approach

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Abstract

Emergent road safety treatments can pose a number of implementation challenges for road agencies. While there are strong incentives to accelerate the use of new treatments, institutional barriers can also constrain their introduction, and teething problems can temper the perceived success of pilot projects. These challenges have the potential to delay our achievement of zero road death and serious injury.

We profile recent research and policy development to support the introduction of Rural Intersection Activated Warning Signs (RIAWS) in Western Australia. We contrast the significant benefits of this approach against problems which arose during the introduction of other innovative safety treatments.

Background

Rural Intersection Advanced Warning Signs (RIAWS) display a temporary lower legal speed limit on a through road while a vehicle preparing to perform a conflicting movement is detected (Mackie et. al. 2015).

Similar technology has been installed or trailed in Sweden, the United Kingdom, and New Zealand. Examples are now being trialed by some Australian jurisdictions, including in Victoria and in South Australia. Typically, RIAWS are deployed at locations where full reconfiguration of an intersection is not immediately practicable due to cost constraints.

Main Roads has secured funding from the Western Australian Road Safety Commission to deploy up to five systems in regional WA. As part of this, GHD worked with Main Roads to develop *RIAWS Policy Guidelines*, *RIAWS Concept of Operation* and other supporting documents. This process involved step-wise development of policy and technical documents through consultation with a broad set of Main Roads internal stakeholders.

Method

A literature review of RIAWS and related technologies was conducted. This review obtained both published research, current policies, informal comments and insights, and draft versions of RIAWS related documentation from other jurisdictions. In parallel with the literature review, engagement with stakeholders within Main Roads was conducted by the project team. This included interviews with key regional offices and technical managers, and more formal discussions focused on the review of working documents drafted by the project team.

Discussion

Many concerns about the potential success of RIAWS deployment recurred throughout the engagement. In particular, concerns were raised about driver comprehension and compliance, legal enforceability, system durability and maintainability, behavior and performance, and the potential for RIAWS to be deployed at inappropriate locations at the demand of external stakeholders.

Through review of literature and research, the project team were able to inform and progress these conversations, and relate learnings and policy approaches from other jurisdictions to orient discussions toward how to progress document definition. For instance, criteria established by the NZTA (2015) for site selection were adapted and incorporated into the policy document, revised to suit Western Australian conditions following discussions with key regional staff. The project team were able to adopt an iterative research and engagement approach to ensure the development of the policy addressed internal stakeholder concerns and practical operational needs, through translation of learnings from interstate and overseas. For instance, the project team were able to consider likely signage activation patterns against existing traffic data by drawing on the reviews of RIAWS systems operating in New Zealand.

Main Roads has been able to benefit from understanding the practical challenges encountered during RIAWS installations in other states, such as monitoring and maintenance activities.

In contrast, Vehicle Activated Speed Signs (which display the speed limit when a driver travelling at excessive speed are detected) were deployed at three sites in WA without development of policy and technical documentation. These devises posed a number of unanticipated operational problems, and further roll-out is not supported without approved policy and technical guidance. The experience of this project contrasts starkly with the RIAWS approach.

Conclusion

The proactive and relatively cautious policy development process conducted by Main Roads has identified a number of perceived risks to the successful introduction of RIAWS in Western Australia. Coupling the engagement against a broad desktop research approach was effective in enabling discussions within Main Roads to be informed by the experiences and empirical results obtained in other jurisdictions.

While slower than rapidly installing and trialing equipment, this approach has clear value in maximizing the benefits of installations through early research. In doing so, agencies may draw on the evidence documented in published research, on the potential approaches exemplified in other jurisdictions' draft policies, and on the deep tacit knowledge held across the working units of a large road network authority.

References

Mackie, H., and Scott, R. 2015. Rural Intersection Active Warning System (RIAWS) Trial (Final Report). Auckland: Mackie Research and Consulting Ltd.

NZ Transport Agency. 2015. Specification and Reference Manual for Rural Intersection Active Warning System. (Draft September 2015).