

Changing the road policing investment conversation: targeting to risk and finding tradeoffs

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Abstract

New Zealand road users pay for road policing under the hypothecated user pays transport system. Approximately \$300 million per annum is appropriated from the National Land Transport Fund to NZ Police to provide a national road policing programme. In 2010, the NZ Transport Agency undertook a review of the investment in road policing. The review objectives were to improve value for money, effectiveness, performance monitoring, and road safety in line with the government's road safety strategy, *Safer Journeys*.

The NZ Transport Agency and NZ Police identified that road policing could be better targeted to risk, use outcomes rather than outputs, implement a Safe System approach, and align the programme to *Safer Journeys*. This resulted in both agencies reconsidering road safety risk and discussing how NZ Police can better target to risk with the resources and equipment available.

In 2011, the NZ Transport Agency and NZ Police developed a road policing programme that focused on the contribution policing makes to road safety outcomes. It targets police activities to localities, communities, people, routes and times of greatest risk. It seeks to increase resource efficiency and effectiveness, and to provide a better understanding of the trade-offs between activities, for example restraint enforcement vs speed enforcement.

The 2011/12 programme was a first step in a new conversation. As the model of investing in policing to deliver a desired set of road safety outcomes develops, challenges include: determining how technology can increase efficiency and effectiveness; deciding which enforcement activities require police officers; finding appropriate performance measures which reflect Police strengths; and adapting road policing to a Safe System and Prevention First approach.

This paper will report how monitoring of road policing in New Zealand is starting to show a shift from outputs to outcomes, better financial transparency, and how well enforcement activities are targeted to risk.

Key words: New Zealand Transport Agency, New Zealand Police, road policing, road enforcement, road safety risk, targeting to risk, efficiency, effectiveness, outcomes, value for money, Safe System, *Safer Journeys*, road policing programme, outcome investment approach, road policing investment, measuring outcomes, Prevention First Strategy, Centre for Road Safety Intelligence.

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1. Introduction

With the onset of the global financial crisis, the government became focused on getting better value for money from the public sector. In this context, the NZ Transport Agency undertook a number of value for money reviews of its investments, including a review of the road policing investment and programme in 2010.

The road policing review coincided with the government's new road safety strategy, *Safer Journeys* and the adoption of the Safe System approach, an emerging NZ Transport Agency direction to plan and invest for outcomes rather than outputs, and NZ Police (Police) implementing its 'Policing Excellence' change programme and 'Prevention First' strategy.

From the road policing review, a number of changes were made and tested in the 2011/12 Road Policing Programme. The changes gave Police greater involvement and ownership of the programme, enabled Police greater financial flexibility to optimise resources and target to risk, apply a Safe System approach to road policing, and to focus the programme on contributing to cross-sector road safety outcomes. Many of these changes have been progressed further in the 2012-15 programme, and while there are still some challenges, Police and the NZ Transport Agency have significantly changed the road policing conversation from funding police officers to investing and contributing to outcomes.

2. Background

In 1992, the Traffic Safety Service division of the Ministry of Transport merged with NZ Police. The purpose was to integrate road and general policing and utilise the strengths of having one police force in New Zealand.

Since 2008, New Zealand has had a fully hypothecated user pays transport system (Treasury, 2009). Money collected from road users goes to the National Land Transport Fund which is then distributed by the NZ Transport Agency through the National Land Transport Programme (NZ Transport Agency, 2012a). Because of the merger and funding arrangements, approximately \$300 million per annum is appropriated from the National Land Transport Fund to NZ Police to provide a national road policing programme. Under the Land Transport Management Act 2003, the Minister of Transport 'purchases' and approves, in consultation with the Minister of Police and the Police Commissioner, a programme of road policing activities and interventions (the Road Policing Programme, RPP) to be delivered by Police. This programme accounts for approximately 20 percent of Police's annual funding, of which approximately 75 percent pays wages (NZ Transport Agency, 2011b).

The NZ Transport Agency's role in the RPP is working with Police to prepare the programme and provide an investment recommendation to the Minister of Transport to either approve or decline the programme. The NZ Transport Agency also advises the Minister of Transport on the delivery of road policing activities. In this regard, the NZ Transport Agency manages the RPP on the Minister of Transport's behalf.

Consequently, Police and the NZ Transport Agency need to work together to design a programme of policing activities that will help reduce deaths and serious injuries on New Zealand's roads. The NZ Transport Agency, as part of its legal obligations, must assess whether the investment made in road policing will benefit road users. This creates some natural and healthy tension between Police as the provider and the NZ Transport Agency as investment recommender and monitor.

The way the programme is put together, who approves the investment, and how it is monitored is unusual compared to many other jurisdictions. Despite the uniqueness, it does

acknowledge that both agencies are trying to achieve the same road safety outcomes to reduce the number of deaths and serious injuries on New Zealand's roads.

3. Investing for outcomes

One of the challenges of the RPP is demonstrating value for money. Because the investment in road policing comes from road users, the NZ Transport Agency needs to demonstrate that each investment represents good value for money as required by the Land Transport Management Act 2003. This applies to the RPP as much as it does to other activities such as the road construction and maintenance.

Demonstrating that the RPP delivers value for money is challenging because much of what Police does is providing proactive general deterrence through presence on the roading network. This presence on the road has as much value to road safety as it does to maintaining a safe community. However, it is difficult to quantify, without a period of absence, that presence on the roading network affects road safety outcomes and represents value for money.

The first aspect for the review was defining what value for money meant in the context of the 2011/12 RPP. The NZ Transport Agency proposed that value for money meant that Police delivered the right road policing interventions efficiently and effectively (NZ Transport Agency, 2010). In essence, the right police resources (officers or technology) were targeting the right road policing activities and interventions to localities, communities, routes and times of greatest risk (NZ Transport Agency, 2011b & c).

For Police to deliver a value for money programme, both parties needed to work out what the road safety priorities or areas of concern were, and what were the right interventions to address the area of concern. It became apparent that the method of funding, planning, and delivering the 2011/12 RPP needed to change. Police needed greater involvement in planning and preparation, developing the intervention logic, and having the financial flexibility to better target resources to risk (NZ Transport Agency, 2010).

3.1. Adopting an investment outcome approach

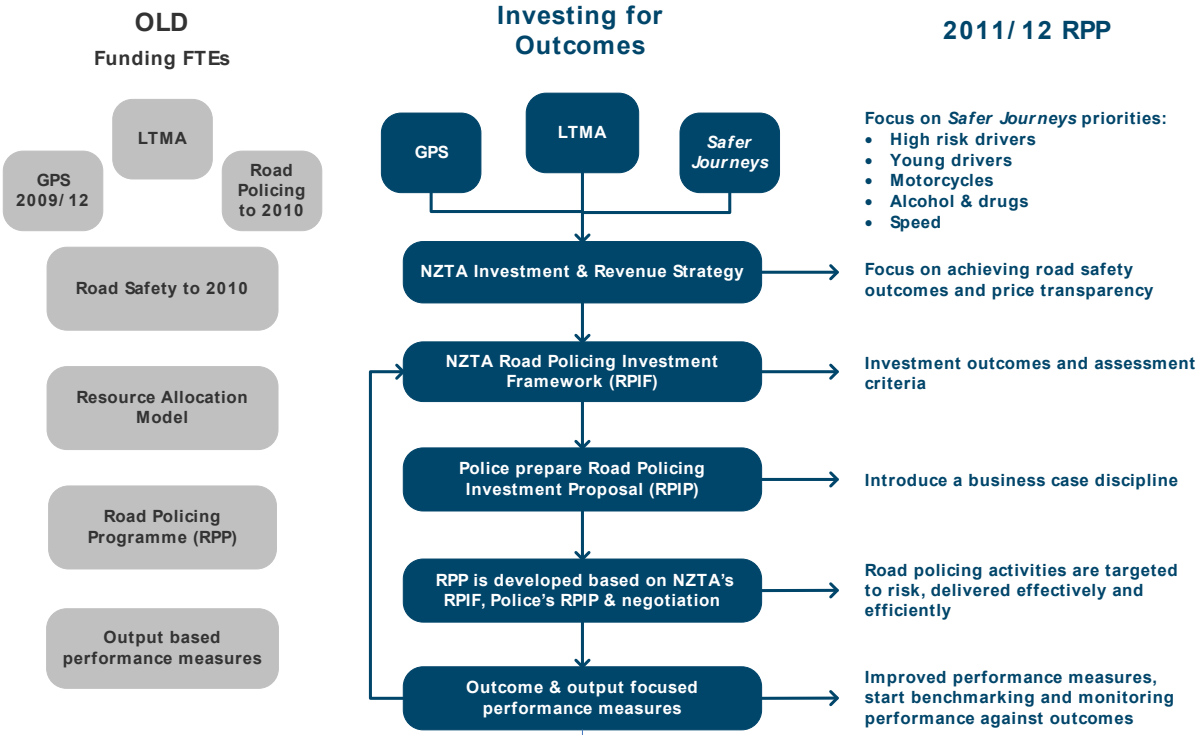
Previous RPPs were generally based on providing funding for a certain number of inputs and outputs (full time equivalents) that were linked to an overall road safety outcome (NZ Transport Agency, 2009). As a result, for the most part the activities included in the programme continued without explicit consideration of the quantum and effectiveness of the intervention or the balance between different activities. A resource allocation model was used to help ensure that each Police District and Local Authority area had sufficient inputs necessary to deliver the required outputs. Using this approach, Police received funding based on the number of inputs and outputs that were estimated to be delivered during the year in each Police Area.

The input/output approach remains valid. However, in a fully hypothecated funding environment it was difficult to demonstrate value for money using this approach. In addition, both agencies found the input/output approach inflexible, and it did not encourage Police to optimise and target resources to risk, nor did it recognise that to achieve road safety outcomes, a cross-sector approach is necessary. To help address these issues, Police and the NZ Transport Agency agreed to adopt an outcome investment approach as shown in figure 1. This approach provided a new way to invest in, plan and deliver the 2011/12 RPP.

At the heart of the approach, the NZ Transport Agency, on behalf of the Minister, invests in Police to contribute to a set of agreed outcomes. Police agree to undertake road policing activities and interventions that will contribute to the agreed investment outcomes.

The approach is analogous to the NZ Transport Agency being a bank manager or angel investor, and Police seeking an investment in its business to deliver against an agreed set of outcomes. For it to work, the investor needs to have sufficient confidence in the business that it is investing in, but does not need to be involved in the day-to-day operational details; the business needs to provide sufficient information to show that it is progressing towards the outcomes, and that the investment is not being wasted.

Figure 1: Diagram of the outcome investment approach



(NZ Transport Agency, 2011a)

For both agencies, the shift from funding and delivering outputs, to investing and working for outcomes, required a significant transition. The NZ Transport Agency wished to reduce its involvement in the operational aspects of the 2011/12 RPP, and focus on why it was investing on behalf of the Minister, and what outcomes needed to be achieved for the investment provided. Police wished to increase its involvement in the programme by considering how its road policing activities and interventions contributed to the investment outcomes by thinking about the intervention logic.

3.2. Applying an investment outcome approach

In addition to understanding the new responsibilities, the process for implementing the outcome investment approach needed to be redesigned. The NZ Transport Agency proposed a process similar to a tender process, which was adopted to develop the 2011/12 RPP.

To start, the NZ Transport Agency prepared a road policing investment framework. It included the proposed investment outcomes for each road policing activity by priority, direction about specific inventions or risks, and the amount available to invest (NZ Transport Agency, 2011b). Criteria for how the NZ Transport Agency would assess the 2011/12 RPP and investment to make its recommendation to the Minister of Transport were also provided in the investment framework.

In response to the investment framework, Police prepared its road policing investment proposal. The proposal outlined the activities and interventions it considered would contribute to the investment outcomes, the resources necessary, and the intervention logic to link the proposed activities and interventions with the investment outcomes. Police also proposed performance measures to help indicate whether it was delivering the necessary interventions to address the road safety risk or concern.

From these documents, both parties negotiated and agreed to the components of the 2011/12 RPP and the investment required for Police to deliver the programme to the required levels of service needed to contribute to the outcomes. The result was the 2011/12 RPP.

4. Setting safety priorities

4.1. Safer Journeys

In 2010, the government released its new road safety strategy, *Safer Journeys* (Ministry of Transport, 2010). This was relevant to the 2011/12 RPP in two ways. First, it introduced the Safe System approach and thinking. This challenges traditional thinking which often seeks to assign blame for road deaths and serious injuries. The Safe System approach is that a mistake should not cost someone their life or result in serious injury. It requires collaboration and shared responsibility between system designers and users. As a result, Police needed to think about how it could apply a Safe System approach. The second aspect is that the strategy identified a number of areas of concern, based on road safety risk and the need to address the area to reduce deaths and serious injuries. The areas of concern identified in *Safer Journeys*, provided a useful way to reorganise the 2011/12 RPP to help ensure that the other agencies' efforts were complementary with that of Police.

The 13 areas of concern from the *Safer Journeys* strategy, along with an additional police activity of 'crash attendance and reporting', were used to restructure the order of the road policing activities in the 2011/12 RPP. The order of road policing activities were prioritised according to *Safer Journeys*, but also to the activities that Police were the main or a significant contributor to. For example, "high risk drivers" is an area of medium concern in *Safer Journeys* but an area of high concern in the 2011/12 RPP because Police are the main contributor to help reduce the impact of high risk drivers (NZ Transport Agency, 2011c).

4.2. Adopting a Safe System approach

Adopting the Safe System approach reinforces a more integrated and system based approach to road safety and is required where multiple components contribute to an issue. Police and the NZ Transport Agency therefore needed to consider how the Safe System approach could be incorporated into the 2011/12 RPP. This was necessary to ensure that other agencies' efforts were complementary to those of Police and vice versa.

In that context, the NZ Transport Agency and Police considered how and what Police could do to adopt a Safe System approach to road policing. The result was the inclusion of actions that Police could undertake which was included in the 2011/12 RPP along with an outline of what the Safe System approach was. For some elements such as "safe road use" identifying how and what Police could do to make a difference using a Safe System approach was fairly simple as it was fundamental to what Police already did. For others such as 'safe vehicles' and 'roads and roadsides' which Police traditionally have had no or very little involvement it was harder to identify what actions Police could undertake. However, all elements are covered and results are shown in figure 2.

Figure 2: Road policing in a Safe System

Safe System element	Locally, Police can make a difference...
The safe roads and roadsides element requires that roads are predictable, promote safe behaviour, and are more forgiving of human error. Presently not all roads are self-explaining or equal in terms of risk.	by reporting crashes, understanding and targeting high risk roads and intersections, using risk targeting tools (such as KiwiRAP), and being aware of road and roadside issues in each District. Police can work with and support Road Controlling Authorities in their Districts to improve road and roadside safety and provide feedback where risks are identified while patrolling.
The safe speeds element requires that speed limits suit the function and level of safety of the road.	by identifying and targeting areas where inappropriate or excessive speed is a high risk factor for deaths and serious injuries, encouraging road users to comply with speed limits and drive appropriately to conditions in each District. Police can also investigate alternative methods of promoting speed compliance and engage with and support the Road Controlling Authority in the setting of safe speed limits in each District.
The safe vehicle element requires an overall improvement in the safety standard of the fleet. Vehicles that do not meet acceptable standards should be removed, and new vehicles should incorporate safety features to help prevent crashes and protect road users from crash forces.	by targeting and removing unsafe and unwarranted light and heavy vehicles, and promoting safe vehicle operation in each District.
The safe road use element requires road users who are skilled and competent, proactive in managing hazards, predictable, alert, unimpaired, compliant, and able to make safe vehicle choices.	by identifying and targeting high risk drivers, promoting compliance with and enforcing road rules, and encouraging alert and compliant road user behaviour in each District.

Table adapted from source material (NZ Transport Agency, 2011b & c)

As the NZTA and Police were adopting the Safe System approach, Police was also rolling out its Prevention First strategy, which recognises that a strong focus on prevention is required to achieve a sustainable reduction in road trauma, crime and anti-social behaviour (New Zealand Police, 2012a). Much like the Safe System approach, Prevention First is a systematic and holistic approach to policing that puts prevention at the forefront of all policing activities, and requires strong linkages to information and intelligence (NZ Transport Agency, 2012b). Because of the linkages between Prevention First and the Safe System approach, Police is able to reinforce how the complementarities of the approaches.

4.2.1. Why is that pub there?

In illustrating how Police can apply a Safe System approach further, Police could choose to use its involvement in local planning decisions to help achieve better road safety and community outcomes. For instance, Police can use its involvement in local planning to help influence decisions such as whether or not a liquor licence should be granted to someone at

premises next to an arterial route in a high risk area with no or limited access to public transport. Using Police's involvement judiciously could be a powerful tool in promoting shared responsibility and improving road safety outcomes. One of the advantages of using an outcome based investment approach is that it encourages Police to be innovative and to use all of its available resources and links with the community to help influence and achieve better road safety outcomes.

4.3. Targeting to risk

To apply a Safe System approach, all road safety agencies have to be able to target their resources to risk. For Police, it needs to target its officers and technology efficiently and effectively to risk, to help prevent road trauma through general and specific deterrence activities and interventions. To target to risk, ideally Police would be able to demonstrate it has the right resources available at the right time, in the right location, on the right route, undertaking the right intervention necessary (NZ Transport Agency, 2011 b & c).

Police uses a tasking and coordination approach, based on intelligence, to position officers and resources to risk (NZ Transport Agency, 2011c). With the Safe System approach however, it was possible to consider whether police intelligence could be supplemented with other road safety data sources such as the state highway KiwiRAP data.² The result was the formation of a sector wide Centre for Road Safety Intelligence. The purpose of the Centre is to develop intelligence products by combining the road safety intelligence and data received by the NZ Transport Agency, Police, ACC (which provides accident compensation for anyone injured on a public road) and Ministry of Transport (New Zealand Police, 2012b). Over time, the intelligence products from the Centre will help identify emerging road safety risk, and help target effort to addressing priority areas and road safety risk.

By using both the Centre for Road Safety Intelligence products and the existing intelligence capability, Police is able to better target its resources to risk. In addition, the NZ Transport Agency's involvement in the Centre has enabled a greater understanding of what intelligence is, how intelligence is different from data, and the process used to gather intelligence and prepare useful products. This understanding means that it is becoming easier for Police to demonstrate how it targets its resources to risk.

4.3.1. Targeting speed camera sites to risk

Police had criteria about how it selected both fixed and mobile speed camera sites on the roading network. However, when developing a business case for additional speed cameras, Police and the NZ Transport Agency used the opportunity to refine the site selection criteria further to include and consider data from the Crash Analysis System, ACC, KiwiRAP, and the involvement of local stakeholders. Because of the additional inputs to the selection criteria, Police is able to apply a much more sophisticated site selection tool when choosing and targeting camera sites to risk. Having this site selection tool is useful in enabling Police to target the speed camera sites to risk. It is useful to help increase public confidence that the speed camera sites are targeted to risk and that the purpose of speed cameras is for road safety rather than revenue gathering.

5. Measuring the contribution to outcomes

² KiwiRAP is the New Zealand Road Assessment Programme. It is part of the International Road Assessment Programme, otherwise known as iRAP. Similar road assessment programmes have been implemented in Europe (EuroRAP), Australia (AusRAP), the United States of America (usRAP), South Africa and Malaysia.

In addition to developing the 2011/12 RPP, the NZ Transport Agency and Police also considered how they would monitor the programme, and help ensure its effectiveness.

As mentioned, the *Safer Journeys* strategy sets priorities for the road policing activities that Police deliver. It also provides the overall outcome measures for the road safety sector which Police contribute to. Progress towards achieving those priorities is shown by using a set of outcome measures that are based on the overall *Safer Journeys* outcome for each area of concern and a selected number of other outcome measures related to Police’s contribution and effort. For the 2011/12 RPP, a number of outcome measures were used to help provide comfort that the programme and Police delivery was still effective (NZ Transport Agency, 2011c). For the 2012-15 RPP, the number of outcome measures has been reduced to one or two targeted measures per area of concern (NZ Transport Agency, 2012b).

Using an outcome investment approach, the challenge is to isolate the contribution Police makes to the outcomes. For the 2011/12 RPP, existing outcome measures were used on the basis that Police make some contribution to the outcomes. While this method is imperfect, it enabled the outcome approach to be trialled. As the 2011/12 performance monitoring has progressed, the NZ Transport Agency’s thinking has been refined and it is looking to undertake further work during the 2012-15 RPP to better understand the extent and nature of Police’s contribution to the outcomes (NZ Transport Agency, 2012b). This will tie in with the work Police is doing to better understand the intervention logic between road policing activities and outcomes.

Regular monitoring of outcomes provides an assessment of Police activity. This is completed quarterly, and is based on whether there is confidence that Police has delivered as agreed. The focus is on the outcomes, targeting to risk, continuous improvement, and expenditure, rather than the outputs. This has changed the conversation from a discussion about the outputs to focusing on how Police is influencing the outcomes. Police activity measures are collected and included in the quarterly reporting. The purpose for including activity measures, is to allow Police to consider whether the activity mix might need to be adjusted to better target to risk and contribute to the investment outcomes.

6. A new road policing programme

As noted earlier, an outcome from a review of the road policing investment and programme was the implementation of a new outcome investment approach when developing the 2011/12 RPP. The approach was based on investing for outcomes, rather than funding inputs and outputs, with indicative resources included to help with the transition. Because of the review, the 2011/12 RPP was reorganised and prioritised to *Safer Journeys* outcomes to help demonstrate value for money. A summary of the programme is shown in figure 3.

Figure 3: Summary of the 2011/12 Road Policing Programme

Road Policing strategic priority	Headline road safety outcome measure (desired)	Road policing contribution to the desired outcomes	Indicative resources
High	High risk drivers Reduction in the number of disqualified, unlicensed, fleeing or racing drivers in fatal / serious crashes	Reduce opportunities to offend by preventing disqualified driving	\$31m 225 – 235 FTEs
	Young drivers Reduction in the number of young drivers killed, per 100,000 15–24 year olds	Reduce offending by young drivers by enforcing GDL provisions	\$42m 290 – 305 FTEs
	Motorcycling Reduction in ACC entitlement claims on the Motor	Reduce motorcycle offending by targeting	\$15m 100 – 110

Road Policing strategic priority	Headline road safety outcome measure (desired)	Road policing contribution to the desired outcomes	Indicative resources
	Vehicle Account from motorcyclists	unlawful motorcycling behaviour	FTEs
	Alcohol/drug impaired driving Reduction of fatalities or serious injuries in crashes with alcohol / drugs, per 100,000 population	Deter alcohol and drug driving by delivering alcohol and drug impairment tests	\$67m 470 – 485 FTEs
	Speed Decreased percentage of vehicles exceeding 100 km/h and 50 km/h limit	Reduce inappropriate speeds by targeting enforcement to high risk sites	\$51m 355 – 370 FTEs
Medium	Restraints Reduction of percentage of vehicle occupant deaths where restraints have not been worn (3 yr measure)	Improve restraint use by targeting communities where usage is low	\$7m 46 – 52 FTEs
	Heavy vehicles Reduction of fatal / serious heavy vehicle (HMV) crashes where driver is at fault, per 100 million heavy vehicle kilometres traveled	Reduce HMV crash risk by stopping and inspecting commercial vehicles	\$19m 125 – 130 FTEs
	Roads and roadsides Reduction of fatal or serious injury crashes on high risk KiwiRAP State highway routes	Inform RSAP groups by reporting unsafe roads and roadsides	\$7m 42 – 48 FTEs
	Crash attendance and reporting Increased percentage of fatal and serious injury crashes attended by NZ Police	Respond rapidly to incidents and emergencies notified to Police	\$36.945m 260 – 270 FTEs
Low	Light vehicles Increased percentage of new vehicles with 5 star safety rating	Remove sub-standard vehicles by taking action on WOF offences	\$5m 33 – 36 FTEs
	Walking and cycling Reduction in number per 100,000 population of pedestrians / cyclists killed or seriously injured enough to be hospitalised for longer than one day	Keep pedestrians and cyclists safe by training and enforcement at schools	\$7m 42 – 48 FTEs
	Fatigue and distraction Reduction of fatalities and serious injuries in fatigue and / or distraction crashes per 100,000 population	Discourage fatigued and distracted driving by patrolling high risk times and routes	\$5m 33 – 36 FTEs
	Older road users Reduction in number of road users aged 75 years and over killed in road crashes per 100,000	Protect older road users by engaging with communities	\$4m 24 – 27 FTEs
Total resources invested through the 2011/12 RPP			\$296.945m 2045–2152 FTEs

(NZ Transport Agency, 2011d)

7. Beyond the 2011/12 RPP

Trialling an investment outcome approach for the 2011/12 RPP raised some challenges and obvious areas to consider further in the 2012-15 RPP. The main challenge raised was the need to have outcomes that could, ideally, be disaggregated to a regional and Police District level. Doing so could enable a more refined set of investment outcomes that are sensitive to the contributions Police provide through delivery of its interventions. Using regionally targeted

investment outcomes could enhance the RPP further by providing an opportunity for Police Districts and the NZ Transport Agency's regional staff to identify local road safety risks. Police and the NZ Transport Agency could agree to this work as part of the continuous improvement programme associated with the 2012-15 RPP.

Another challenge to consider is how to encourage greater use of enforcement technology to better optimise the use of police resources. Critical to increasing the use of electronic equipment for enforcement and compliance (automatic number plate recognition, point to point cameras, weigh in motion and so forth) is deciding how the equipment will be paid for, who owns and manages it, and importantly who manages and is accountable for the infringement processing. Currently, Police is the only agency that can approve and operate surveillance equipment for the purposes of enforcing traffic offences and infringements in New Zealand.

It is likely that a new approach to managing electronic enforcement tools and the infringement process will be required. To implement a new approach, significant change to the current institutional and funding rules will be required as well as reconsidering the current legislative frameworks. Doing so will challenge the current roles and responsibilities within the transport and justice sectors, but it is likely to further improve road policing and road safety outcomes in New Zealand.

8. Conclusion

The 2011/12 RPP was a first step to implementing a new outcome investment approach that changed the way the NZ Transport Agency and Police invested, planned and delivered the 2011/12 RPP. By many accounts the trial was successful with the approach being used and further refined through the development of the 2012-15 RPP. Critical to success was the willingness of both organisations to make improvements to the road policing investment and to look at how Police could further demonstrate value for money.

The approach has changed the conversation between the NZ Transport Agency and Police away from one about the quantum of inputs and outputs to a discussion about why, what and how road policing contributes to investment outcomes. This has helped pave the way to have an ongoing discussion about how the investment outcomes can be achieved, as well as how more enforcement technology can be incorporated into road policing activities. While there will always be a healthy tension between the service provider and investment recommender and monitor, the outcome focus remains and encourages both organisations to work together to achieve better road safety outcomes for all road users.

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