

Enforcement Targeting to Risk: Bridging the Gap Between Concept and Implementation

Senior Sergeant Carey Griffiths – New Zealand Police

Phone: +64 3 4714998
Fax: +64 3 4799360
E-Mail: carey.griffiths@police.govt.nz

Biography

Carey Griffiths joined the NZ Police in 1985. He has worked in a range of roles, including General Duties, CIB and 7 ½ years as a Prosecutor. In February 2002 he transferred to Dunedin as the O/C of the Southern District Highway Patrol, and is currently the Road Policing Manager for the Southern District Police.

Abstract

In the New Zealand Road Safety Programme (2002 – 2003), reference was made to the 1997 introduction of a prototype planning tool – Risk Targeted Patrol Plans (RTPP) – that *“allocate New Zealand Police strategic hours to known road safety risk, days of the week, times of the day, areas, routes and locations”*.

The purpose of these plans was to ensure the optimal targeting of patrols according to risk, and to provide support for both locally and nationally planned road safety promotion campaigns. The RTPP process was intended to provide a complete feedback loop between officers, supervisors and analysts to ensure timely reporting of enforcement action taken and measured progress of those actions.

Although conceptually sound, in terms of actual implementation the RTPP process was often conducted in name only, and, in many districts, either lapsed into disuse or was completely disregarded by enforcement staff, who decided priorities according to their own perceptions. In short, there was a “gap” between concept and implementation.

The Southern Highway Patrol has developed a simple tool for utilising the RTPP process in the field, thus maximising the value of the intelligence analysts and enabling quality information sharing between front line staff, supervisors and analysts to achieve:

- measurable road safety outcomes;
- quality analysis of enforcement versus crash risk in specified locations;
- optimal use of resources;
- performance management of staff together with enhanced accountability;
- front line “buy in” into the process.

Introduction

This paper outlines the processes utilised in the Southern Police District to effectively target Highway Patrol staff to areas of greatest risk. Enforcement officers operating in isolated rural settings exercise a great deal of common sense and initiative in determining their daily priorities, so systems needed to be flexible enough to not override their decision-making

processes. It was also recognised that feedback from the staff concerned was an important part of the intelligence cycle, and that the creation of unnecessary paper work was to be avoided.

The Southern Police District

The Southern Police District is one of the 12 New Zealand Police Districts, and is made up of the Otago and Southland Regions. These regions are broken up into 8 Territorial Local Authorities, consisting of Dunedin, Waitaki, Clutha, Southland, Central Otago, Queenstown Lakes, Invercargill and Gore. The District's population is approximately 280,000 people, distributed across a large rural area, including Invercargill (approx. 55,000 people) and Dunedin (approx. 120,000 people). Being in the lower part of the South Island, the climate tends towards extremes of cold in winter, with snow and ice being a regular event. There is a large rural road network comprising 2,090 km of state highways and 15,618 km of other roads, many of which are winding and hilly.

Tourism plays an ever-increasing role in the District, with Statistics New Zealand recording growth (New Zealand-wide) from 1,517,559 overseas visitor arrivals in 1999 to 2,062,423 in 2003 – a total growth of 35.9% over five years. Areas such as Central Otago and Milford Sound attract large numbers of tourists.

Implementation of the Highway Patrol

In late 2000, the National Road Policing Manager, Superintendent Steve Fitzgerald made a business case to the Board of Commissioners, proposing the establishment of a New Zealand Police Highway Patrol Unit. This proposed utilising an increase of 337,000 hours of dedicated officer time recommended by the Safety (Administration) Programme, (S(A)P), baseline review group and supported by the National Road Safety Committee (NRSC). The goal was to reduce road trauma on the state highway network, as at that stage 39% of the social cost of crashes occurred on these roads. The expected reduction in road trauma resulting from improved driver behaviour due to the increased police presence on these roads meant that the proposed initiative had an estimated benefit to cost ratio of 7.6:1, and this had a significant influence on the decision to implement the Highway Patrol.

On 1 December 2001, the Highway Patrol group became fully operational, with a full complement of 225 officers nation-wide. The Southern Police District received 17 of these positions, with one senior sergeant, three sergeants and thirteen constables stationed throughout the region. This group is a District group, traversing all 8 of the Territorial Local Authorities, and answers to the District Commander via the District Road Policing Manager.

Resource Allocation

A major recommendation of the Review of the S(A)P in 1998 was that Police strategic enforcement hours should be targeted more closely to road safety risk using the road safety resource allocation model as a basis. Strategic hours are defined as those allocated to the Police Outputs of Speed, Alcohol, Restraints and Visible Road Safety Offences.

Part of the response to this was the development of a prototype directed patrolling report known as a "Risk Targeted Patrol Plan" (RTPP). This concept had been first proposed in 1997.

The aim of the RTPP was to allocate strategic enforcement hours to known safety risks by location and time, and involved working with Land Transport Safety Authority (LTSA) engineers to identify sites and times with a history of crashes.

In February 2000, the Baseline Review of the S(A)P identified that significant improvements in road safety would be achieved through the use of “intelligence-led policing”. This involved a decentralised intelligence analysis model, with each district receiving an analyst, together with 2 strategic analysts to be based at the Office of the Commissioner. By 2001, all of these positions were in place.

Three Tiers of Risk Targeted Road Policing

Risk Targeted Road Policing has three tiers:

1. **The Annual NZ Road Safety Programme (NZRSP).** This is the basis of the model, planning and allocating strategic enforcement resources at the national, District, and territorial local authority level;
2. **A quarterly biannual Road Safety Action Plan (RSAP).** This involves a collaborative approach at a District level between key partners (LTSA, Road Controlling Authorities and Police) to identify risks, objectives and targets;
3. **Weekly/monthly RTPPs.** The initial concept was for Road Policing Analysts to issue them to supervisors responsible for staff delivering strategic hours, and required sufficient information so that the supervisor could direct the tactical enforcement of strategic hours to support the objectives of the RSAP.

The RTPP process was intended to provide a complete feedback loop for analysts, supervisors and patrol officers to achieve the required safety outcomes. The weekly/monthly RTPP process is of primary concern to enforcement officers, as it is at this level that their daily duties and responsibilities are determined.

Limitations of the RTPP Process

The degree of detail in the annual NZRSP was of limited interest to most front line officers, who were primarily concerned with the daily requirements of their role. Although every effort was made to educate staff on overall strategic goals, many were understandably concerned with activities that affected them at the more fundamental level of daily deployment.

At the time of the inception of the Highway Patrol, there was no one overarching document that determined the content of a Risk Targeted Patrol Plan. Utilisation of RTPPs also varied from District to District, with variations including:

- No RTPPs in place at all;
- Highly specific RTPPs that broke down an officer’s activities into daily (and sometimes hourly) deployments into specific areas;
- RTPPs that focussed on offenders rather than strategic outcomes;
- RTPPs generated by sergeants with little input from analysts; and
- RTPPs generated by analysts with little input from front-line staff.

In addition, RTPPs varied widely according to the interpretations of staff implementing them. Anecdote revealed that many staff would receive an RTPP and simply ignore it, letting the day develop according to their own preferences. Some were somewhat cynical about RTPPs being generated by analysts, as there was a general belief that “enforcement staff are out there and therefore know best”.

Discussion with front line staff and supervisors from the various Districts revealed that many areas were either prescribing to a minute detail the daily activities of staff, (considered extremely inflexible), or were providing limited value in terms of achieving the strategic goals. A common theme was disregard for the system by many staff.

The challenge for the Southern District was providing a mechanism for Highway Patrol staff to provide quality information to the Road Policing Analyst, whilst receiving quality feedback in return. The main aim was to reduce unnecessary paperwork whilst maintaining quality information flow in both directions.

Mechanisms Adopted by Southern District Police

In 2002, the Road Policing Analyst for Southern, Kristi-Ann Blenkhorn, developed a “CRASH” manual (**C**rash **R**isk **A**nalysis by **S**ector **H**ighway). This involved an in-depth analysis based on LTSA data as to crashes by season and by location. Each TLA received specific data on where crashes occurred and the reason behind them. This manual subsequently formed the basis of the initial information flow to the Highway Patrol in terms of risk locations, and has been regarded as a “best practice” model nationally.

The Southern District also maintains an “Events” register, available to all staff, that records major events that may require road policing attention. This includes a number of major tourist events that generate large volumes of traffic and a range of potential high risk behaviours including speeding, dangerous overtaking and driving while under the influence of alcohol.

Coupled with the Events Register is the Last Drink Survey, which uses arrest and drink-drive information to identify where an offender had their last drinks before apprehension. This enables problem premises or locations to be targeted, and is a significant source of data for drink drive operations and targeting.

The Southern District in 2001 also initiated the sector coding of highways. This involved dividing highways into 15 – 20 km “segments”, and applying a 4-digit sector code to each segment. Segments were delineated by natural boundaries to enable staff to readily identify where each sector lay. The codes were based on the state highway number, followed by consecutive numbering. By way of example, state highway 1 started at 1001 and upwards, state highway 8 started at 8001 and upwards and so forth. The 4-digit number also simplified data entry.

This approach enabled crash data to be plotted against particular sectors to enable analysis of the level of risk for each section of state highway. The Road Policing Analyst, in conjunction with the local LTSA engineer, determined a level of “risk” per sector based on the total number of fatalities and injuries recorded against it. These risks were rated from “1” (High risk), through to “4” (low risk), and graphically represented on maps as coloured segments determining the relative risk of each sector of highway.

Staff could then see at a glance where the higher risk sectors of highway were, which considerably simplified the planning process. As crash trends change only slowly over time, maps remained current for extended periods. These maps have also proved to be of significant public interest, as a link could be drawn between enforcement and risk, and this helped graphically demonstrate that Police were focussed on reducing trauma.

The sector codes and risk ratings were published for all staff, and an example is attached as **Appendix “1”**. A sector priority map is attached as **Appendix “2”**.

In addition, the New Zealand Police Infringement notice system allows a field for a sector code, so all notices written against a particular sector can be analysed and compared with crashes for that sector. An analysis can thus be conducted of the effect of enforcement in a particular sector against crashes recorded in that sector.

Another benefit of this system is that it enables the identification of sectors where it is clear that enforcement is having little effect, which then supports proposals for an engineering solution to be considered.

Application to the RTPP Process

In 2002, discussion was held between supervisors and the analyst as to how to best convey the risk areas to enforcement staff. In doing this, the following principles were adopted:

- The base document for risk was the “CRASH” manual;
- Additional feedback on specific events was based on a spreadsheet outlining events throughout the District; (the “Events” schedule);
- Additional information was supplied via the “Last Drinks” survey;
- Regard should be had to national campaigns and advertising supporting enforcement activity;
- The mechanism for feedback on frontline activities was the correctly sectorised infringement notice coupled with feedback from the public and staff (i.e. paperwork should be minimised in order to maximise “on-road” time); and
- Feedback from the analyst should be performance data in terms of outputs, plus regular analysis of activities and crashes per sector to determine the effectiveness (or otherwise) of tactics.

In doing this, the feedback loop was completed, with the analyst providing base data to staff, who enforced accordingly, with resulting offence notices and crash statistics providing data on the effectiveness of the enforcement activity to enable further planning.

The concept was that front line staff would be assigned particular sectors for periods of a week or longer, thus giving them “ownership” of the problems on that sector. Blind adherence to the sector was not required, provided that the officer used common sense in dealing with it. The advantage of this approach was that staff could be held accountable for enforcement in particular areas, whilst maintaining the flexibility to deploy elsewhere as traffic and weather conditions dictated.

An additional advantage was that performance monitoring of staff was enhanced, with the ability to monitor activities over time in particular sectors.

The Process

The process for supervisors was a simple one, following the steps outlined below:

1. Supervisor identifies the risk areas to be targeted based on the CRASH manual, information from staff and other supervisors, the “Event” register, “Last Drinks” Survey and their own observations;
2. Supervisor identifies the supporting advertising or national campaigns supporting any enforcement activity;
3. Supervisor allocates staff sector ranges and times according to the relevant risk (priority “1” sectors have the greatest priority for allocation) and disseminates the

RTPP to staff. Risks were not identified to a minute level, but kept at four to five main areas of concern.

Feedback was simple in that staff generating infringement notices automatically provided information on where their activities were based, and analysis could then be conducted on the effectiveness of those tactics. At the end of each month, the supervisor would note any additional information on the RTPP form, which was returned to the analyst. An example of the monthly form is attached as **Appendix “3”**

This process was simple, yet informative, and adopted readily by staff.

The overall premise is that Highway Patrol staff are expected to help reduce crashes by modifying road user behaviour. In past years, much focus was placed on identifying particular “black spots” and targeting resources accordingly. What was apparent is that people crash as the result of poor driver behaviour, the detection of which may not be simple at black spots. For that reason, it is considered that as long as the behaviour is addressed in the area surrounding particular black spots, this will have an effect on crashes regardless of the particular location where they are detected. By way of example, motorists may crash on a particular corner because they drive too quickly for the conditions on the roads leading to and from that corner. Speed enforcement on any of the roads leading to that area is expected to have a similar or better effect to enforcing on the corner itself (which may be impossible due to location or other reasons). For that reason, sector “ranges” are allocated to staff rather than specific locations. This approach therefore seeks to address crash promoting behaviours before drivers reach the specific crash black spots where these behaviours pose the most risk.

Results

The process has been readily adopted in the Southern Police District, and other District supervisors have adopted it, or variations thereof, for their own use. Crash statistics from 2002 to 2003 have indicated the following results:

(Source: LTSA Crash data 2002 – 2003)

Crash Type	2002	2003	Change
Total Injury Crashes	1412	1298	Down 8%
Fatal crashes	33	36	Up 9%
Serious casualties	458	425	Down 7%
Minor casualties	1678	1464	Down 13%
Rural injury crashes	650	582	Down 10%
Rural alcohol crashes	78	55	Down 30%
Rural speed crashes	161	131	Down 19%

Summary

Changes in crash reporting rates in the Southern Police District mean that comparisons with years prior to 2001 has been difficult. Due to significant improvements in crash reporting, the 2002 – 2003 data is considered highly reliable and is supported by hospitalisation data that indicates that drops in crash numbers are due to actual drops in crashes and not variations on reporting rates.

Deployment of the Highway Patrol has resulted in a significant increase in enforcement on the state highway and rural network and a clear reduction of road trauma. The overall results are very pleasing, with only fatalities running against the trend. Given the small number of

fatalities, the short time scale, and the reductions in all other areas, this would appear to be an unfortunate anomaly. Whilst fatalities increased by 9%, the actual increase in numbers was only 3 deaths, while injuries and hospitalisations are considered to provide a more accurate picture. The reduced number of injuries and injury crashes is a very pleasing result in such a short time, and this is a definite downward trend.

The Southern Police District are confident that the RTPP process adopted is flexible, provides sensible information as to risks in a way that can be understood and accepted by front line staff and the public. It is considered an effective way of monitoring the deployment of staff and resources to risk and a way of monitoring both the effectiveness of enforcement tactics and the performance of staff. Media coverage has been positive, and the Southern Police enjoy a good public profile.

The challenge over coming years is to maintain the momentum, and to expand the RTPP process to all traffic staff throughout the Southern District. Work has gone into mirroring the latest RTPPs with seasonal variations, and aiming at a quarterly seasonal RTPP to match the different crash risks according to weather and driver behaviour. The process is constantly developing.

References

New Zealand Road Safety Programme 2002 – 2003 (LTSA/New Zealand Police)

New Zealand Road Safety Programme, Safety (Administration) Programme 2003 – 2004(LTSA/New Zealand Police)

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2000/2001 S(A)P Business Case: New Zealand Police: Highway Patrol - Fitzgerald, Steve.

Southern Police District CRASH Manual (2002) – Blenkhorn, K.

Keywords

Risk Targeted Plans, RTPP, Safety (Administration) Programme, New Zealand Road Safety Programme, Highway Patrol

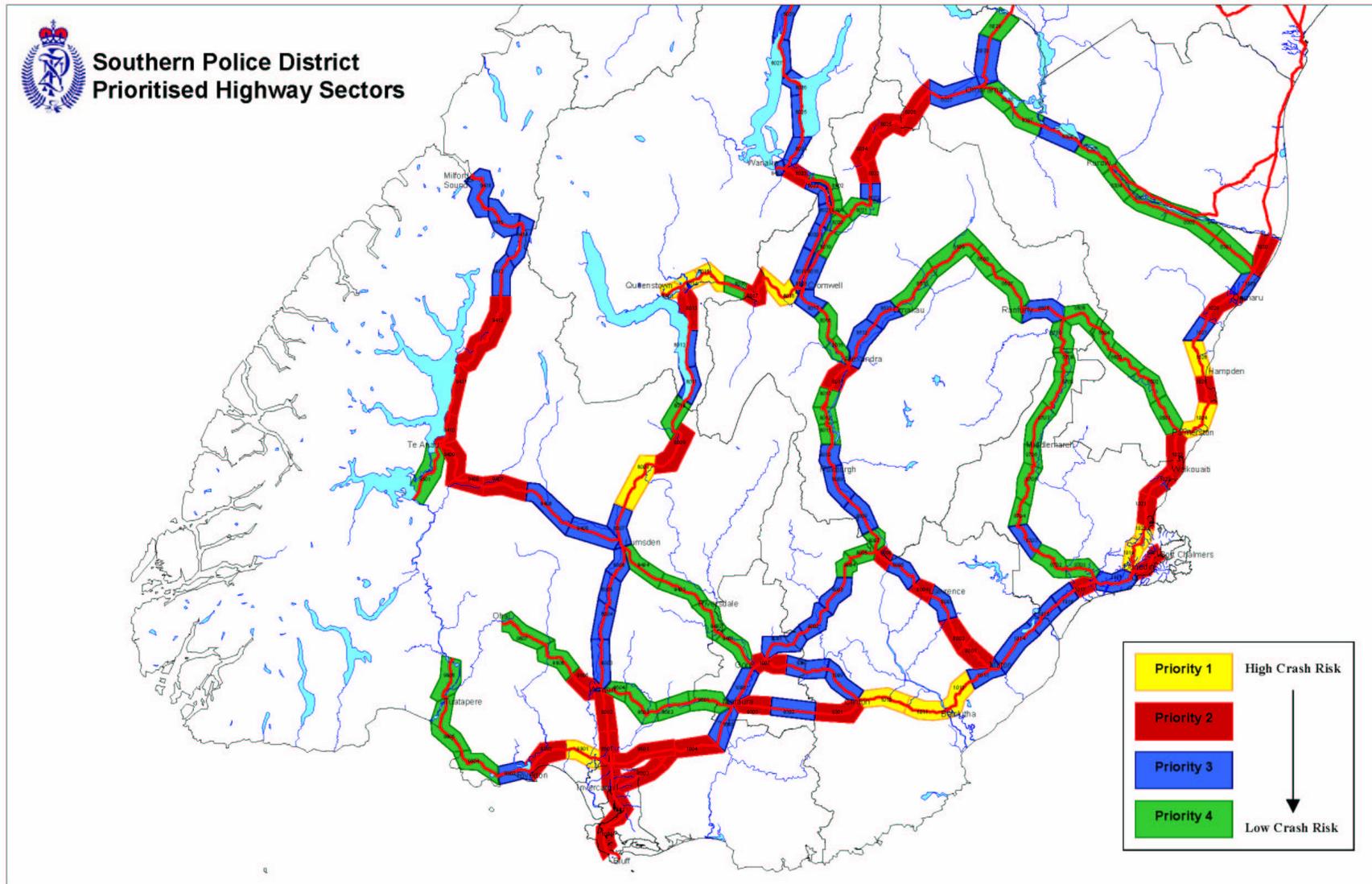
[APPENDIX “1” – Example of sector Codes and Risk Priorities]

Priority 1 = Very High Priority
2 = High Priority

3 = Medium Priority
4 = Low Priority

Sector	From	To	Priority
1001	Bluff	Greenhills OBR	2
1002	Greenhills OBR	Invercargill South	2
1003	Invercargill East	Woodlands	2
1004	Woodlands	Edendale	2
1005	Edendale	Mataura	3
1006	Mataura	Gore South	3
1007	Gore East	Pukerau	2
1008	Pukerau	Waipahi	3
1009	Waipahi	Clinton	3
1010	Clinton	Kaihiku Stream Br	1
1011	Kaihiku Stream Br	Balclutha South	1
1012	Balclutha North	Lovells Creek Br	1
1013	Lovells Creek Br	Milton	3
1014	Milton	Waihola	3
1015	Waihola	Taieri River Br	3
1016	Taieri River Br	Allanton	3
1017	Allanton	Mosgiel	2
1018	Mosgiel	Dunedin South	3
1019	Dunedin North	Pigeon Flat OBR	1
1020	Pigeon Flat OBR	Waitati	1
1021	Waitati	Merton Creek rest area	2
1022	Merton Creek rest area	Waikouaiti	2
1023	Waikouaiti	Palmerston	2
1024	Palmerston	Katiki OBR	1

[APPENDIX "2" – RISK PRIORITIES MAPPED



SOUTHERN HIGHWAY PATROL RTPP - _____

Month / Year

Road Safety Advertising _____

(See Road Safety Calendar)

Risks

<p>Crash Risks/Events/Licensed Premises <i>(Crash and restraint wearing rates/weather conditions/problem intersections and pubs/campaigns etc)</i></p>	<p>Sector Codes</p>	<p>AMS Codes</p>
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Target Sectors

UNIT	WEEK 1 Begins ____ / ____ / ____	WEEK 2 Begins ____ / ____ / ____	WEEK 3 Begins ____ / ____ / ____	WEEK 4 Begins ____ / ____ / ____
SHS ____				
SHH ____				

Return Comments *(for O/C Highway Patrol)*

Sergeant: _____

QID: _____

Date: ____ / ____ / ____

Return completed form to O/C Highway Patrol at end of month – see instructions on rear