

# The development of an intelligence-based deployment model to enhance Road Policing service delivery: A case study

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(This article was the winner of the Police Practitioner's Award at the Australasian Road Safety Conference held in Canberra in September 2016).

## Abstract

New Zealand Police's Southern District (SD) has been facing increasing and competing demands for Road Policing service delivery. Road Policing (RP) was conducted in silos and it was unclear if activities and deployments reflected risk. An intelligence risk assessment was developed that identified the safety risks and priorities across the district, which was compared with current practice. A deployment model was developed to align with risks, allocate staff and resources based on demand and the integration of RP with other workgroups. This model is put forward as an evidence-based means to aligning deployment and resources to risk and shifting demands.

## Background

Geographically, SD is New Zealand's largest district and has a widely dispersed rural population. This being a popular region for tourism means visiting drivers also create substantial seasonal increases in traffic volume. RP staff were split between multiple teams and had four separate reporting lines. RP teams decided where to deploy (often based on 'gut feel' and experience) and did so independently of other groups, which led to parts of the network being saturated and others under-patrolled. This also created shortfalls in equipment and vehicles. Lack of a coordinated approach to deployment meant it was unclear if temporal and spatial risks were being appropriately prioritised, and RP was not aligned well with other work groups.

## Intervention

1. Intelligence district road risk profile (DRRP) created to identify risks and priorities.

An intelligence product was developed to identify priorities and top risks in SD, including: long and short term trends, hotspots, top risk factors and key journey routes (Figure 1). This product presented a complete picture by combining data from a wide array of sources, including: traffic crash reports, motor vehicle injury claims data, offence data, behavioural and attitudinal data, GIS crash maps, police reported traffic incidents and vehicle stops, community complaints, hospitalisation data, and the community risk register.

2. Compare and contrast with current practice to seek opportunities to address the risks.

The findings of DRRP were compared against: current practice and activities undertaken, staff allocated to role types, rosters, deployments and taskings across the district, and equipment resourcing.

3. Realignment of staff and resources to address the demand/risk and integrate this with other parts of the business as part of the wider deployment plan.

Mismatch was revealed between what the DRRP identified as risks, and where, how and when staff were being deployed. Non-RP groups were introduced to the findings and included in the development of a deployment model.

4. Equipment access and type assessed and reallocated

Vehicles and tactical equipment was no longer assigned to areas, workgroups and individuals, but assigned based on shift tasking requirements. This provided staff with access to equipment when and where it was needed to carry out duties and also freed up seven patrol vehicles.

5. Create a deployment model to align with risk and demand

SD RP was restructured so that staff from the all areas reported to the district Road Policing Manager. This allowed for staff to be rostered on for shifts that matched local risk profiles, which varied by type (urban/rural/highway), day of week and time of day. Specific changes made include:

- Shift rosters altered and staff relocated to provide optimum coverage.
- Staff rotated through areas to compensate for moving risk patterns.
- Activities undertaken and role types aligned to local risk profiles.
- RP deployment integrated into other workgroups' deployment.

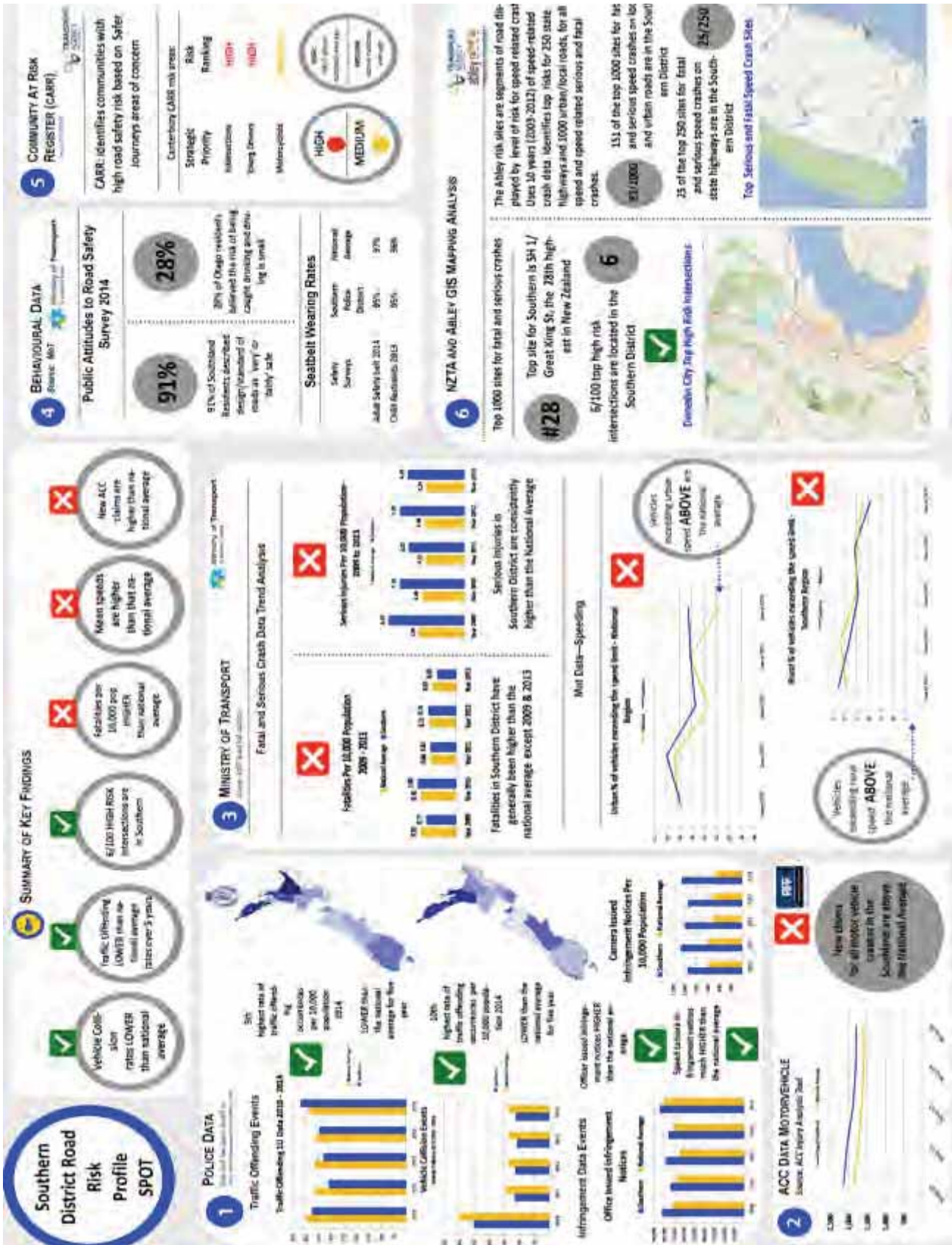


Figure 1. Sample summary page of DRRP intelligence report

- Enhanced performance monitoring and reporting across RP and non-RP workgroups.

#### 6. Monitoring, evaluation and adjustment

The structure changes and deployment model were successfully implemented in January 2016. An adjustment period of four months was allowed for where issues and risks are identified and corrected and changes are progressively implemented. The outcomes of the deployment model will be evaluated in 2017 once the final structure has been operating for 12 months. The evaluation will make comparisons against control periods to assess: alignment of officer deployment and activity with the top risks; output levels; traffic offending; crashes and hospitalisations.

## Conclusion

This case study provides a practical model of how intelligence and demand data can be used to perform a robust assessment of the current state of practice and deployment against evidence-based priorities and risks. The SD RP deployment model provides a platform for staff and resources to be allocated to best address risk and shifting demands, producing efficiencies and more effective service delivery. The evaluation of the intervention will assess the key outcomes and identify opportunities for improvement, providing a platform for other Police districts to optimise their Road Policing

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# Innovative weather-activated variable speed sign trial – a first for road safety in New Zealand

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## Abstract

Linking the Waikato and Bay of Plenty is the nationally strategic State Highway 29 (SH29) over the Kaimai Range. Between 2007 and 2015 there were 267 crashes and data identified 70% were in wet weather with 40% driving too fast for the conditions. This prompted development of a system which encourages people to drive at speeds appropriate to the road and conditions. The system is New Zealand's first to use weather-activated road signs with adjustable speed limits - commissioned in November 2015. The objective of the innovative two year trial is to educate drivers to better understand speed limits in adverse weather.

## Background

The development and implementation of the Weather Activated Variable Speed Limit signs (WAVSL) trial is part of the Government's *Safer Journeys* road safety strategy, to reduce the number and severity of crashes. Managing speeds is crucial as the outcome of all crashes is strongly influenced by the impact speed. The *Safer Speeds Programme* promotes helping people increasingly understand what travelling at safe speeds means.

The SH29 Kaimai Range has a poor crash history, with unpredictable, and at times dangerous, weather at the summit. The 100km/h speed limit did not take into

consideration adverse weather and studies show that drivers did not adjust their speeds, attempting to travel 100km/h in poor conditions; compromising theirs and others' safety.

As the existing static reflective signs were not able to show temporarily reduced speed limits another solution was sought.

## Innovative thinking

The WAVSL system aims to encourage drivers to drive at safe and appropriate speeds during adverse weather conditions.

It does this through an operational system for varying the speed limits on a road where significant changeable conditions result in increased risk, initiating the variable speed limits only during the time of the adverse conditions. Once activated, the speeds are enforceable by Police.

The 12km trial site has two zones; the eastern flank is 8km and the western flank is 4km. Following comprehensive consultation with the community, Transport Agency safety advisors and NZ Police it was agreed that the speed reductions for adverse weather would be set for 80km/h for the eastern flank and 60km/h on the western flank.