

Performance Measurement in Traffic Policing

**A discussion paper prepared for Tasmania Police on
behalf of the Australasian Traffic Policing Forum**

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Acronyms

ABS	Australian Bureau of Statistics
AFP	Australian Federal Police
ATC	Australian Transport Council
ATPF	Australasian Traffic Policing Forum
ATSB	Australian Transport Safety Bureau
COPS	Computerised Operational Policing System
FR2T	Fundamental Response to Traffic
LAC	Local Area Command
OPR	Operational Performance Review
RBT	Random Breath Testing
RTPPs	Risk Targeted Patrol Plans
RTRP	Risk Targeted Road Policing
SAP	Safety Administration Programme
TINS	Traffic Infringement Notices

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1. Introduction

The terms of reference from the Australasian Traffic Policing Forum (ATPF) for this paper were to review and compare performance measurement models currently used in Australasia and elsewhere in regard to traffic policing, to draw out elements of best practice from these and to recommend a best-practice model which might be applied to compare performance within and across jurisdictions.

Performance measures are a means of describing both what police do and what is achieved as a result. Thus, to understand the measures one must look first at the plans which are made for traffic policing, then at how these plans are put into operation and finally at what the results of this are. In practice, of course, these are not discrete stages but are part of an ongoing feedback process whereby strategies and tactics are adjusted in response to changing needs and demands. Performance indicators are the means by which this whole process is monitored. Benchmarking is the highlighting of particular aspects of plans, so that performance is then judged against a pre-determined standard.

2. Background

Current Strategies and Measures at National Level

The Australian Transport Council (ATC) *National Road Safety Strategy 2001-2010* (with two-yearly Action Plans) sets out one fundamental target, which is to reduce road fatalities by 40% by the year 2010. It believes that this is achievable because 'many current measures have not reached the limit of their cost-effective potential for all groups and areas' so that the target is to be achieved by: continuing existing effective measures, enhancing and/or achieving wider implementation of measures with further potential, and introducing new measures. Going beyond this it proposes a series of strategic objectives, which cover aspects of policing but also touch on the work of other agencies: improve road user behaviour; improve the safety of roads; improve vehicle compatibility and occupant protection; use new technology to reduce human error; improve equity among road users; improve trauma, medical and retrieval services; improve road safety policy and programs through research of safety outcomes; and encourage alternatives to motor vehicle use. The strategy document points out that meeting these objectives will involve: the community as a whole; specific road user groups; roads authorities; police and justice agencies; vehicle manufacturers; employers of road users; parent and schools; planners and designers; health care professionals; and government funding bodies. They also, of course, imply a need for measurement and evaluation.

The ATC thus recognises that the 40% reduction can only be achieved through the contributions and partnership working of a range of agencies, of which the police service is but one. Drawing on existing research it estimates that by far the largest reduction (19%) could be made by improving the safety of roads, 2% by using new technology to reduce human error, 10% by improving occupant protection, and 9% by improving road user behaviour. Thus the area in which policing can have the most

direct impact might account for just under one quarter of the total fatality reduction. This must be borne in mind when considering the measurement of effects.

The ATC Strategy refers to performance indicators within the context of monitoring and reporting, noting that success will be judged against three criteria:

- i) trends in fatalities compared with the target;
- ii) actions in response to each Strategic Objective, and the outcomes achieved; and
- iii) take-up of measures identified in the Action Plans and the effectiveness with which these have been applied.

Progress on measure (i) will be reported twice yearly at Strategy Panel meetings and annually to the ATC, and on measures (ii) and (iii) biennially by the Panel and reported to the ATC.

The Strategy says that “performance indicators will continue to be developed and published to help monitor the success of the road safety initiatives associated with this Strategy. It is intended that these will be produced throughout the life of this Strategy and will be enhanced to provide more comprehensive data on road safety performance.”

As well as the extensive work by the Australian Transport Safety Bureau (ATSB) in support of the ATC there have been surveys conducted regularly across the country for some years by AC Nielsen and the Australian Bureau of Statistics (ABS) regarding driver and general public attitudes towards driving and road safety.

Austroroads – an association of state and territory roads authorities – also provides statistics on a range of road transport issues, including road trauma: state by state measures of fatality and serious injury rates in relation both to population and to vehicle kilometres travelled. It has also published a useful review of drink-drive enforcement strategies (Harrison et al, 2003). One comment in this paper was that, although police jurisdictions now have access to extensive information about road trauma it is not entirely clear what is the most effective way to use this data for targeted enforcement purposes.

Some individual police services have commissioned papers reviewing existing knowledge and practice, such as one by Haworth and Vulcan of Monash University produced for Western Australia Police in 2002. Their proposals have been reflected in subsequent strategy documents in Western Australia.

The ATC Strategy framework is reflected in the Australian Traffic Policing Forum Strategy Document 2005-2008. Part of the ATPF Mission Statement is to analyse available programs to identify best practice in traffic law enforcement, and the strategic goals for 2005-2008 include to: (a) review and assess international PM strategies and (b) identify opportunities for a national PM framework. This paper, commissioned in mid-December 2005, is part of the response to that commitment.

3. Methodology

After commissioning of this paper by ATPF the police services in each Australian state and territory, plus New Zealand, were asked in June 2005 to provide information to Tasmania Police on the following five aspects of performance measurement:

- i) How road safety/traffic law enforcement objectives are determined and prioritised.
- ii) How specialist and/or general resources are organised to produce outputs and deliver services.
- iii) How performance and service delivery are monitored, including any key performance indicators.
- iv) Whether standards (benchmarks) are used in conjunction with performance indicators so that specified levels of performance are clearly identifiable.
- v) What corporate reporting processes are used to monitor and evaluate performance.

The first stage in preparing the present paper was to review the material submitted after June 2005. Included in this was the paper by Haworth and Vulcan (2002) which considered three broad types of performance measure – process, intermediate and outcome. To these one could also add input measures, to form a four-fold classification describing the totality of traffic policing:

1. Inputs: staff and other resources allocated to traffic policing.
2. Outputs/processes: the activities engaged in by these resources.
3. Intermediate outcomes: road user attitudes and behaviour resulting from police activities.
4. Final outcomes: crash, injury and fatality figures.

The assumed relationship between the four is that inputs provide the resources for outputs and processes which in turn produce certain intermediate outcomes which are the pre-requisite for the final outcomes. This framework was used as a means of organising the material and in seeking further material from the police services in January 2006. The main issues addressed were:

1. What overall goals and objectives are set and how are they measured?
2. What strategic plans and action plans have been drawn up, and how?
3. What structures and resources are allocated to traffic policing?
4. What measures of outputs and processes are used?
5. What intermediate and final outcomes are measured?

6. How is the contribution of policing to outcomes measured?

The questions were sent out via Tasmania Police and the responses were received by the writer in a mixture of e-mails, paper documents and phone calls. In addition to this, annual reports, strategic and business plans and other publications were accessed via the internet.

4. Findings/Analysis

The following pages provide summaries of the approach to traffic policing and the associated performance measures used in each Australasian police service, followed by Canada, the United Kingdom and Europe. For each of the Australasian services information is presented using a standard template, covering: resources available for traffic; strategic plans; action plans; performance indicators; monitoring and reporting procedures; benchmarking; and any comments offered about performance indicators or benchmarking.

For services elsewhere in the world a more discursive, comparative approach is used so as to bring out similarities and differences.

4.1 Australian Capital Territory

Traffic Policing in ACT

The AFP has a purchase agreement with the ACT Government to provide a policing service. ACT Policing allocates 46 members to traffic operations, approximately 7% of the workforce. This includes: Mobile Team (27); Collision Investigation (14); Management/admin (5). These officers are the responsibility of the Superintendent for Traffic Operations.

Strategic Plans

ACT Policing, Traffic Operations works to an annual business plan which identifies strategies to meet the performance measures and decides how to approach traffic enforcement and road safety within the ACT and surrounding districts.

Each of the business areas (including traffic) have their own plan and these feed into the ACT Policing strategic plan and purchase agreement. The plan is individual to the business area and is developed by the Superintendent responsible for the area. The main measures as they relate to road safety form the core aims of the plan.

The research and policy team provide monthly updates to the Executive Steering Committee on how each section is performing against the Purchase Agreement measures.

Progress against the performance indicators is reported quarterly and annually.

Action Plans

Whilst Traffic Operations have primary responsibility for traffic enforcement, other response areas within ACT Policing also dedicate resources to road safety in accordance with the traffic plan.

Due to the small size of the jurisdiction the traffic plan covers all areas of the ACT.

Deciding priorities: The flexible deployment of resources within the ACT is coordinated by an Operations Committee. This committee consists of representatives from each police station and identifies operational priorities on a weekly basis.

Accountability lies with Superintendent Traffic Operations in consultation with the other portfolio superintendents and ACT policing executive.

Performance Indicators

Final outcome measures:

There is no explicit commitment to a 40%, or other percentage, reduction target for road fatalities. The Purchase Agreement simply states that “ACT Policing will enforce traffic laws and promote safer behaviour on ACT roads with the objectives of reducing the number of crash fatalities and injuries to members of the community”.

The Purchase Agreement with the ACT Government sets out numerous performance measures relating to community safety. In regard to road safety the following final outcome measures have been agreed:

- number of road crashes per 100,000 population (less than 3751.3);
- number of road crashes resulting in death per 100,000 population (less than 4.3); and
- number of road crashes resulting in injury per 100,000 population (less than 231.8).

Outputs/process measures (police activities):

ACT Policing keep internal statistics relating to the number, type and location of traffic infringements issued, also the number, location and result of Random Breath Testing (RBT) and prosecutions for drink driving.

Intermediate outcome measures (road user behaviour/attitudes):

- % who say they have driven 10km or more over the speed limit;
- % who say they have driven without a seat belt; and
- % who say they have driven while over the .05 alcohol limit.

These measures are derived from the national annual Community Satisfaction with Policing Survey.

Monitoring and Reporting

Information for performance indicators is recorded on the AFP computer system, PROMIS. This data is reported monthly to the Executive Steering Committee which consists of all the portfolio managers and ACT Policing senior executive.

Members of the Executive Steering Committee report monthly on the performance of their area in regards to the Purchase Agreement measures. ACT Policing provides quarterly and annual updates to the Minister for Police and Emergency Services against the measures in the Purchase Agreement. The Purchase Agreement is reviewed each year and adjustments are made.

Benchmarking

Specific targets are developed for each measure of the Purchase Agreement, including crashes, injuries and fatalities, developed on an average of the three previous financial years. The targets have been indicated in brackets.

The national averages are the benchmarks for the majority of performance measures, but traffic measures relate specifically to the ACT.

Comments on PIs and Benchmarking

None.

4.2 New South Wales

Traffic Policing in NSW

About 900 officers, or 6% of NSW Police are engaged on highway patrol duties, deployed locally, while Traffic Services Branch (TSB) has 120 officers in special units, such as traffic intelligence, crash investigation, breath analysis and research. TSB also provides state-wide coordination, equipment and advice. Its Commander develops strategic direction and policy, in consultation with Assistant and Deputy Commissioners.

Strategic Plans

NSW Roads and Traffic Authority *Road Safety to 2010*: This aims to reduce fatalities from 556 in 1998 to 200 by 2010 (a reduction of over 60%).

NSW Police Corporate Plan provides the framework for all NSW Police activities and is agreed to by the Minister and the Commissioner.

Each region has a strategic plan (currently covering 2004-07) reflecting the objectives of the Corporate Plan.

The Fundamental Response to Traffic (FR2T): This provides a framework for action under the headings: Intelligence; Investigation; Tasking and Deployment; Supervision; Prosecution; Review; and Crime Prevention. There are 31 strategies to be adopted by each Local Area Command (LAC), standardising the previous varied practices. Strategy 1 states: 'Road trauma and traffic policing are priority issues. The

Command will develop a documented strategy that involves all personnel in addressing these issues. Once this strategy is developed, it will be clearly communicated and marketed to the entire LAC so that each person is aware of his or her responsibility in regards to the Command's strategy'.

Action Plans

A Traffic Policy Statement identifies Commanders' responsibilities for delivery of the traffic component of the Corporate Plan, and Service Delivery Program No 3 identifies traffic management and road safety activities.

LACs have Business Plans listing targets and performance measures for traffic policing outputs and road safety outcomes (eg number of crashes per month), together with local strategies or tactics. LACs have line command of operational staff and are ultimately responsible for delivering traffic services and implementing road safety plans.

The FR2T requires LACs to liaise with neighbouring Commands, Traffic Services Branch and the region to exchange road trauma and other traffic intelligence, via regular meetings and discussions of cross-boundary issues. Action items are then allocated to LACs. A Local Traffic Officer is allocated to each Command for this strategy, liaison and intelligence work.

NSW Police and the Roads and Traffic Authority have developed the Enhanced Enforcement Program (EEP) which increases visible police activity over and above normal operations. EEP prioritises speeding and drink driving.

Performance Indicators

Final outcome measures:

The overall goals for traffic policing in the NSW Police *Corporate Plan 2004-2007* are to:

- minimise road trauma [but no specific targets set];
- promote orderly and safe road use; and
- ensure the free flow of traffic.

The Corporate Plan establishes NSW Police's overall outcome measure as 'a high level of public trust and confidence in police and satisfaction with policing services...' The annual national Community Satisfaction with Policing Survey provides a measure of:

- community concerns about speeding and dangerous driving. This is an indicator of final outcome, but has not been mentioned as a traffic policing performance indicator.

The major outcome measure mentioned in the Corporate Plan is:

- Trends in road fatalities and injury crashes per 100,000 vehicles.

Beyond this, corporate, region and LAC business plans do not specify performance indicators, but Traffic Services Branch report to the Deputy Commissioner on a range of output/process measures including breath tests, infringements, traffic charges and kilometres travelled by highway patrol vehicles. Regions and LACs can be asked to account for adverse trends.

Other performance indicators used within LACs 'may include but are not restricted to':

Output/ process measures (police activities)

- traffic and intelligence reports created;
- traffic offences detected;
- legal actions created;
- successful/failed court prosecutions;
- vehicles stopped during RBT and speed enforcement operations and
- complaints against the police.

Monitoring and Reporting

The Computerised Operational Policing System (COPS), Computerised Incident Dispatch System and Enterprise Data Warehouse provide near real-time data for analysis and monitoring purposes.

LAC traffic officers and HWP supervisors have weekly tasking and deployment meetings to review road trauma and traffic related issues, hotspots, trends, suspects and targets and direct resources to them. LACs conduct monthly intelligence-based traffic operations involving generalist police resources to address locally identified issues. These have an evaluation component.

At LAC level there are also Performance and Service Delivery Reviews.

Under FR2T Crime Management Unit (CMU) staff: do daily analyses of computerised and other data sources and report to weekly tasking and deployment meetings; assess all data relating to road trauma and traffic in terms of target development; provide intelligence for all officers to raise awareness of road trauma and traffic related offenders and hotspots.

Within each region there is one LA Commander specifically responsible for: mentoring other Commanders, identifying good practice and encouraging replication of this in LACs.

There is also a Region Traffic Coordinator accountable to the Region Commander for the strategic direction of traffic policing functions, including: intelligence, internal and external liaison, coordination, dissemination and evaluation.

There is also monitoring through the Operational Crime Review and Audit Group processes. These report to the Commissioner and his team and the results of business plan targets are discussed..

Benchmarking

Fatality and injury figures are compared with national road toll statistics as a measure of effectiveness. Also, there are monthly crash targets for LACs, based on the results from previous months.

FR2T Strategy 3 requires all LACs to adopt the *13 Point Major Traffic Crash Plan* and best practice narrative. This is described as a benchmark which ensures statewide consistency in reporting.

Comments on PIs and Benchmarking

There can be difficulties where one indicator is examined in isolation. For example, increased RBT tests by one LAC may seem to be a good result, but if the number of alcohol-related crashes do not reduce, then possibly the wrong site have been selected for the tests.

The complexity of operational policing can differ between locations, so that the same tactics or measurements may not work in both rural and urban areas.

4.3 Northern Territory

Strategic Plans

The Department of Infrastructure Planning and Environment (DIPE) works with stakeholders through the Northern Territory Road Safety Council. This represents DIPE, Territory Insurance Office, Department of Health and Community Services, NT Police, Fire and Emergency Services, Department of Employment, Education and Training, Aboriginal organizations, private road safety practitioners and regional community committees,

Together they issued the Northern Territory *Road Safety Strategy 2004-2010*.

This refers to a vision of reducing road trauma, with a target to reduce fatalities to no more than 15 per 100,000 population by 2010, which is a 40% reduction on 2003.

To achieve this, the four objectives of the strategy are listed: a safer road network; safer road users; safer vehicles and an effective emergency response.

Performance Indicators

Each of the Strategy's four objectives has performance indicators linked to it, as follows:

A safer road network:

- measure and report monthly and review annually the number of fatalities and injury crashes;

- identify high risk locations, based on the above; and
- reduce pedestrian, cyclist and vulnerable road user casualties.

Safer road users:

- monitor and report on fatalities and crashes in relation to: speed, alcohol, fatigue, seat belt use, vulnerable road users, and data from the Vehicle Accident Database;
- reduce fatalities and injuries related to fatigue;
- enhance number and standard of rest stops; and
- measure correlation of enforcement and marketing campaigns and ensure appropriate evaluation of programs.

Safer vehicles:

- measure fatalities per 100,000 population; and
- monitor sale of vehicles with enhanced safety features which minimise injuries.

Effective emergency response:

- monitor time taken to reach critically injured;
- identify and monitor remote area and high risk crash locations; and
- reduce fatalities in remote areas.

Final outcome measures:

Fatalities per 100,000 population.

4.4 New Zealand

Traffic Policing in NZ

There is funding for about 1660 traffic officers with some 900 dedicated at any given time, all under District commands. About half of 'strategic traffic hours' are contributed by Strategic Traffic Units, and the rest mostly by highway patrols and general duty officers.

Strategic Plans

The *Safety Administration Programme* (SAP) has been in operation since 1992, involving annual plans which coordinate the work of Land Transport NZ and the NZ Police. The current plan is for 2005-6. Its aim is 'to secure an environment where people can use the roads with confidence, free from death, injury damage or fear.' The SAP seeks to: improve road user behaviour; reduce the level of road crime; make the roads safer; improve vehicle safety; involve the whole community in road safety. The

police contribute to this through: directed patrols; traffic surveillance; response to offences observed; issuing traffic and infringement notices and follow-up.

The Ministry of Transport *Road Safety to 2010* strategy document, October 2003, pointed out the roles of speed and alcohol in road trauma, set fatality and injury reduction goals and stressed the need for engineering, education and enforcement to improve road safety.

Action Plans

Road Safety Action Plans are developed within Districts, using outcome focussed objectives, priorities and targets from the national strategy. Land Transport NZ, Transit NZ, local authorities and community representatives and the police all contribute, and there are defined responsibilities and contributions for all parties, the document being jointly owned by the partners. Evidence based performance measures are set.

Alongside a general deterrence approach, based on high visibility traffic law enforcement, NZ operates a system of Risk Targeted Road Policing (RTRP) involving Risk Targeted Patrol Plans (RTPPs). These are operational tasking documents which direct strategic enforcement hours to known safety risks (especially by location and time). The analysis of these risks is via a system of 'Crash Books' which provide long term risk profiles of specific areas.

Performance Indicators

Final outcome measures:

The final outcome goal is to reduce fatalities and serious injury crashes from the 729 deaths recorded in 1990 to 300 by 2010. In the year to April 2005 the figure was 418, implying a target reduction of just under 30% for the next five years. By 2010 the goal is to reduce hospitalisations to 4500.

Sub-goals by 2010 are:

- No more than 700 pedestrians and 270 cyclists killed, injured or admitted to hospital.
- Reduce crashes where truck driver was at fault, especially re loading and vehicle defects.
- Reduce crashes involving: failure to give way or stop, disqualified/unlicensed drivers, inappropriate lane use/overtaking, rear end collisions.

To meet the 2010 targets additional effort has gone into internal performance measurement, with a wide range of performance measures of: road trauma (final outcomes), offending rates (intermediate outcomes) and productivity (outputs/processes). It is an iterative process and measures change over time.

Output/process measures (police activities):

These are referred to as 'productivity measures', to show the efficiency of use of enforcement hours, eg numbers of tickets issued for speeding, drink driving and not wearing seat belts. Measures of effectiveness target particular behaviours, eg % of speeding tickets issued for offences in the lowest speed band above the 10kph tolerance, the % of visible safety offences relating to the manner of driving (ie the less dramatic and obvious offences).

Other output measures include: commercial vehicles inspected; targeted HMV speed operations; crashes (fatal, serious, minor, non-injury) attended and reported; traffic incidents, blockages and breakdowns attended; court documents served and executed.

Intermediate outcome measures (road user behaviour/attitudes):

Annual public attitude surveys measure: the % who believe there is high probability of detection for speeding, for drink driving, seat-belt non-compliance and non-compliance with traffic laws.

'Performance Criteria':

Meet or improve upon:

- mean open road speed of 99kpm;
- 85th percentile open road speed of no more than 107kpm;
- mean urban speed of 55kpm;
- 85th percentile speed of no more than 61kpm;
- annual number of fatalities with alcohol no more than 48;
- annual % of fatalities with excess alcohol no more than 21%;
- at least 92% seatbelt wearing in front seats and 75% in rear seat;and
- at least 90% of children with seat belts.

Upheld complaints about police attendance at traffic emergencies, and execution of court documents.

Analysis of relationships between outputs and outcomes is used to suggest cause-effect relationships. For example, increased enforcement in the lowest speed band is associated with a reduction in average speeds. (This seems, so far, to be borne out in practice.)

Monitoring and Reporting

Performance indicator data is recorded by front line officers, entered by support staff, and collated in data bases which all can access. Each District has one or more analysts who collate and evaluate data, disseminate information for strategic, operational and

tactical decision making, action plans and targeted patrol plans, monitor progress and supply feedback to managers, frontline staff and road safety partners.

NZ Police report quarterly on performance to the Ministers of Police and Transport. An internal national quarterly report also identifies best practice and highlights issues needing local attention, focusing alternately on comparing districts and comparing performance over time within districts.

A feature of performance measurement in NZ is the costing of policing outputs, to estimate the financial and staffing costs of achieving specific outcome targets, ie cost of achieving final outcomes.

Benchmarking

The 'National Scorecard' ranks district performance as low, medium or high, enabling comparison between districts and times. It has improved consistency across Districts and helped achieve minimum expectations of service delivery.

As performance improves across the country it is feasible that a district could perform at a high level regardless of their ranking on a particular measure. A benchmark system addresses this, based on the standards set by the best performing districts during previous years. If districts meet the benchmark the ranking becomes less relevant. In addition to benchmarks, comparisons are often made between a district's performance and the national average.

Comments on PIs and Benchmarking

The usefulness of performance indicators depends on what front line officers record. They are generally too busy to record what they do accurately, and if they do not record an accurate picture of their activity then the data is flawed. Staff will record the data they are expected to produce, and what gets inspected is what gets done.

A 'best practice' suggestion was for electronic ticket books that record GPS locations, check registration numbers and download to the data base automatically.

4.5 Queensland

Traffic Policing in Queensland

The Queensland Police Service (QPS) has approximately 353 dedicated operational traffic police officers: 4.9% of the total service strength and said to be the lowest in Australia. These officers are typically under District command. Queensland Transport is the lead agency for road safety in Queensland, while the QPS has primary responsibility for traffic law enforcement including random breath testing and traffic camera operations.

Strategic Plans

Queensland Road Safety Strategy 2004-2011 (QLD Transport/Department of Main Roads/Department of Emergency Services).

QPS *Strategic Plan 2004-2008*. Traffic Management is described as one of the four main outputs of the police service, and the community safety and engagement output also involves road safety issues. The Plan reflects input from the public, senior officers, patrol officers, research, state and national policies, coordinated by the Strategic Development Unit in the Commissioner's office. The *QPS Annual Report 2004-2005* also provides relevant information.

Action Plans

District Action Plans follow service-wide priorities, derived from: the *National Road Safety Strategy*, the *Queensland Road Safety Strategy* and the State and Federal Road Safety Action Plans. District Officers develop local plans, in consultation with the Regional Assistant Commissioner.

Performance Indicators

QPS subscribes to the national target of a 40% reduction in fatalities – from 9.3 to 5.6 per 100,000 population from 1999 to 2010. This will require a fall from the 310 recorded in 2003 to approximately 220 in 2010 (depending on population trends).

The 'key outcomes' described in the government Road Safety Strategy are:

- safe attitudes and behaviours, and optimum health outcomes in the event of a crash;
- safe roads, safe road environment and safe management of traffic;
- safe vehicles that reduce injury severity and maximise the chance of avoiding a crash; and
- a community that values road safety as a priority.

Final outcome measures:

The final outcome PIs in the QPS Strategic Plan are:

- number and rate of fatalities by contributing circumstances (fatigue, drink, speed and non-use of restraints, pedestrians);
- number and rate of reportable crashes by contributing circumstances; and
- number and rate of hospitalisations.

Performance indicators are negotiated between the QPS and the Treasury. The five key measures currently used are the three outcomes listed above, plus:

Output/process measures (police activities):

Percentage of time directed toward traffic management.

Intermediate outcome measures (road user behaviour/attitudes):

Rate of detection of offences by red light and speed cameras.

In addition to the data about road user behaviour derived from cameras, QLD Police draw on the national survey of Community Satisfaction with Policing which generates measures of road user compliance with speeding, drink driving and seat-belt laws.

Monitoring and Reporting

Data relevant to performance indicators is all recorded electronically. The Queensland Road Crash Database is maintained by Queensland Transport, though data originates from the police.

In 2001 the Commissioner introduced a system of six-monthly Operational Performance Reviews (OPR) in each of the 29 Districts, modelled on the NYPD 'Commstat' system. Their purpose is to address trends and issues in individual districts, and they are seen as a key driver of the Service's strategic management, performance management and operational planning process. Previously there were over 20 traffic performance indicators in use, covering outputs/processes, intermediate outcomes and final outcomes. This data is still collected and used as part of the OPR process. But the key performance indicators now used have been reduced to five. This reduction was in direct recognition from Queensland Treasury as to the level and degree of performance monitoring within the QPS, in particular those associated with the OPR.

These are coordinated by the State Traffic Support Branch and the Commissioner's Office, with a 'Managing for Outcomes' performance report sent to government every three months.

Benchmarking

The term 'benchmarking' is not used in Queensland, but there is a high degree of accountability through the OPR process, with a large number of further indicators being used as well as the main five within Output Three of the Strategic Plan. The indicators are compared between quarters and financial years. Annual reports are also made through the Ministerial Portfolio Statement and the QPS Annual Report.

Comments about PIs and Benchmarking

The State Traffic Support Branch of the QPS is broadly content with the present performance monitoring system, and believes that the five main performance indicators used in the Strategic Plan are the most useful ones, although they do not provide as comprehensive a range of measures as the earlier system using many more. However, these further measures are still available and are examined as part of the OPR process. The OPR process has been the single most important factor in enhancing and heightening the level of accountability and performance review monitoring processes within the Service.

4.6 South Australia

Traffic Policing in South Australia

There are approximately 300 dedicated traffic officers in SA, the majority under Local Service Area (LSA) command. Six metropolitan and one country LSA have dedicated

traffic resources. Four country LSAs have dedicated highway patrol officers. There is a specialist Traffic Support Branch of 120 police and civilian staff which provides support to LSAs. This reports to the Assistant Commissioner, Operations Support.

Strategic Plans

The South Australian government have adopted the national target of a 40% reduction in fatalities by 2010. In the current financial year SAPOL has a target of 7.5% reduction.

The Department of Transport publishes *South Australian Road Safety Strategy 2003-2010* which outlines the road safety problems of the state, including figures on fatalities and serious injuries and their major causes. Safer roads, safer people and safer vehicles are the main objectives. It quotes the *National Strategy 2001-2010* and it estimates that about one quarter of any improvement in road safety can come from better road user behaviour. Speed, fatigue, alcohol and drugs, seat belt use, and vulnerable road users

South Australia Police *Annual Report 2004-2005* lists five major service delivery plans, of which number three is road safety. Its aims are the regulation of road use, investigation of vehicle collisions and promotion of road safety. The outcomes are defined as improved road safety and efficient traffic movement, in addition to the related economic and personal benefits of safer roads.

There is not at present a separate strategic plan for traffic. This is covered by the Business Plan (see below) but a road safety strategy is under consideration. Other government agencies, along with community groups and the RAC are all consulted about traffic strategies.

Action Plans

The statewide Traffic Plan is prepared corporately and approved by the Deputy Commissioner and directs the allocation of resources in accordance with identified priorities. It involves a range of initiatives, which includes the use of performance indicators. Each of the 14 LSAs also produces its own plan to address local problems and is approved by the LSA Commander.

The SAPOL *Corporate Business Plan 2005-2006* includes traffic policing as a major component, with the broad aim to "...work in partnership with the community and other agencies to regulate road use and prevent collisions. It sets out a series of 'sub-programs' for traffic policing, each of which has several strategies attached to it, along with associated performance indicators. The Plan and the indicators are reviewed every two years.

Performance Indicators (showing the sub-program to which they relate):

Final outcome measures

- casualty crashes (including fatal) per 100,000 population. [Vehicle collision prevention].

Output/process measures

- Sessions conducted by Traffic Training and Promotion Section (road use education);
- Traffic cautions issued (road use education);
- Corporate/state-wide traffic operations (vehicle collision prevention); and
- Corporate/state-wide traffic operations that include a rural road safety component (vehicle collision prevention).

Intermediate outcome measures

- Detections as a percentage of the number of vehicles passing speed cameras (road use regulation);
- Static RBT detection rate as a percentage of the number of drivers tested (road use regulation);
- Mobile RBT detection rate as a percentage of the number of drivers tested (road use regulation); and
- Ratio of drivers testing positive (exceeding the prescribed concentration of alcohol) upon being treated at hospital following a vehicle collision (road use education).

In addition to the above traffic-specific indicators, traffic police also contribute to the other main components of the Business Plan: public order, crime prevention, emergency response and management, and criminal justice services.

Measures derived from public attitude surveys have not been mentioned as performance indicators.

Monitoring and Reporting

Various traffic data, including accident details, is now electronically reported (in a system called 'Traffic on Line') so that it can be entered immediately onto a central system to provide up-to-date information. Data is recorded, received and entered into the Traffic Intelligence Section (TIS) database and returns on the performance indicators are submitted quarterly. The SAPOL Annual Report summarises the past year's accident figures and reports progress on enforcement.

The Senior Executive Group is responsible for monitoring performance indicators and, along with the Traffic Support Branch, for delivering the traffic policing strategy.

Performance Outcome Reviews (PORs) are a process designed to strengthen the overall performance culture within SAPOL by promoting organisational accountability. Under the guidance of the Deputy Commissioner, a specialist team run monthly PORs reviewing a range of input, output and outcome measures for a particular area in a problem-solving approach to crime, operational and management practices.

Benchmarking

Many of the PIs contain targets which are adjusted according to factors such as: historical data, new legislation, new government strategies etc.

Comments on PIs and Benchmarking

All the main PIs are considered useful, especially the figure showing casualty crashes per 100,000 population. Key PIs, along with intelligence, are felt to provide indications of policing need and the effectiveness of current campaigns.

The only small problem currently experienced is that crash data, other than fatalities, takes three months to report against. This can sometimes delay the evaluation of an operation. Ways to upgrade the electronic recording systems of the TIS are under review.

4.7 Tasmania

Traffic Policing in Tasmania

Traffic Services personnel make up 8.2% of total District operational police. Each of the four operational police districts has a Traffic Services Section with an Inspector as the OIC with around 18 traffic personnel. An additional four positions form a Road Safety Task Force (RSTF) in each District. This task force concept has been a key partnership in Tasmania since 1996 and is funded by the Motor Accidents Insurance Board (MAIB). The partnership involves Tasmania Police, the Department of Infrastructure, Energy and Resources, and MAIB, and provides additional high visibility enforcement, integrated with education and publicity campaigns.

Strategic Plans

The 20 year vision of Tasmania *Together* was launched in 1999/2000 and developed over 200 benchmarks which provide targets for achievement in Tasmania by 2020. One of the 24 major goals relevant to road safety is 'To have a community where people feel safe and are safe in all aspects of their lives'.

The current *Tasmanian Road Safety Strategy* expires in 2006 with the new strategy likely to be for 2006 – 2009 and continuing the current strategies of education, enforcement and engineering to improve road safety. The three strategic objectives of: safer road users; safer vehicles; and safer roads, are likely to remain. The new strategy is currently under development.

The Department of Police and Emergency Management (DPEM) *Strategic Directions Framework 2006-2009* is currently in development and is the overarching document from which the DPEM formulate their Annual Business Plan. The four operational Districts in turn develop their own District Action Plans encompassing the objectives of the DPEM Plan.

Tasmania Police is currently developing a road safety framework which will be a product of the Strategic Directions Framework and also integrating the objectives of the *Tasmanian Road Safety Strategy*. This strategy emphasises the police contribution

to safer road use, safer vehicles and providing the strategic direction from which enforcement actions and initiatives are determined and implemented.

The objectives of the Tasmania Police road safety framework are:

- to ensure that road users, and the community as a whole, feel safer and are safer when using Tasmanian roads;
- to provide a more visible general and specific deterrence to inappropriate road user behaviour through a high profile police presence on our roads;
- to encourage more responsible driver attitudes and behaviours through a combination of education and enforcement;
- to better coordinate resources and enhance operational practices through more effective application of the intelligence-led policing model to the delivery of traffic policing services; and
- to more effectively consult and collaborate with the community and other key partners to improve road safety.

Action Plans

The Tasmania Police Traffic Secretariat identifies specific actions and initiatives arising from the road safety framework and recommends to the Corporate Management Group (CMG) who should be responsible for them, over what timescale and how performance should be monitored and evaluated.

Performance Indicators

The Minister's Foreword to the *Tasmanian Road Safety Strategy* makes reference to the national goal of a 40% reduction in road fatalities from 2001-2010, but notes that while the principles are broadly relevant throughout Australia, it is vital that each state develops its own road safety strategy.

There are currently 22 traffic performance indicators used by Tasmania Police, of which 14 are benchmarked. These have been developed and evolved over the past five years.

Final outcome measures:

The two final outcome indicators used are total crashes and serious injury crashes. Both are benchmarked (see below). In addition there are 20 other measures of activities [outputs].

Output/process measures:

- Seatbelt compliance TINS [B]
- Speeding TINS [B]
- Inattentive driving offence TINS [B]

- Mobile phone offence TINS [B]
- Random breath tests [B]
- Exceed offenders charged [B]
- Disqualified drivers charged [B]
- Suspended drivers prosecuted
- High visibility traffic operations: Metropolitan [B]
- Vehicles intercepted (@HV metro operations) [B]
- High visibility traffic operations: Rural [B]
- Vehicles intercepted (@HV rural operations) [B]
- Vehicle defect notices (District) [B]
- Vehicle defect notices (RSTF only) [B]
- Total TINS
- TINS (excl RSTF)
- RSTF TINS [B]
- % TINS for moving violations
- Road safety camera TINS
- Road Safety camera hours.

Intermediate outcome measures

Public attitude surveys including self-report measures of road rule compliance are often used within the quarterly CMG Performance Review process. Survey comparisons are made with other States and other Districts, equally to reinforce the traffic enforcement strategy and the benchmarking of specific indicators.

Monitoring and Reporting

The monthly Corporate Performance Report (CPR) is used to monitor performance indicators and also performance compared to agreed benchmarks. Data is collated monthly and annually. Each year performance indicators are all identified and developed with some subject to benchmarks and the remainder compared to the previous year's performance. The CPR displays all data for all indicators including direct performance comparisons in all cases between Districts.

Comments about PIs and Benchmarking

The DPEM must, like any other government instrumentality, be accountable, focused and performance driven. The use of benchmarks to achieve required outcomes is therefore seen as legitimate and necessary to ensure that police throughout the State achieve the Department's goals and objectives in crime reduction and detection, public safety and security, and reducing road trauma. The benchmarks are also designed to ensure that the key outputs and priority areas of the department's Annual Business Plan are achieved.

The best measurement of the value of benchmarking is seen as the performance of the Department, with crime reduction over the past five years being easily the best in Australia. Traffic law enforcement has also improved dramatically since the inception of the benchmarking process. When the process commenced there were 585 fatal/serious accidents recorded in the State. Last financial year that number had been reduced to 434.

District benchmarks are arrived at through a careful examination of local crime/traffic statistics, personnel availability and annual priorities. They are finalised and agreed to in discussions between the Deputy Commissioner and District Commanders. Where circumstances adversely impact on a District's ability to achieve a benchmark, the District Commander may apply for an authorised reduction to the relevant benchmark.

The authority of police officers to exercise discretion has not been removed by the benchmarking process, and cautions for traffic offences are included equally in output performance levels. Police officers are encouraged to exercise their discretion to caution for minor offences where considered appropriate.

The benchmarking process is not an exercise in accounting. It is a comprehensive, proven and effective management tool by which the administration of the Department can measure its performance and effectively direct the process of attaining corporate goals and objectives with the ultimate outcome being a safer community. The very significant reduction in crime and serious crash rates since the process commenced is seen as a clear demonstration of the value of this contemporary management strategy.

4.8 Victoria

Traffic Policing in Victoria

There are approximately 700 dedicated traffic officers in Victoria, the majority under local command.

Strategic Plans

A strategic plan *Arrive Alive* is issued jointly by the Department of Justice, Victoria Police, VicRoads, and the Transport Accident Commission (TAC); also *The Way Ahead Strategy 2003-2008*.

The Victoria Police Business Plan identifies key value areas. Traffic policing strategies are then developed locally by the five regions and one department. These

align their traffic enforcement programmes with those of TAC & VicRoads. The programs also align with the police Road Safety Priority Program Calendar.

Responsibility for delivering the Strategy lies with the Assistant Commissioner, Traffic and Transport Services Department.

Action Plans

There are service-wide, regional, divisional and district action plans. Regions devolve responsibility to Divisional Superintendents and District Inspectors for their Traffic Management Units to develop strategies and actions to reduce road toll and trauma, around state and regional calendars.

Key performance measures are divided between the five regions and each is committed to deliver these against the *Arrive Alive* strategy. Regions divide targets between Divisions and Divisions between Districts. Districts break down targets between their Traffic Management Units.

Performance Indicators

Final outcome measures:

- As part of Victoria Police's road safety strategy there is a commitment to a 20% fatality reduction for the period 2002-2007.

Output/process measures (police activities):

In the past year [??] Victoria Police conducted:

- 2,625,000 alcohol screening tests;
- 38,000 vehicle crash investigations;
- 200 drug impaired driving assessments;
- 37 heavy vehicle operations; and
- 220 targeted police operations.

The number of targeted enforcement operations conducted is proposed as a measure for 2006-07. The total number conducted will be reported to government on a quarterly basis for output acquittal purposes. This will also enable Victoria Police to monitor the proportion of enforcement operations that address identified challenges as specified in the Road Safety Priorities Program:

- drink driving;
- speed and speeding;
- heavy vehicle safety;
- drugs and driving;

- fatigue;
- young/novice driver safety;
- older driver safety;
- motorcycle safety;
- pedestrian safety;
- bicycle safety; and
- occupant protection.

Intermediate outcome measures (road user behaviour/attitudes):

An outcome goal is to positively influence road user behaviour and encourage compliance with road safety laws.

Further aims include the achievement of the following maximum measures:

- 20% collisions investigated involving alcohol/drug use;
- 8% collisions investigated involving fatigue;
- 30% collisions investigated involving inappropriate speed;
- 0.5% drivers tested failing the alcohol test.

Also: at least 90% successful prosecutions of heavy vehicle infringements.(as per Victoria Police *Business Plan 2005-2006*).

Measures derived from public attitude surveys have not been mentioned as performance indicators.

Monitoring and Reporting

Forms are completed for all accidents and fed into the Traffic Accident Information System. This feeds into the Collision Management Information System, managed by Corporate Statistics, and providing information service-wide. Daily road toll figures are collected in the Statistical Services Unit and monthly collision reports are collected in District Information Units.

Activity Return and Enforcement Analysis (AREA) forms are completed by all officers at the end of each shift.

PI data collected locally, reported monthly and quarterly to regions to Force Planning office who reports to Executive Command and government.

For the purpose of data collection for the *2006-07 Victoria Police Business Plan*, only targeted enforcement operations conducted at the Statewide and regional level will be reported to government.

Performance Indicators are reviewed at least every 12 months and changed as needed.

Benchmarking

The following benchmarks are used:

- comparison of fatal and serious injury crashes with other years;
- specified hours of operations (minimum 192 hours per country region);
- 89% operations in high alcohol times;
- 800 tests per region per week; and
- ratio of offenders for bus and car breath testing, eg Booze buses (no more than 1:900).

Comments on PIs and Benchmarks

The most useful measures are crash data and information on causes of crashes.

4.9 Western Australia

Traffic Policing in WA

Following ten years with traffic policing largely devolved to local control and a Traffic Support Division with no operational officers, the last year has seen a Traffic Enforcement Group (TEG) re-formed in the State Traffic Coordination and Enforcement Division. This Group provides a highly visible police traffic enforcement presence on main arterial roads, highways and freeways across the metropolitan area that also extends into some close country locations. This commitment to road safety and traffic management has seen a significant increase in police patrol hours by as much as 75% over the five year average. Although metropolitan and regional WA will continue to respond to incidents and have accountability for road safety and traffic management in their respective Districts, there are plans to increase the numbers at the Traffic Enforcement Group to provide an enhanced enforcement presence in the Districts. A particular focus will be on regional WA where fatal traffic crashes are 21% higher than in the metropolitan area.

To complement traffic enforcement, a Traffic Reference Group (District liaison); traffic cells in main centres; a Traffic Policy and Intelligence Unit; and a dedicated traffic enforcement officer position (career path for Traffic Officers) have been established.

Strategic Plans

With the creation of various specialist government offices such as the Office of Road Safety (ORS), and refinement of the Outcome Based Management budget framework, WAPOL now focus more on objectives and outcomes which policing can directly influence, in particular those that relate to its primary enforcement role.

Government road safety policy is set by the Department of Premier and Cabinet, on advice from the Road Safety Council of WA through the ORS. In 2003, the ORS produced the *Arriving Safely – Road Safety Strategy For Western Australia 2003–2007*. The State Government, Road Safety Council, Main Roads Western Australia, Insurance Commission of WA, WA Local Government Association, Royal Automobile Club of WA and WA Police all contributed to this plan.

The WA Police *2005-2007 Strategic Plan* provides the overall direction for the agency and was developed through consultation with other government agencies, road safety authorities, public submissions and research. It maps out the commitment and actions required of police from government, industry and the community over the period of the Plan.

Action Plans

The ORS Road Safety Priority Planner is a 12 month plan that was developed through multi-agency consultation that details initiatives that focus on safer roads, safer vehicles, safer speeds and safer road users through state-wide campaigns that target; drink driving, speeding, fatigue and restraints.

The WAPOL Annual Business Plan sets the focus for police activity at the Regional, Portfolio, District and Division levels for the forthcoming year.

A service wide Action Plan includes ‘Lawful Road User Behaviour’ at outcome three. Priorities for 2005-6 include: training officers in traffic law enforcement; concentrating efforts on black spots and high volume traffic areas; seat belt use, mobile phone use, speeding and recidivist drink drivers; use of local media; multi-agency promotion of community involvement in road safety; high visibility patrols; use of RBT and cameras in crime hot spots; gathering crime intelligence through use of ANPR and increasing targeted policing operations through intelligence.

District action plans include actions and operations for state-wide or district traffic campaigns.

There is accountability at all levels, with ultimate responsibility shared between A/C’s Metropolitan, Regional WA and Traffic and Operations and the Superintendent State Traffic Coordination and Enforcement.

Performance Indicators

The State’s *Arriving Safely* Strategy for 2003-7 sets an overall goal for all road safety partners to reduce fatalities to 5 per 100,000 population (presently 8.1%). Although WAPOL are committed to reducing fatal and serious injury crashes through enhanced enforcement activities there is some reluctance to commit to a finite target that may not be achieved as other components other than enforcement e.g. vehicle and road design also play an integral role.

Safer roads, safer speeds, safer vehicles and enhanced enforcement have played a significant role in the reducing fatal crashes by 32% since 1999 which equates to 44 lives saved.

WAPOL defines three main outcome areas:

- i) Lawful behaviour and community safety;
- ii) Offenders apprehended and dealt with in accordance with the law; and
- iii) 'Lawful road-user behaviour' (Traffic Law Enforcement and Management).

As defined in this paper the first of these implies intermediate and final outcome measurement, the second output measurement, and the third intermediate outcome measurement.

Final outcome measures:

Performance indicators from the *Arriving Safely* Strategy include:

- fatality and serious injury rate per 100,000 population;
- number and percent of crashes in which a person was killed or seriously injured not wearing a seat belt; and
- number and percentage of fatal and serious injury crashes involving pedestrians and cyclists.

A further WAPOL indicator of final outcome is:

- The extent to which the community thought speeding cars, dangerous or noisy driving was a problem in their own neighbourhood. (Data derived from the *ABS Community Satisfaction with Policing* annual survey.)

Outputs/process measures (police activities):

Key WAPOL performance indicators for traffic aim to show evidence of traffic law enforcement activities and initiatives and their impact on road user behaviour. They include:

- Hours on static and mobile patrols, hours on duty, general duties offences or incidents, overtime, RBTs, patrol, other traffic duties, non-traffic duties.
- Number of vehicles stopped, cautions issued for speeding, seatbelts, infringement notices issued for speeding, seatbelts and briefs issued.
- Information on traffic hours, infringements issued and RBT's are provided by individual officers, stations and districts via Daily Traffic Returns and maintained on the Teacis database.

The Road Safety Council Strategic Targeted Enforcement Program (STEP) provides extra funding (\$1.3m in 2005-6) for targeted activities additional to baseline enforcement. This generates various output measures including: vehicles stopped; patrol hours; infringements issued; RBTs performed; drink driving offences; arrests; and summonses issued.

Intermediate outcome measures (road user behaviour/attitudes):

An indicator from the State *Arriving Safely* strategy is:

- Number and percentage of drivers/riders over the BAC limit.

WAPOL indicators are:

- KPI 6.1: % drivers tested for drink-driving who exceed the limit;
- KPI 6.2: % vehicles monitored by speed cameras that exceed the limit;
- KPI 6.3: % drivers who have never driven when over the 0.05 alcohol limit (last six months);
- KPI 6.4: % drivers who have never exceeded the speed limit by 10kph or more (last six months); and
- KPI 6.5: % drivers who have never driven without a seat belt (last six months).

KPIs 6.3-5 are derived from the national Community Satisfaction with Policing annual survey.

Monitoring and Reporting

Data on enforcement is captured daily through electronic reporting, covering hours in the office, on patrol, crashes, arrests, all contacts, infringements issued and other tasks. Infringement Management Operations and electronic camera enforcement also generate indicators: total vehicles monitored; % vehicles over the speed zone limit; % vehicles over the enforcement limit; and numbers of infringements issued. This data is collated as it is processed, so performance can be analysed daily. Process staff in this area are benchmarked (numbers processed or film viewed).

KPI targets are set by WAPOL and agreed by government. Performance against the targets is reported to the government both through the annual budget process and in the Annual Report to Parliament.

Reporting against the Annual Business Plan is through the Organisational Performance Review (OPR) framework. Quarterly Corporate OPR reports were provided to senior management through Assistant Commissioners and Directors. In May and November District and relevant Division Superintendents complete a report on the OBM and Annual Business Plan objectives and targets. Superintendents also regularly report performance and trends to their Assistant Commissioners.

Benchmarking

WAPOL does not measure its performance against other jurisdictions or national averages, but against intra-state historical trends, allowing for increases in population and licensed vehicles.

Areas are set individual targets with staff benchmarked to reach these although there is no set number of contacts that individuals are to obtain. Figures are collected from electronic returns. Corporate reporting areas can calculate performance in relation to benchmarks.

Data for traffic campaigns is recorded daily by individual officers, collated by station officers and forwarded through a Daily Traffic Return to the corporate data system *Teacis*. Data on specific operations is forwarded through District/Divisional Officers to State Traffic Coordination and Enforcement. Information on traffic hours, infringements issued and RBT's are used to measure the effectiveness of campaigns against previous campaigns and as a benchmark for future campaigns.

Comments on PIs and Benchmarking

Strengths:

PIs are seen as accountable, verifiable and easy to collect, providing

- i) intelligence for planning resource deployment;
- ii) evidence of road user compliance levels;
- iii) evidence of officers' competence; and
- iv) the enthusiasm and focus by supervisors and district officers.

Weaknesses:

PIs may lead to a focus on speed, drink driving and seatbelts to the neglect of other offences.

In some cases unrealistic PIs have been set because road safety partners have lacked an understanding of the practicalities of enforcement.

In one instance a PI was based on 98% of drivers 'behaving safely', but if a successful enforcement operation involves charging these drivers with offences, then the percentage of 'safe' drivers will actually appear to reduce.

WA moved away from specific targets for RBTs and other traffic offences, but experience with the Traffic Enforcement Group suggests a need to define actual traffic patrol hours more precisely and to correlate this with numbers of contacts made. This may involve the re-introduction of some targets.

4.10 Canada: RCMP

Road safety and traffic policing issues at the Federal level in Canada are the concerns of Transport Canada, the Department of Justice and the Canadian Council of Motor Transport Administrators (CCMTA).

From 1996-2001 a national strategy known as *Road Safety Vision 2001* was in operation, with particular emphasis and increased penalties for non use of seat belts and drink driving. Over the five years there was a 10% reduction in fatalities, a slight increase in seat belt wearing and a decrease in the percentage of fatal crashes involving drink. The current national strategy is *Road Safety Vision 2010* , which continues the same four strategic objectives:

- raising awareness of road safety issues;

- improving communication and cooperation among agencies;
- enhancing enforcement measures; and
- improving national road safety data collection and quality.

The Strategy calls for a target of a 30% decrease in fatalities or serious injuries by 2010, compared with the average for 1996-2001. The sub-targets call for:

- 95% minimum seat belt wearing rate and proper use of child restraints;
- 40% reduction in road users fatally or seriously injured on rural roads;
- 40% reduction in people fatally or seriously injured in crashes involving drinking and driving;
- 40% reduction in unbelted occupants killed or seriously injured;
- 20% reduction in drivers killed or seriously injured in speed and intersection related crashes;
- 20% reduction in young drivers/riders (16-19 years) killed or seriously injured;
- 20% reduction in people killed or seriously injured in crashes involving commercial vehicles;
- 30% reduction in vulnerable road users (pedestrians, motorcyclists and cyclists) killed or seriously injured; and
- 20% decrease in road users killed or seriously injured in crashes involving high-risk drivers.

Benchmarks for all these sub-targets are calculated by taking the average figure for the five year period of *Road Safety Vision 2001*. The targets set are not, however, simply the figures to be achieved in 2010, but are based on the average figures in fatalities and serious injuries during the period 2008-2010. Thus, the baseline average for fatalities during 1996-2001 was 2,966 per year, and the target average for 2008-2010 has been set at 2,076 per year, making a 30% reduction.

Task forces under the auspices of the CCMTA assume ownership of these various sub-targets and develop initiatives to achieve them. The CCMTA is the official organization for co-ordinating all matters dealing with the administration, regulation and control of motor vehicle transport and highway safety. It incorporates all governments and transport related organizations, and the task forces represent federal, provincial or territorial governments, police services and non-governmental agencies. Annual progress reports are submitted to the Council of Deputy Ministers Responsible for Transportation and Highway Safety, which reports to the Council of Ministers.

The Royal Canadian Mounted Police (RCMP) provides a Federal police service and also local policing services to some of the provinces and territories on a contract basis,

while other provinces have their own police organizations. Most traffic rules are contained in provincial and territorial legislation and regulations.

The RCMP does not include traffic as one of its strategic priorities, even though the overall road fatality rate in Canada is slightly higher than that in Australia. However, they have adopted the targets of *Road Safety Vision 2010* in their Business Plans for each province and territory they police, and are currently developing baseline indicators for the sub-targets, with particular emphasis on rural roads where most of their accidents occur. Examination of 1996-2001 crash data emphasised the need for comprehensive and accurate collision data reporting. Risk-based indicators are being developed which will eventually be used to determine resource needs in designated regions. For monitoring purposes a national observational survey of seat belt use in rural areas was conducted in 2002, and Coroners data is used to show the number of fatalities involving drink driving.

The RCMP recognized that in order to meet the targets of *Road Safety Vision 2010*, a tool was needed to encourage traffic police to adopt a problem-solving approach to aligning service delivery with the fatal and serious injury crash problem. The Traffic Services Management Information Tool (TSMIT) was developed first by the RCMP in British Columbia, and adopted nationally in 2004 as the means to effectively manage and analyse traffic data. This newer version of TSMIT is presently being piloted in Saskatchewan and Manitoba and uses mapping software and GPS units. Its implementation should enable users to:

- identify high risk areas and groups;
- analyse crash record data (what, where, when and why);
- focus on building partnerships, education and enforcement;
- create accountability and facilitate problem solving to concentrate on root causes; and
- provide short and long term analysis and measure success and failure.

Some of the analyses to date have produced the following findings:

- 36% of fatal collisions at this particular unit are due to occupants being unbelted but yet only 23% of the enforcement is for occupant restraints.
- 39% of fatal collisions are occurring at intersections but less than 2% of enforcement is focused on intersections.
- 7% of fatal collisions involve speed as a contributing factor but 56% of enforcement activity is speed related.

These figures have been taken to indicate an imbalance between levels of enforcement activity and the extent of particular problems in the area concerned; too much enforcement time in the study area appears to be going into policing speeding and not enough into policing intersections and seat belt use.

Some non-RCMP police services are reviewing their traffic policing with a view to adopting elements of Vision 2010 into their Business Plans. The Ontario Provincial Police Business Plan (2005) states firmly that it is committed to the targets set out in *Road Safety Vision 2010* but does not go much further than this, except to say that one of the service's basic principles is to measure outcomes and benchmark itself against other organizations.

4.11 England and Wales

National Level

Traffic policing operates under varying degrees of centralised or devolved control, but all forces (the term 'service' is used nationally, and 'force' locally) have some core units of specialist traffic officers.

The 43 local police forces are nominally independent of central government and answerable to their individual police authorities, who are responsible for providing policing services in each area. But most of the funding comes from the centre and in practice an increasingly centralised system has evolved, with standard-setting and monitoring co-ordinated through the Home Office, Her Majesty's Inspectorate of Constabulary (HMIC) and the Association of Chief Police Officers (ACPO). (The ACPO Traffic Committee occupies a position roughly analogous to that of the ATPF.) This system has evolved particularly since 1983 when the first serious moves were made towards present day forms of accountability: the Home Office announced that future resources would no longer be provided unless the effective use of last year's resources could be demonstrated. (In rare cases where a force fails to meet requirements, control from the centre is imposed until standards are raised).

A National Policing Plan for 2004-07 sets out priorities for all police forces. Since April 2004 a Police Standards Unit, working with HMIC and ACPO, has monitored standards through 'Strategic Performance Indicators' (SPIs) covering: crime, public safety, assistance, efficiency and effectiveness and public satisfaction. The results are published annually showing 'best' and 'worst' performing forces. The tables published in October 2005 show West Mercia scoring highest with 16, the London Metropolitan Police with 4 and Humberside lowest with -3. There is much debate over the validity of these measures, and the Home Office stresses that comparisons should only be made within 'families' of forces which are similar in their demography, geography and policing environments.

HMIC conducts regular force inspections, supplemented with 'thematic' inspections of particular business areas. The last major thematic review of traffic policing was published as *Road Policing and Traffic* in 1998, and its recommendations have influenced subsequent priorities, standards and performance indicators for traffic policing. It proposed three strategic performance indicators: numbers of personal injury and fatal accidents; public confidence; and road user related crime. It then set out 55 questions 'designed to focus the attention of those with specific or functional responsibilities for road policing or traffic officers'.

The Department of Transport is the other significant government department involved in road safety. Its Target 2010 initiative in April 2004 said that, compared with the average for 1994-1998, its goals were:

- 40% reduction in those killed or seriously injured in traffic collisions;
- 50% reduction in the number of children killed or seriously injured; and
- 10% reduction in the slight casualty rate, expressed as the number of people slightly injured per 100 million vehicle kilometres.

This was followed in January 2005 by a *Roads Policing Strategy*, issued jointly by ACPO, the Department of Transport and the Home Office. Its main concerns were: bad road behaviour as a form of anti-social behaviour; the links between offending on the roads, vehicle fraud and other forms of criminal behaviour; the social and financial costs of road accidents; the role of technology in enforcement and traffic management; the reassurance role of traffic patrols; and the role of national and local partnerships.

It then set the following priorities for traffic policing:

- denying criminals the use of the roads by enforcing the law;
- reducing road casualties;
- tackling the threat of terrorism;
- reducing anti-social use of roads; and
- enhancing public confidence and reassurance by patrolling the roads.

The strategy said the numbers killed and seriously injured would continue to be the 'Best Value Performance Indicator' for road policing in the Policing Performance Assessment Framework (PPAF), and that this was a meaningful measure of outcome rather than input or activity. Information on police activity in relation to these issues (drink driving, speeding, non use of seat belts and dangerous driving) 'will be of interest, though this reflects resource inputs as opposed to success in challenging the problem'. It was not appropriate for the PPAF to include indicators of this kind, but the police would develop 'simple and practical indicators of success which police forces locally can use and report to their Police Authorities'.

This statement gave a clear message to forces that they should move away from the traditional approach of measuring inputs and outputs and think more about the effectiveness of these and what they produced in terms of outcomes. These priorities were reiterated by ACPO in its own policy statement on traffic policing.

As further specific indicators of outcome the Strategy proposed (intermediate outcome) measures such as:

- % of positive breath tests following collisions (prevalence of drink driving);
- speed camera data (prevalence of speeding);
- levels of observed seat belt use; and

- opinion poll data on how safe and secure road users feel.

As part of the PPAF a set of Statutory Performance Indicators (SPIs) for 2005-06 were issued from the Home Office to police forces and their authorities: The ones relevant to traffic were:

- Satisfaction of victims of ... vehicle crime and road traffic collisions with respect to:
 - i) making contact with the police,
 - ii) action taken by the police,
 - iii) being kept informed of progress,
 - iv) their treatment by staff,
 - v) the overall service provided.
- Vehicle crimes per 1,000 population.
- Number of people killed or seriously injured in road traffic.
- Collisions per 100 million vehicle kilometres travelled.

The priorities for traffic policing in England and Wales currently being set from the centre therefore stress a wide range of issues:

- intelligence-led traffic policing;
- an outcome rather than output focus;
- the role of traffic police in policing crime;
- the need for integration between traffic and general policing, at both strategic and operational levels;
- the need for partnerships with other agencies;
- concerns about terrorism;
- public satisfaction with and perceptions of traffic policing; and
- anti-social behaviour on the roads.

Local Level

Apart from the national standards embodied in the SPIs listed above it is for individual forces to develop their own action plans and related performance measures, guided by intelligence, research, the views of the local police authority and guidance offered by HMIC through the ongoing inspection process. Each year they provide an

annual report to the police authority and then to the Home Office which accounts for resources used and results achieved and sets out plans for the next year.

The performance indicators used by one force are offered here as an example: those of the highly-rated West Mercia Constabulary, a force of around 2,400 uniformed officers and 1,500 civilian staff, serving a population of just under 1.2 million.

The *West Mercia Three Year Strategic Plan and Annual Strategic Joint Plan, 2004-2007* is issued jointly by the police force and its police authority. In relation to traffic policing it says:

Priorities:

We will continue to target improved road safety, following the Government's Target 2010 initiative aimed at reducing the number of injuries resulting from road traffic collisions compared with the average for 1994-1998, as follows:

- a 40% reduction in the number of people killed or seriously injured;
- a 50% reduction in the number of children killed or seriously injured; and
- a 10% reduction in the slight casualty rate, expressed as the number of people slightly injured per 100 million vehicle kilometres.

Strategic Priorities until 2007

- We will reduce road casualties by using education where possible, enforcement where necessary and lobbying for engineering where needed.
- We will target our enforcement activities at collision hot spots and routes and evaluate the results of these activities.
- We will continue to improve road safety in order to achieve or exceed the Government's target for 2010 to reduce the number of people killed or seriously injured by 40 per cent.
- We will continue to work with the other organizations in the Safety Camera Partnership in order to become more targeted and effective in reducing casualties caused by road collisions (their work and ours will complement each other).

In 2004/2005 our priorities will be to:

- Support divisions in the achievement of local priorities, by providing specialist support in road policing and operations.
- Implement enforcement and education campaigns.
- Partnership activity with the Institute of Advanced Motorists to improve driver skills.
- The National Bikesafe initiative to improve motorcycle riding.

- Enforcement and education on the use of seat belts.
- Conspicuity education, particularly with pedestrians.
- Impairment (Drink/Drugs driving).
- Ongoing enforcement of speed limits.

The current Performance Indicators for traffic policing in West Mercia are:

Road Casualties

To reduce the number of people killed and seriously injured in road traffic collisions in line with the Government's Safer Roads Target 2010. [a 40% reduction in the numbers killed or seriously injured]. Each year a target [benchmark] is set for road fatalities, based upon the average for the past year, both nationally and within the relevant 'family' of forces.

Breath-Testing

To promote more responsible driving habits by monitoring the use of breath-tests at scenes of collisions involving death or serious injury.

Promotion of Seat-belt Usage

To promote more responsible driving habits by campaigning for increased seat-belt usage amongst motorists and vehicle passengers, and monitoring of enforcement practices.

4.12 Other European Countries

Within the European Union (EU) the European Transport Safety Council works to encourage the identification, promotion and implementation of best practice in road safety across the EU through seminars and conferences, reports, news letters etc. Some of the variations in practice are of relevance to measurement issues, for example, the different national laws relating to the use of mobile phones while driving and the different blood alcohol levels used to define drink driving. While such variations prevail it will always be difficult to benchmark or otherwise compare performance in one country with that in another.

The EU has set itself the target of halving the number of traffic fatalities by the year 2010, taking as a model the philosophy in Sweden known as *Vision Zero*. This describes the goal adopted by the Swedish Parliament in 1997 for the complete elimination of road fatalities and disabling injuries. The target for the year 2000 was to reduce fatalities by 25% compared with the base year of 1996. This would have meant a reduction from 537 to 400 fatalities. However, the target was not met and the actual figure was 591. The target for 2007 is now a reduction by 50%.

The Vision Zero plan has four components:

1. Human life is not something you can trade off for benefits of road transport systems. Human life is the paramount concern.
2. The professional society, politicians and the private sector, has responsibility for the inherent safety of the road transport system, and the citizen should follow the road regulations.
3. The safety of the road transport system should be based on the failing human, not the perfect human. Designs should allow for human vulnerability.
4. The driving force for change is the citizen demand and expectation to stay alive. Road safety should not be an economic issue, but stem from demands of individual citizens.

The Swedish National Road Administration (SNRA) sets road safety targets and national and local governments fund safety work. The SNRA and the Swedish National Road and Transport Research Institute are responsible for annual evaluations, based on a detailed programme with many specific sub-targets. The main aim is to develop crash, casualty and fatality predictions.

Road user behaviour that is monitored includes: drink-driving, excess speed, other violations, use of safety equipment in cars (e.g. seatbelts and child restraint systems), visibility of pedestrians and cyclists, and the use of helmets.

Other items being monitored cover: vehicle crashworthiness, emergency services rescue times, safety opinions of the general public, and surveys to evaluate if roads are built to safe standards.

Notable features of the Vision Zero strategy are the extent to which it sees the key to safer roads in (i) road and vehicle engineering measures and (ii) the acceptance or responsibilities for road safety by a wide range of agencies. These include: politicians, planners, road managers, vehicle manufacturers and dealers, road safety organisations, companies who purchase transport services, transport providers and all road users. Police are included in the list as those ‘...who ensure traffic rules are followed’ but are not seen as having principal responsibility for safer roads.

A paper produced in Finland by Mäkinen et al (2003) highlights some of the problems in measurement, evaluation of the effects of enforcement and making comparisons between countries. They mention, for example, the lack of reliable or comprehensive measures of non-compliance with traffic laws (p33). Direct observational studies are seen as the only truly valid measure, though some driver behaviours are more difficult to observe than others. Levels of enforcement can also be difficult to define, and another well known problem in relating outcomes to outputs is that speed enforcement through high visibility surveillance has a limited duration, both in time and space.

The paper’s conclusions include: evaluation of enforcement should be a top priority; for this purpose target setting is essential; targets should emphasise behaviour rather than just accident figures; as well as accident rates important evaluation criteria (measures) include compliance rates, perceptions of police activity and safety and internal performance indicators; accident rates should not be seen as the only measure of effectiveness; indicators should be reviewed and amended over time.

The paper notes (p46) that in many countries no system of indicators for police enforcement activity have yet been developed. Without such measures the results of different studies cannot be compared and the reasons for the effectiveness or otherwise of enforcement are difficult to understand.

General Observations about the use of PIs and Benchmarking

It is clear that performance indicators are used in Australasia at both 'strategic' and administrative' levels; in the first case as measures of the effectiveness of traffic policing, and in the second as indicators of its activities and efficiency.

The number of indicators mentioned varied greatly between services. The main one used was the number of fatalities (measured in various ways), but a large number of other items were covered. Most concentrate on measures of road trauma as far as their high profile strategic indicators are concerned. One had previously had over 20 measures, which had recently been reduced to only five, the rest being still in use, but now simply used as part of the Corporate Review process: administrative rather than strategic measures. Others still have a large number of indicators in use.

Definitions of Performance Indicators

Final outcome measures

All Australasian services recognise that the major final outcome goal for traffic policing is a reduction in road fatalities, followed by a reduction in non-fatal accidents. Apart from reducing the trauma of these accidents, the importance of reducing the monetary cost to society was sometimes noted.

A target figure currently aimed for by many countries is a 40% reduction by 2010. Some jurisdictions in Australasia adopt this target figure but others are more modest in their aims, or are reluctant to specify a finite number that may not be achieved. Some go further and specify a goal of reducing fatalities and accidents amongst 'vulnerable' road users, such as children or older people.

The Australian Transport Safety Bureau considers three measures of fatalities:

1. The number of deaths per 100,000 population shows the public health risk associated with road trauma.
2. The number of deaths per 10,000 registered vehicles permit comparisons between services allowing for different levels of vehicle ownership.
3. The number of road deaths per 100 million vehicle kilometres travelled is a direct measure of the risk associated with road travel.

In human terms the first measure has the most immediate impact but is a less precise indicator of road safety, driver behaviour or road conditions than the second and third measures. Practice seems to vary between services as to which of these ratios is used as a high-profile indicator. Some use the 100,000 population figure, some the 100,000 vehicles, some both and some just the fatalities total. One used one in its annual report

and the other in providing information for this paper. In England and Wales the number of deaths per 100 million vehicle kilometres travelled figure is the figure used for strategic purposes.

Other final outcome measures

In large Australian cities or densely populated European countries where traffic congestion is a serious economic, environmental and social problem as well as a road safety one, the free flow of traffic becomes an important overall goal for traffic policing, although achieving it is not something that is easily measured, and was not widely mentioned in Australasia.

One other measure which can be regarded as a final outcome is the perceptions of the general public regarding the safety of road travel, driver behaviour and traffic policing. In England and Wales there is now particular emphasis on measuring the public response to all aspects of policing because policing by consent is important in a democracy. Public attitude surveys are the normal means of generating this type of measure, sometimes supplemented by community consultation exercises.

In Australia the annual Community Satisfaction with Policing national survey was mentioned by most but not all services, and New Zealand has its own equivalent survey. However, not all appeared to rely on it as a source of key performance indicators.

Intermediate outcome measures

Various figures were used to provide measures of road user behaviour, especially in regard to the use of seat belts, drink driving, and speeding. Two kinds of measures were used here; one derived by calculating what proportion of drivers stopped, tested or photographed were actually offending; and one derived from self-report survey measures, asking drivers if they had committed each offence within a specified time frame.

Outputs and processes

A number of measures of this kind were used, covering the various traffic policing activities: numbers of vehicles stopped, TINS issued, high visibility operations conducted, time spent on traffic patrol, RBTs conducted, training sessions conducted; and so on.

Comments from Police Services

While most services gave a fair account of practice in their jurisdiction, the quality and amount of information varied and there was little interpretative comment, although all were invited to offer views on the value of indicators and benchmarking. Comments ranged from the overtly cynical (front line staff will only record what they feel like recording) through to the non-committal (not my job to express a view on this), to none at all. However, the following positive comments were offered:

- automated data recording is a help to measurement;
- PIs are accountable, verifiable and easy to collect;

- PIs provide intelligence for planning resource deployment;
- PIs show evidence of road user compliance levels;
- PIs, along with intelligence, provide indications of policing need and the effectiveness of campaigns;
- PIs show evidence of officers' competence and supervisors' commitment; and
- benchmarking is not a rigid system but allows management flexibility and front line discretion and helps reduce both crime and road trauma.

Suggested weaknesses of PIs were:

- PIs may lead to a focus on speed, drink driving and seatbelts to the neglect of other offences; and
- unrealistic PIs may be set if road safety partners do not understand the practicalities of enforcement.

5. Discussion

Traffic Policing Resources

Dealing with traffic problems was not part of the original task of the police but has, by default, fallen increasingly to them during the 20th century, and there is still an unresolved issue about what proportion of staff, time and other resources should be expended on this work. This is partly a political question and partly an empirical one, and it is through the use of improved performance measures that the empirical question can be better addressed. Decisions about the balance of resources are easier if the effectiveness of different types of resource use can be measured. Much police work is multi-functional, but a lot of specialised skills are involved in traffic policing and these may be lost if traffic officers are put under the command of non-specialists and used as a general policing resource. Some services claim that the reduction of specialist capacity has led to reduced effectiveness. This issue is beyond the remit of this paper, but unless it is clear which officers are performing traffic-related functions then it is difficult to measure and analyse policing contributions to road safety outcomes.

Partnerships

In most states the over-arching strategy for road safety is provided by the government ministry responsible for roads and transport, with the police setting their own strategies and action plans into that wider context. Policing can only contribute to a proportion of the possible reduction in road trauma, so that logically the ideal model of performance measurement would take account of the inputs, outputs and outcomes attributable to all parties to the equation, and this would affect the way measures are defined and used.

In Sweden this goes much further, with road safety being defined substantially in terms of engineering and technology. In other countries too there is now, for example, the option of 'interlock' technology: cars which will not even start if an alcohol-impaired driver tries to start them. At a stroke, such technology removes some of the need for policing and puts the onus on other road safety partners. Disqualified driving, speeding and other offences could eventually be eliminated by technology. But until every vehicle is suitably fitted there will still be a need for other types of technology (roadside cameras) and for direct police enforcement.

Linking Indicators with Enforcement

Just as the purpose of police enforcement is to reduce road trauma and improve road user behaviour, so the purpose of performance indicators is to chart the elements and links involved in this process, in such a way as to demonstrate how effective particular strategies or actions are and to suggest how they might be made still more effective.

Unfortunately, the relationship between enforcement activities (outputs) and accident reduction (outcomes) is not as direct as is often claimed or implied. First, the immediate cause of accidents is the attitudes and behaviour of road users; what policing can do is to help influence these, so that the link between policing and road trauma is a two stage relationship. Second, as noted already, there are factors other than policing which contribute to road user attitudes and behaviour.

Some of these complexities are seen in regard to RBT. Although this has been a great success for Australian policing the exact causal mechanism involved is difficult to trace, because of the various social, economic and legal factors which come into play in reducing drink driving. Individual states have shown very different rates of positive tests, depending on where and when testing has been done: the rate may go up if certain times and places are targeted, but this does not necessarily mean that the level of drink driving in the population as a whole has gone up; it just means that the targeting has been successful. And, as Harrison (2003, p4) notes, a different measure of drink driving will result depending on whether it is based on the numbers of alcohol-affected drivers on the roads (measured by RBTs or by self-report driver surveys) or on the numbers of crashes involving drivers who have been drinking. These issues he says are rarely addressed.

In terms of measurement priorities more emphasis seems needed upon measures of intermediate outcome: road user attitudes and behaviour. These can come from observational research and public attitude surveys which are already in use in most jurisdictions, but lend themselves to further refinement. There is a parallel here with the history of survey methods as a way of measuring crime. At one time the idea of a survey based measure of crime was unfamiliar and police-recorded aggregate figures were seen as the only possible measure of crime. Since then survey based measures of crime in the USA, UK and elsewhere have come to be regarded as in many cases far better indicators than police recorded crime figures and are now routinely quoted in police, administrative, political and media circles. Police-recorded measures of road fatalities and serious accidents are actually likely to be more accurate than crime figures, but the potential of survey or observational measures in this field has yet to be

fully explored. And, it is more realistic to try to measure direct causal links between policing and road user behaviour than between policing and road trauma.

Analytical Approaches

In their simplest form performance indicators do no more than count what is obviously and easily countable. But most police services now realise that rather more is possible and are moving away from this towards a more analytical framework which tries to look at cause and effect and find ways to measure their relationship. Indicators are needed which contribute to this enterprise. Thus, the term performance indicator is now used to describe many different types of measures. But no one measure can capture all aspects of traffic policing, and the things which clearly are important cannot necessarily be easily quantified – or even measured qualitatively. For example, it is impossible to quantify the numbers of accidents which do not happen because they are prevented.

Inputs, Outputs and Outcomes

An analytical approach requires a clear distinction between inputs (resources), outputs (police actions) and outcomes (road behaviour and road trauma). All the services examined used measures of the second and third types. They also kept records of the first but did not normally call them performance indicators, and only one made an effort to bring input measures into the cause-effect formula in a detailed way, aiming to calculate the resource cost of every outcome as well as output. All thinking about performance indicators needs to make a clear distinction between these different types of measure, at both the conceptual and practical levels.

Strengthening Outcome Measurement

The accountability culture in public organizations has ensured that all police services now recognise a need for an outcome focus in their work, and that a major purpose of performance measurement is to demonstrate a link between police enforcement activities and road trauma. However, an emphasis on outcome measurement was not always strongly apparent in the returns from police services. Improved outcome measurement involves various considerations:

(a) Fatalities and Accidents

Fatalities and serious accidents are normally fairly well recorded, but their **presentation** is not as straightforward as might appear. Four different figures are used to measure road trauma. Each figure has its uses, of course, but if comparisons are to be made then obviously all services must calculate and present the same measure, whether this is simply a raw total or – much better – a ratio, in relation to population, to registered vehicles, or to vehicle kilometres travelled.

There is then the issue of whether the measure describes fatalities (ie people killed) or fatal crashes (a somewhat smaller figure, allowing for multiple deaths in some accidents). Each measure is valid in itself, but means something different. Ideally, too, comparisons should also allow for differences in levels of vehicle ownership and use between states/territories and for changes in such differentials over time. It should be

possible to develop a formula which takes account of these things, otherwise comparisons over time or between areas could mislead.

The exact **definition of a road fatality** varies between countries. The 1968 Vienna Convention of Road Traffic defines this as "...any person who was killed outright or dies within 30 days as a result of the accident". Australia, NZ, the UK, the US and many other countries comply with this, but some European and other states, including Japan, do not.

The **definition of a 'serious' accident** is affected both by subjective judgements and the use of different official criteria, such as: whether the police recorded it as such; whether a doctor was in attendance; whether the victim was hospitalised; or whether they were kept in hospital overnight or longer. Standardisation is obviously desirable for comparative purposes.

Electronic record keeping of the number and type of accidents and fatalities occurring from day to day, along with their associated causal and environmental factors, is highly desirable, both as an aid to daily deployments and to longer-term analysis and strategic decision making. It is not always clear that such data are stored in the same place and readily available to all those police officers and other agencies involved in road safety. The same goes for all other outcome data, such as survey results on road behaviour.

Measurement is only meaningful if it uses **reliable, valid, timely and complete data**, but this is not always readily available. For example, there may be under-reporting of accidents in some places, particularly remote areas which can distort aggregate figures and causal analyses.

Another problem with fatality figures is that only over longer periods of time and/or a wide area do they become **large enough for reliable statistical analysis**. Larger numbers can be generated by taking all accidents – or serious accidents – rather than just fatalities, and observable patterns will emerge more quickly if this is done.

When enough fatalities or accidents are analysed, patterns may emerge if account is taken of their causes (drink, speed, etc), types of location, demographic details of those involved and the police districts in which they happen. The problem of multiple causation will often occur: drink and fatigue may go together as the cause of an accident. But there are ways in which a skilled analyst can try to partial out these multiple effects if the numbers are sufficient.

(b) Community Perceptions of Road Safety

A second type of final outcome measure is the perceptions about road safety and traffic policing, on a scale which allows reliable conclusions about cause and effect to be made at as local a level as possible. Service-wide views are useful to know but are of less value for decision-making about resource use and deployment. This type of measure is important as an indicator of (a) road safety (b) police impact on the community, and also (c) as a measure of anti-social behaviour, which is an increasing focus of police concern in its various manifestations, of which road behaviour is a very important one.

(c) Road User Attitudes and Behaviour

Surveys, observational studies or other measures can be designed to provide as localised a picture as possible of actual road user attitudes and behaviour. The potential contribution of such studies has not yet been fully exploited. A number of jurisdictions make some use of the national annual Community Satisfaction with Policing survey, but only one or two give it a high profile as a source of performance indicators. Also, more locally-based observational studies of driver behaviour could be usefully conducted.

(d) Evaluation

The evaluation of all new and ongoing road safety initiatives is important. Most of the present output/process measures which are described as performance indicators have their uses, but only realise their true value when analysed in relation to intermediate and final outcome measures.

(e) Avoiding Distortion

The existence of performance indicators can distort the priorities, practices and record keeping of patrol officers, and some managers are highly sceptical of their value for this reason, pointing out that officers are much more likely to record things which (a) are easy to record (b) are non-verifiable by supervisors and (c) look good on their work record. Because of the legal, procedural and human rights issues involved, the question of record-keeping by patrol officers is a vexed one. Attempts to measure work activity are invariably disliked as overly bureaucratic and controlling. At its worst the 'accountability culture' takes effort away from the primary tasks of the organization and induces cynicism amongst those required to be accountable. These concerns must be balanced against the real value which can accrue from a more research-based understanding of how policing works.

Some steps can be taken to minimise distortion:

- Traditionally measurement has been done simply to account for the use of resources, but it is far better to use measures for calculating cause and effect relationships.
- All those required to record information should know why this is required; people are more likely to cooperate if they can see the purpose of doing so.
- Even where they do not, they are more likely to cooperate if they can see that staff in other parts of the organization are subject to the same procedures as themselves. This may be especially relevant in relation to benchmarks.
- If something can be recorded automatically, then the scope for human error or mis-recording is reduced.
- Some information may not be amenable to automated recording. Where this is so then the number of items to be recorded manually should be kept to a minimum.

Having a fairly large number of indicators – and benchmarks – may help avoid too much concentration on a small number of measures and the danger of patrol activities being slanted towards those few things which are given a high profile. The best balance is likely to be a small number of high profile indicators, along with a larger number of indicators which are monitored through an Operational Performance Review process.

(f) Benchmarking

Performance indicators mean little taken in isolation. A measure must be judged against some other measure, whether over time or between districts or jurisdictions. Where this other measure is expressed as a fixed standard or target figure to be aspired to then it becomes a benchmark.

Benchmarking is a politically sensitive concept, both within and outside the police organization. In the public mind it gets understood as target setting for the sake of it, and potentially discriminatory against the motorist. Within the organization, individuals or departments may feel they should not be judged against colleagues. Some services openly use benchmarking while others call it something else and others say they do not use it at all. Some services were unwilling even to comment on the subject.

Inevitably, all police services make some comparisons of performance – over time and between individuals, districts, departments or other police services. Explicit benchmarks or targets may not be set, but there is invariably an assumption that performance ‘next time’ ought to be slightly better than ‘last time’. One suggestion was that benchmarking could be safely used in traffic policing if all other parts of the service were also expected to work to similar targets.

Operational Performance Review

This term is commonly used, though others – such as Performance Outcome Review – are used to describe a similar process of ongoing internal monitoring with regular reporting through the hierarchy; monthly, quarterly, six monthly. Many measures which are effectively performance indicators are used in the course of performance reviews, but are not necessarily highlighted as such in annual reviews or other publications. The case for publishing indicators is that it provides transparency and helps drive up standards, especially if benchmarking is used. The main argument against, is that publicity makes the exercise too political and can lead to distortions in data recording.

Consistent Measurement and a Unified Approach

While each Australasian police service wishes to retain its autonomy it is clear – from the work of the ATC and the ATPF, for example – that more unified approaches and standards are possible. Standardised measures obviously need to be agreed if there are to be meaningful comparisons or benchmarking. One danger to avoid here, though, is having too many central bodies offering unified plans, standards and measurement criteria.

Two Models of Road Safety and Traffic Policing

Two slightly contradictory philosophies exist today in regard to achieving safer roads, and this has implications for measurement. The first puts the emphasis on achieving (and measuring) outcomes rather than simply counting outputs. The latter approach grew from earlier 'bean counting' management methods and does not fit well with modern 'outcome based budgeting'. Although more sensible than the traditional approach, it still assumes that policing outputs do in fact lead to road safety outcomes. But this is not wholly supported by the evidence, and there is widespread agreement in management circles that more lives can be saved through road and vehicle engineering than through police enforcement.

These findings lie behind the second philosophy, implied in the approach most strongly advocated, perhaps, in Sweden, which aims to control road user behaviour substantially through engineering (road and vehicle) and legislation. If this is the case, then logically there is a question mark over the idea that traffic policing should be largely concerned with outcomes, because it is not fully within the power of the police to deliver those outcomes. These are not mutually exclusive philosophies, but there is a certain mismatch between them. Decisions about what is to be measured should flow from a view as to the relative value of these approaches.

Limitations of the Study:

1. This report has been able to provide only brief summaries of how measures are generated and the thinking behind them. Ideally, the consideration of performance measures should be based upon a full analysis of the resources, structures and processes within police services, rather than try to isolate measurement as a discrete aspect. Also, traffic policing should be set within its wider context, looking at the contributions to road safety of various other agencies as well as the police. Meaningful measurement can only flow from practice which has a clear structure and logic to it, based upon causal models of what does or might work.
2. The quality and detail of the information available varied somewhat. But the main issues were illustrated sufficiently by what was provided. Slightly different information was supplied at various times by different members of police jurisdictions. This may just represent changing situations or priorities, but there were also – inevitably – varied views of the subject. One person gave detailed accounts of a fairly sophisticated performance measurement system, whereas another was sceptical of that system because he felt the basic information from front line officers on which it depended was often flawed.

6. Summary – Key Findings and Best Practice

- Traffic policing is conducted in different environments with varying structures and priorities, so that complete standardisation may not be realistic. Some services, for example, have a much larger urban component than others, and some have 'task forces' which provide extra traffic policing input. Such factors need to be taken into account in measuring performance.

- Strategic plans, business plans and action plans are used in varying combinations and at different levels. Performance measures are to be found within any or all of these.
- Services use varying numbers of performance indicators, though sometimes measures are used without calling them this, and sometimes a number of measures are used but only the few 'strategic' level ones are publicised.
- Some form of operational performance review is normally used, and many measures are used within this context rather than as high-profile 'key' performance indicators.
- The explicit benchmarking of indicators is not widespread, though de facto benchmarking is often used within operational performance reviews.
- Most services recognise the importance of adopting an 'outcome focus' in their policing and, thus, in performance measurement, but this is not always well developed.
- Apart from the major outcome measure of road fatalities and/or accidents, many indicators still tend to reflect policing outputs and processes.
- Several services now make use of public attitude survey data to provide final or intermediate outcome measures.
- Some concerns were expressed about the accuracy and completeness of the performance measurement data being recorded by front-line officers.
- Various ways are noted in which the recording and use of outcome measures can be made more accurate and reliable on the one hand and, on the other hand, more comprehensive.
- All services were involved in road safety partnerships, but not always comfortably, so that they had to accept priorities and measures which they disagreed with. But the recognition in western policing that road safety depends as much if not more on engineers, manufacturers and politicians, suggests that police may sometimes have to accept a secondary role in partnerships.
- Strategic plans for traffic policing are often drawn up within a political and administrative framework which involves several different strategic documents and review procedures. This suggests a danger of duplication and over-bureaucratisation.

7. Conclusions/Recommendations

The following priorities are suggested by the findings of this study for consideration by the ATPF. Some of these are not new, but others may require re-thinking.

- i) In collaboration with other partners, decide an overall strategy for road safety and, within that, for traffic policing. The strategy must reflect a realistic

expectation of the police role, taking account of other agencies priorities and the roles of legislation, economics, education and, particularly, engineering. The strategy should also reflect decisions about the right balance of specialist and generalist traffic resources.

- ii) Performance measures should cover both outputs and outcomes, but with priority to the latter. A distinction between the two should be clearly made.
- iii) All measures should be designed with a view to evaluation as well as monitoring, thereby helping to demonstrate police effectiveness and raise the profile of traffic policing.
- iv) Measurement requirements should be laid down centrally within a police service, but local commands should have their own action plans and be responsible for recording measures.
- v) More emphasis should be given to outcomes and their measurement, which needs to be strengthened in various ways, including:
 - precise definition of road trauma;
 - consistent definition of road trauma, to allow comparisons;
 - more use of community perceptions as measures of outcome;
 - more use of measures of road user behaviour as outcomes; and
 - public surveys and observational studies as outcome measures.
- vi) Particularly in relation to output measures, consider sources of data distortion and ways to minimise and avoid this, including:
 - keeping data recording demands manageable;
 - minimise paperwork and maximise automation of recording; and
 - explain reasons for data needs to front line staff.
- vii) Remember that for most measures statistical reliability demands large numbers. Trends in crashes rather than fatalities can be charted more accurately for this reason.
- viii) For different reasons, benchmarking can arouse both staff and public criticism, but can be a valuable management tool. Benchmarks must be seen to be realistic, achievable, non-discriminatory, and to not require excessive amounts of paperwork.
- ix) Operational performance review provides a valuable system of ongoing performance measurement, and the benchmarking of measures can be incorporated here. Key performance indicators can receive an especially strong commitment and be more exposed to public view.

- x) If police services are to achieve a united approach to traffic policing then more standardisation of performance indicators is needed, in both their selection and definition. Priority should go to agreeing:
- the ratio (deaths per 100 million vehicle kilometres travelled?) and the wording to be used in defining a headline measure of road trauma;
 - a standard set of comparable performance indicators, recorded and analysed in the same way in each jurisdiction (this need not preclude other service-specific or local measures);
 - a measurement model which distinguishes between outputs and outcomes;
 - procedures for analysing and exploring causal relationships between measures; and
 - strategies for integrating police measures with those of other agencies.

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