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PAPUA NEW GUINEA ROAD SAFETY REVIEW

Discussion Paper

April 2011

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Glossary

ADB	Asian Development Bank
AusAID	Australian Agency for International Development
DfID	Department for International Development (UK Government)
DoT	Department of Transport
DoW	Department of Works
DSP	Development Strategic Plan 2010 - 2030
GoPNG	Government of Papua New Guinea
GRSP	Global Road Safety Partnership
LTB	Land Transport Board
LTD	Land Transport Division of the Department of Transport
MAAP	Microcomputer Accident Analysis Package
MTDP	Medium Term Development Plan 2011 - 2015
MVIL	Motor Vehicle Insurance Limited
NCDC	National Capital District Commission
NRA	National Roads Authority
NRSC	National Road Safety Council
PNG	Papua New Guinea
RCA	Road Controlling Authority
RSTM	Road Safety and Traffic Management branch of the LTD
TIN	Traffic Infringement Notice
TRL	Transport Research Laboratory
TSCMIC	Transport Sector Coordinating Monitoring and Implementation Committee
TSSP	AusAID Transport Sector Support Program
WB	World Bank
WHO	World Health Organisation

Executive Summary

To put road safety issues into perspective on a global scale, the World Health Organisation (WHO) forecasts that road traffic deaths will rise to become the fifth leading cause of death by 2030 (ranked as ninth in 2004), ahead of issues such as HIV/AIDS¹. Furthermore, for the Western Pacific Region (which includes PNG), the WHO *Global Burden of Disease – 2004 Update* project indicates that injuries sustained as a result of road traffic accident are the primary cause of death for people between 15 and 44 years of age, and the second main cause of death for children between 5 and 14 years of age in the Region.

Unfortunately, the true scale of the actual road safety problem in Papua New Guinea (PNG) is not currently known. Whilst reported accident data has been collated by the Police for a number of years, until recently, no formal review, analysis and dissemination of the information has occurred. As such, in 2009, the NRSC received funding to set up an accident database utilising the Police data to try and better understand the extent of the problem along with identifying the main causes and locations, with the aim of subsequently reducing the social and economic impact of road accidents on the nation.

Notwithstanding the above, data provided by PNG authorities to the WHO in 2008/9 indicated that 237² people were killed on PNG's roads in 2007. Given the likely high level of under-reporting, WHO statistical modelling suggests that the true number of road deaths is more likely to be between three and five times this number.

In addition to the high loss of life in road accidents, an extensive number of people are disabled and seriously injured each year as a result of motor vehicle crashes – which has a serious impact on all aspects of society within PNG. For example, as a result of death or disability caused by a road crash, not only do victims and their families suffer pain and trauma, but society and the community is also burdened from an economic perspective. It has been estimated that the socio economic cost of road accidents typically amounts to between 1% and 2% of a country's Gross Domestic Product (GDP). Using this range and a GDP of US\$8.1 billion in 2008 for PNG, the current socio economic cost of road accidents in PNG is calculated to equate to between approximately K220 million (US\$81 million) and K440 million (US\$162 million).

It is acknowledged that the Government's recently published Vision 2050 and the PNG Development Strategic Plan 2010-2030 do not specifically highlight road safety as an issue. This, however, is perhaps unsurprising given the lack of quality information made available to politicians and the public over recent years concerning the scale of the problem. Notwithstanding this, targets relating to health (e.g. life expectancy) and standards of living (e.g. economic impacts) are set out in these strategic documents, which in turn are particularly relevant to road safety given the issues identified above. As such, more detail relating to road safety issues, interventions and deliverables is contained in the Medium Term Development Plan 2011-2015. Given the concerns relating to health, society and the economy, improving road safety is therefore a highly relevant activity to meet the Government's intended outcome of a '*smart, fair, wise, healthy and happy nation*' as set out in Vision 2050.

Without any meaningful interventions, the existing road safety problem will worsen given expected future increases in motor vehicle ownership and population. Therefore, in an attempt to address this, it

¹ World Health Organisation. Road Safety in the Western Pacific Region – Call for Action (2008)

² Accident forms completed and returned to Police HQ and analysed by the NRSC as part of the recent project to establish the accident database indicates that 269 people were reported by Police as being killed in a road accident in 2007.

has been necessary to review existing road safety management practices as well as the tools and interventions used in PNG to determine where processes and systems can be enhanced, and to identify the potential opportunities for improvement.

Road safety management roles typically expected of a lead agency such as the NRSC include the coordination of activities, support for the funding of wider initiatives, promotion, legislative reviews, monitoring and evaluation, research and ensuring a focus on results (i.e. the actual reduction in the number of people killed or injured in a car accident) by partner agencies. Awareness of such road safety management requirements is currently limited in PNG, with scope for much improvement. Sustainable local knowledge and skills in this specialised area will only be achieved by 'hands on learning' through appropriate technical assistance over a period of time.

A key aspect of the review of road safety management is the current lack of coordination between those agencies that have an interest and responsibility for addressing road safety. Engineering, enforcement and education/awareness initiatives need to complement each other in order to achieve maximum effect. Whilst hindered by the lack of a Board at the NRSC to help promote and facilitate cooperation and coordination, activities such as road safety awareness campaigns for example have typically been undertaken in isolation without any supporting targeted enforcement. The likely result of this approach is that large amounts of money may have been spent without any long lasting change in road user behaviour. Whilst various attempts at road safety advertising are acknowledged and indeed, are well meaning, the lack of general funding specifically available to tackle road safety means that such resources need to be used more smartly in conjunction with engineering and/or enforcement in order for potential benefits to be fully realised. This has not occurred to date in PNG and much better coordination and commitment from all the agencies involved in road safety is essential for long lasting behavioural change.

Similarly, as with road safety management issues, interventions relating to the planning, design and maintenance of the road network; road user behaviour and enforcement of rules; the entry and exit of vehicles to/from the road network; and post crash recovery and support all have elements that need improving at a system wide level. The actual responsibility for the implementation of the majority of the necessary interventions typically rest with the NRSC's partner organisations such as the Department of Works, the National Roads Authority, the Department of Transport, the Police and the Department of Education. As such, in conjunction with the NRSC, some agencies will need to develop their own specialist safety capabilities and gain the supporting knowledge and skills to undertake such a role.

Whilst strategies and plans aimed at improving road safety can be targeted at the various elements that make up road and/or at the main factors that contribute to accidents, immediate gains and improvements in road safety performance can best be attained by targeting those locations/routes with high numbers of accidents. Longer term initiatives such as road user awareness campaigns and driver training are extremely important and also need to be carried out. However, the benefits of simply carrying out such activities will not be immediate given the length of time it takes to change behaviours. As such, engineering and enforcement initiatives at specific locations or along particular routes, complemented by advertising/promotion can have a more immediate impact. Indeed, engineering improvements are often cheaper, simpler and more sustainable in reducing crashes than driver training or using education, legislation and enforcement to alter road user behaviour. This of course does not discount the need for mitigating measures outside of engineering and as noted earlier, many interventions work best when all three aspects of enforcement, education and engineering are brought together and applied at the same time.

With respect to enforcement, the WHO *World Report on Road Traffic Injury Prevention* notes that:

- *"It is critical that the deterrent be meaningful for the traffic law enforcement to be successful;*
- *Enforcement levels need to be high and maintained over a period of time so as to ensure that the perceived risk of being caught remains high;*
- *Once offenders are caught, their penalties should be dealt with swiftly and efficiently.*
- *Using selective enforcement strategies to target particular risk behaviours and choosing specific locations both improve the effectiveness of enforcement...*
- *Publicity supporting enforcement measures increases their effectiveness; used on its own, publicity has a negligible effect on road user behaviour."*

The targeting of risky behaviours is particularly relevant given that preliminary results from the accident database for 2007, coupled with information from other sources, would suggest that PNG needs to give priority to addressing problems associated with drink driving and inappropriate/excessive speeding. In addition, from a road user perspective there is a strong need to improve the safety of pedestrians and passengers in vehicles operated by professional drivers (e.g. Public Motor Vehicles - PMVs).

In total, 71 recommendations, broken down by priority (high, medium and low) and the responsible implementing agency have been identified for consideration in order to improve road safety in PNG. In addition to obtaining funding and having the necessary local skills to carry out such recommendations, in order to bring about the improvements that the NRSC believe are necessary and possible, it is vital that all stakeholders buy-in and contribute to the solutions with an agreed national direction established through a road safety strategy/plan. This will require commitment by our partner agencies to include road safety within their organisation's actions and activities as well as through cross-sector coordination to ensure the outcome of combined agency actions exceed their individual inputs.

No	Recommendation	Responsible Implementing Agency	Priority Low/Med/High
1	<i>DoW and NRA to consider including safety as a monitoring criteria for their roads with respect to 'good' condition rather than simply surface condition/operating speed – see Section 4.8.2 with respect to the international Road Assessment Program (iRAP).</i>	DoW/NRA	M
2	<i>There is a need to carry out extensive training with Traffic Officers of the Police Force to explain the Accident Report Form questions, as well as to clarify its purpose and the importance of completing the Forms and returning them to Police HQ.</i>	Police/NRSC	H
3	<i>In due course, there is a need to review and possibly further refine the Police Road Accident Report Form with respect to the questions that are asked, including making the Form into A4 size and/or allowing for carbon copies to be made so that the NRSC, as part of its task of updating the accident database, can more easily obtain a copy.</i>	Police/NRSC	M
4	<i>An MOU between the Police, NRSC and Dept of Statistics is required defining a road accident fatality. Whilst this would ideally be over a 30 day period, practicalities may prevent this from happening and consensus on the matter should be reached.</i>	Police/NRSC	M
5	<i>An MOU between the Police and NRSC detailing agreed actions and responsibilities for the sharing of information is required, including an agreement with respect allowing direct accident data entry into MAAP rather than the current double-handling approach e.g. either placing computers in Police HQ or using carbon copy police report forms as part of any re-vamp of the accident report forms.</i>	Police/NRSC	M
6	<i>NRSC (possibly in conjunction with National Research Institute for example), to undertake a study to determine the social costs of accidents by severity. In the absence of available funding, finance to be sought through the 2012 Development Budget process.</i>	NRSC	H
7	<i>Develop a national road safety strategy in conjunction with stakeholders and partners to help guide future long term road safety activity and establish an action plan and committed funding to deliver the plan with appropriate monitoring tools used to measure its effectiveness.</i>	NRSC/DoT	H
8	<i>TSCMIC to endorse its support of appropriate donor provided technical assistance for capacity building in road safety to ensure a sustainable level of local knowledge and capability.</i>	TSCMIC	H
9	<i>Review and clarify the roles and responsibilities of the LTD to ensure duplication with NRSC doesn't occur, <u>or</u> implement the recommendations set out in the Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services report (prepared as input to the National Transport Strategy) with respect to the establishment of a Road Traffic Authority (RTA).</i>	DoT	H

10	<i>Ensure road controlling authorities are legally responsible for monitoring and improving road safety on their network.</i>	DoT/NRSC	H
11	<i>Identify a 'road safety champion' within DoW with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	DoW	H
12	<i>Identify a 'road safety champion' within NRA with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	NRA	H
13	<i>Additional funding and training of dedicated Traffic Police in each of the Provinces is a necessity along with improved specialist training during Police college and the provision of enforcement equipment.</i>	Police	H
14	<i>NRSC to continue chasing up the Department of Education with the aim of preparing appropriate resources for inclusion in the school curriculum for different age ranges. In due course, there will be a need to identify and obtain appropriate sponsorship to help print and distribute the material.</i>	NRSC/Dept of Education	M
15	<i>Re-establish the NRSC Board as quickly as possible (with or without the full complement of members) to ensure some level of high level discussion and coordination can occur.</i>	NRSC	H
16	<i>Review Board representation to ensure only relevant agencies that can directly influence road safety are represented. Non relevant (or interested) agencies should be removed from the Board and the only most pertinent organisations included.</i>	NRSC	H
17	<i>Subject to funding and/or the merging of institutions, establish Provincial Road Safety Committees serviced by provincial offices of the NRSC. Such offices however should carry out the full roles of the NRSC rather than simply focus on vehicle inspections. As part of this, training of staff will be an essential component.</i>	NRSC	M
18	<i>Formalise MOUs between agencies where mutually beneficial activities occur in order to help strengthen and build relationships.</i>	All	M
19	<i>Increase the existing minimum 5% levy on 3rd party insurance to at least 10% (and/or more for those vehicle types at greatest risk) to better fund NRSC activities and functions e.g. awareness campaigns and carrying out those management activities identified previously.</i>	Govt - Treasury	H
20	<i>Consider requiring future major road building/road improvement projects that will have a significant impact on local communities that the road passes through to set aside a small percentage of the total cost for road safety enforcement and/or awareness on the improved section of road, subject to monitoring and evaluation plus auditable records of activities and costs being kept.</i>	DoW/NRA	M
21	<i>NRSC to continue seeking advertising sponsorship for their own campaigns and/or to help agencies /organisations wishing to carry out their own road safety promotion by coordinating activities and ensuring such promotions are</i>	NRSC	H

	<i>targeted at issues identified as local issues in accordance with any future road safety strategy/plan.</i>		
22	<i>Ideally establish a separately funded road safety program, administered and audited by an appropriate government agency that does not have direct control of activities that the funds can be spent on (to provide separation of the funder and service providers). Alternatively, encourage the DoW and Police to seek specific funding for road safety in annual budget applications.</i>	All	H
23	<i>NRSC to support and assist the DoT to carry out their proposed review of the existing Motor Traffic Act and Regulations.</i>	DoT/NRSC	H
24	<i>The review of legislation (including fines and penalties) being carried out by the DoT should consider all issues relating to road safety through the development of Working Party reports.</i>	DoT/NRSC	H
25	<i>Subject to funding, NRSC to consider the employment of a lawyer in due course to provide the necessary advice and drive to change legislation in the absence of a strong push from other areas such as DoT.</i>	NRSC	L
26	<i>The Police, through the NRSC Board, and with NRSC Secretariat support to develop enforcement plans targeting various particular behaviour throughout the year, with NRSC to try and raise funding to develop supporting advertising campaigns. Coordinated awareness and enforcement campaigns must be carried out – with those agencies wishing to undertake major road safety promotional activities (e.g. MVIL) encouraged to work through the NRSC Board. As part of the above, a road safety calendar indicating enforcement and supporting advertising initiatives throughout the year should be developed to guide annual activities thereby also giving NRSC time to plan specific advertising campaigns based on good practice.</i>	Police/NRSC	H
27	<i>A future national road safety strategy to be developed incorporating final outcome targets.</i>	NRSC	H
28	<i>A future national road safety strategy to be developed incorporating intermediate outcome targets which will define those targets to be monitored and provide funding for undertaking such survey work. Such monitoring should include vehicle defects through changes to the collation of data as well as consideration by the DoW/NRA to fund an iRAP study of their network to establish the current road safety condition.</i>	NRSC	H
29	<i>Outputs to be monitored to be agreed by way of an MOU between the NRSC Board and the various implementing agencies.</i>	NRSC	H
30	<i>Subject to implementing agencies receiving sufficient funding, consider setting up a demonstration project involving engineering, enforcement and awareness road safety activities for a specific length of road.</i>	NRSC/All	H
31	<i>NRSC to ensure accident data is updated and available on its website as and when data is available, along with hard copies being made printed and sent to relevant agencies/authorities. NRSC to also ensure suitable road safety advice is set out on its website.</i>	NRSC	M
32	<i>Following the passing into law of the Roads (Classification and Standards) Regulations 2010, broad consultation will</i>	NRA	M

	<i>be needed to develop and agree a single set of design standards for use in PNG. It is presumed that NRA will take the lead on this matter given that the Regulations fall under the NRA Act.</i>		
33	<i>Undertake a complete overhaul of the traffic signs and markings in the Motor Traffic Regulations and provide suitable guidance to designers on the use of such traffic control devices – for instance by reference to a single standard such as AS1742, including reference to material specifications.</i>	DoT/NRSC	M
34	<i>Following the set up of the accident database to allow the past 3 - 5 years worth of crash data to be analysed, NRSC to identify the top 25-50 hazardous locations on the road network. Following this, NRSC should approach relevant road controlling authorities with a view to undertaking crash reduction studies (in conjunction with local engineers, the Police and other interested parties) to identify contributory factors and possible solutions for the road controlling authority to implement. It is imperative that a range of people and organisations be involved in the process in order to maximise awareness and increase local capability through hands-on experience, and that the road controlling authorities ensure funds are available to implement identified treatments.</i>	NRSC	H
35	<i>Lessons learnt previously need to be more widely distributed to road controlling authorities and their designers, with road designs/rehabilitation work being subject to road safety audits.</i>	DoT/NRSC	H
36	<i>DoW to develop and implement a policy requiring all road projects (including maintenance and rehabilitation) over a certain amount to be road safety audited.</i>	DoW	H
37	<i>Road Controlling Authorities (RCAs) such as NRA, DoW and NCDC, when employing auditors to ensure local staff from other organisations are involved in the process to gain experience/increase exposure.</i>	RCAs	H
38	<i>Consideration should be given to requiring all road projects with government funding over a certain amount to be road safety audited at appropriate stages of design, taking account of the complexity and cost of the project.</i>	DoT	H
39	<i>Road controlling authorities through their asset maintenance activities broaden their consideration beyond simply reviewing the road surface and take safety into account in future road inspections. This in turn requires assets and their condition to be documented in an asset inventory.</i>	RCAs	H
40	<i>The existing legislation with respect to the setting of speed limits and its enforcement needs to be updated and consolidated with respect to the legal responsibility for setting and denoting speed limits, defining sanctions for those that break the speed limit and equipment specifications for enforcement. Such a review should also consider the maximum default speed limits – for instance the potential to reduce urban speed limits to 50km/h whilst allowing for other higher speed limits to be set along specific urban routes and corridors.</i>	DoT/NRSC	H
41	<i>Re-equip and train the Traffic Police to use speed measuring equipment for enforcement purposes. Equipment should be hand held/vehicle mounted rather than static cameras given the high potential for vandalism/theft of such equipment. Technicians also need to be trained to ensure calibration can occur – potentially through the National</i>	Police	H

	<i>Institute of Standards and Industrial Technology or alternatives such as in Australia.</i>		
42	<i>TSCMIC to consider seeking and endorsing specialist technical advice to the Traffic Police as part of any law and order development and capacity building program.</i>	TSCMIC	H
43	<i>Establish a speeding Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out survey of existing beliefs/public knowledge and carry out speed surveys), develop and implement a speeding program and undertake monitoring.</i>	NRSC	H
44	<i>Revise existing legislation to quantify the extent to which a driver is deemed to be under the influence of alcohol through the use of Breath Alcohol Concentrations with due consideration given to different types of drivers and levels of experience.</i>	DoT/NRSC	H
45	<i>Equip and train the Traffic Police to use breathalysers. As part of this, specialist overseas advice to the Police should be sought or provided downstream as part of the current AusAID Transport Sector Support Program.</i>	Police	H
46	<i>Establish a drink-drive Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out an updated survey of existing beliefs/public knowledge), develop and implement a drink-drive program and undertake monitoring.</i>	NRSC	H
47	<i>Update the Motor Traffic Code and include a section on driving under the influence of alcohol/drugs - see also Recommendation 57.</i>	NRSC/Police	M
48	<i>Include the need for all occupants of all vehicles to wear seatbelts (where fitted) in a review of legislation – not just Class 1 vehicles. Given difficulties with retrofitting the fitting of seatbelts to some vehicles such as PMVs, it may be necessary to stage the implementation with a requirement of all future imported vehicles (including PMVs) to have fitted seatbelts that meet PNG standards.</i>	DoT/NRSC	H
49	<i>Establish a seat belt wearing Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Best Practice Guidelines on Planning and Managing a Seat Belt Program and the implementation of Interventions through enforcement of seatbelt wearing and supporting promotional activities. As part of this, carry out seatbelt wearing surveys to help determine the effectiveness of campaigns and to assist with the refinement of future campaigns.</i>	NRSC	H
50	<i>NRSC to continue to try and work with the Department of Education with the aim of preparing suitable teaching material and aids for a range of ages with an aim of distributing the developed material to schools across PNG – see also Recommendation 14.</i>	NRSC/Dept of Education	M
51	<i>There is a strong need to align community awareness campaigns (regardless of who instigates them) with better enforcement to ensure a coordinated approach. NRSC should take a more proactive role in assisting with this</i>	NRSC	H

	<i>coordination to maximise benefits.</i>		
52	<i>Review the 3 month time limit for learner licenses and consider extending.</i>	DoT	L
53	<i>Consider implementing restrictions on Provisional License holders.</i>	DoT	M
54	<i>Clarify rationale for different license time period lengths and if appropriate, simplify and provide one consistent time period of issue.</i>	DoT	L
55	<i>Ensure drivers seeking learner licenses receive a copy of the Motor Traffic Code as part of their learner fee.</i>	Various	L
56	<i>Develop a system whereby driving instructors can be trained and approved to provide official driver training based on a set curriculum.</i>	DoT/NRSC	L/M
57	<i>NRSC in conjunction with partners to revise and update the Motor Traffic Handbook to incorporate additional information and to be printed in both English and Pidgin. Sponsorship will also need to be sought to support its re-printing and wider distribution.</i>	NRSC/Police	M
58	<i>Prepare a new standardised driver testing procedure including a formal oral test with set questions to be asked covering traffic regulations, vehicle handling, vehicle manoeuvre procedures, hazard perception and the effect of weather and road conditions on vehicle handling.</i>	NRSC/Police	M
59	<i>Require PMV drivers to sit an additional practical driving test given their role moving large numbers of the general public.</i>	DoT/Police	H
60	<i>Develop specialist driver testers with respect to heavy vehicles.</i>	NRSC/Police	M/H
61	<i>Investigate the potential to transfer driver testing to the private sector through the use of approved/authorised testers, including heavy vehicles given the potential for demand to make such an activity financially viable.</i>	DoT	M
62	<i>Traffic Police to undertake visible mobile enforcement of all motor traffic legislation through patrols rather than primarily relying on road blocks aimed primarily at vehicle compliance. Such enforcement should be planned – for instance high levels of enforcement over specific routes/areas targeting particular behaviours at different times of the year.</i>	Police	H
63	<i>Whilst restrictions (and enforcement) on the ability to travel unsecured in the rear tray of a vehicle (e.g. without a roll bar) would greatly improve road safety, such a measure would have huge implications on personal travel. As such, it is suggested that such a move would not be generally supported by the public/politicians at this time but wider education/promotion of the risks associated with such travel behaviour should be carried out to start the awareness process.</i>	DoT/NRSC	H
64	<i>NRSC to work with relevant Government Departments to ensure road safety is considered in future provincial plans as a by- product of other planning initiatives.</i>	NRSC	M
65	<i>Undertake a detailed review of existing motor vehicle standards with reference to good practice and consider setting</i>	DoT	L/M

	<i>minimum importation standards for imported vehicles with the intention of being re-sold. It is noted that this approach requires vehicles to be inspected to ensure they meet the stated standards (either at the country of origin and/or at arrival in PNG) and runs the risk of forcing vehicle prices up, which may have an impact on access given a reduction in the availability of reasonably priced vehicles.</i>		
66	<i>LTD to undertake rigorous audits on AIS and consider rationalising the number of AIS taking account of quality/performance of such stations and the number required in order to service the wider population.</i>	DoT	M
67	<i>Ensure Authorised Inspection Stations are capable of inspecting all vehicles to which they are permitted to do so, including heavy vehicles.</i>	DoT	M
68	<i>Given that there is undoubtedly a need for vehicle inspections, consideration should be given to changing legislation to allow gazetted persons (not just public servants) to carry out vehicle inspections.</i>	DoT/NRSC	H
69	<i>NRSC to support Department of Health in their attempts to improve emergency services including any improvement to the 111 system.</i>	NRSC/DoH	M
70	<i>Include first aid treatment in a revised Motor Traffic Handbook and support attempts by the Red Cross to make first aid training a pre-requirement of obtaining a driving license.</i>	NRSC	M
71	<i>NRSC to try and work in conjunction with the Department of Health to promote healthy lifestyles where cross-sector issues exist such as alcohol abuse – and its impact on drink-driving and/or drunk pedestrians.</i>	NRSC/DoH	M

1. Introduction

1.1 Background

The true scale and extent of the existing road safety problem in Papua New Guinea (PNG) is currently not fully known. However, to put the road safety issue into perspective on a global scale, the World Health Organisation (WHO) forecasts that road traffic deaths will rise to become the fifth leading cause of death by 2030 (ranked as ninth in 2004) ahead of issues such as HIV/AIDS³. Furthermore, for the Western Pacific Region, the WHO *Global Burden of Disease – 2004 Update* project notes that road traffic injuries are the primary cause of death for people between 15 and 44 years of age, and the second main cause of death for children between 5 and 14 years of age in the Region. As such, road crashes can currently be expected to have a significant impact on all parts of society within Papua New Guinea. Without any meaningful interventions, the existing problem will not only continue, but will worsen given expected future increases in motor vehicle ownership and population (and the correlation between increased rates of motorisation and road crash injuries).

As a result of death or disability caused by a road crash, not only do victims and their families suffer pain and trauma, but society and the community is also burdened from an economic perspective. Notwithstanding the immediate expense to cover hospitalisation, medical and funeral costs, the death or injury to someone in a road crash can have a long term major economic impact on an entire family, particularly if the impaired person (or the main care giver) is the main income earner. Furthermore, it is also noted that the hospital treatment of road crash victims has a wider impact given that scarce resources such as beds, medicines and medical staff are spent on injured road users rather than other needy hospitalised patients.

Research⁴ (from other countries similar to PNG) indicates that the poorer elements of society are particularly at risk from road crashes given their predominant use of modes of transport that typically have a high share of road crashes and/or casualties – for instance public motor vehicles (PMVs) and walking. As indicated previously, given that road accidents are the primary cause of death in the Western Pacific for adults aged between 15 and 44 years – the age range that can also be considered to be the most economically active, this is a particular concern for low income families and can significantly contribute to poverty in Papua New Guinea. This in turn is at odds with the Strategic Focus area of Wealth Creation set down in the PNG Vision 2050.

In addition to the above economic impact associated with lost output and medical treatment, other crash costs such as vehicle and property damage along with administration costs (e.g. police investigations and insurance processing) also need to be considered. Notwithstanding the ethical and social issues associated with road deaths and injuries, all of the above elements put a particular strain on the PNG economy that can be ill afforded.

Given the lack of existing data and/or research into the social cost of road accidents in PNG, it is not possible to currently accurately determine the true economic cost to the nation (see Section

³ World Health Organisation statistics 2008. (<http://who.int/whois/whostat/2008/index.html>)

⁴ Asian Development Bank. Mainstreaming Road Safety (2006)

3.4). However, research from elsewhere⁵ suggests that the socio economic cost of road accidents typically amounts to between 1% and 2% of a country's Gross Domestic Product (GDP). Using this range and a reported GDP of US\$8.1 billion (2008), the socio economic cost of road accidents in PNG is calculated to equate to between K220 million (US\$81 million) and K440 million (US\$162 million).

1.2 Purpose

The *World Report on Road Traffic Injury Prevention* prepared by the World Health Organisation in 2004 set out six recommendations relating to strategic initiatives intended to improve road safety:

1. Identify a lead agency in government to guide the national road safety effort.
2. Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention.
3. Prepare a national road safety strategy and plan of action.
4. Allocate financial and human resources to address the problem.
5. Implement specific actions to prevent road traffic crashes, minimise injuries and their consequences and evaluate the impact of these actions.
6. Support the development of national capacity and international cooperation.

In response to the above, the World Bank prepared Guidelines⁶ to address each of the six recommendations through a two-stage process. Stage 1 consists of a country capacity review (recommendation 2) which incorporates an assessment of the road safety lead agency (recommendation 1) and goes on to develop an investment strategy and identifies specific projects to launch the strategy (recommendations 3 and 4). Stage 2 consists of the development and implementation of 'safe system' projects incorporating capacity strengthening objectives (recommendations 5 and 6).

This Discussion Paper effectively addresses Recommendations 1 and 2, and provides guidance with respect to the remaining recommendations for consideration and support by the Transport Sector Coordinating Monitoring and Implementation Committee (TSCMIC) and other relevant agencies involved in road safety.

As such, the objective of this Discussion Paper is to establish the extent to which road safety is currently addressed in PNG with a view to identifying road safety management capacity weaknesses that need strengthening as well as establishing and prioritising the necessary investments in sector wide road safety interventions.

Accordingly, this document sets out the current road safety situation in PNG in terms of:

- the strategic framework behind road safety interventions;
- background crash and casualty numbers, trends and associated facts and issues;

⁵ ADB Road Safety Guidelines for the Asian and Pacific Region.

⁶ World Bank. Implementing the Recommendations of the World Report on Road Traffic Injury Prevention – Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects (2009).

- the road safety management system including roles, responsibilities and accountabilities of the different stakeholders that are involved in road safety in PNG;
- road safety management activities and performance; and
- the extent of actual interventions aimed at addressing road safety issues.

In addition, looking forward, the document identifies and recommends opportunities for improvement in the form of high, medium and low priorities taking account of international best practice, the need for capacity strengthening and a staged approach to the future investment in road safety. As such, throughout the Paper, a number of recommendations have been identified for each of the issues being discussed.

It is recognised and noted that this Discussion Paper has been prepared in parallel to the Department of Transport (DoT) led National Transport Strategy. In the absence of a final Strategy document, where possible, common issues that have been highlighted and raised in the supporting background documents have been incorporated into this Paper.

1.3 General Context

PNG currently has approximately 16,500km of roads broken down by 8,700km of national roads and 7,800km of non-national roads. Of the national roads, the 16 priority routes identified in the National Transport Development Plan 2006-2010 carrying the greatest traffic volumes account for approximately 4,250km⁷, with the remainder being national roads of lesser importance. Non-national roads include the remainder of the road network such as provincial and local trunk roads along with district feeder and local access roads.⁸

It is also noted that in 2004, only 11% of the national road network was classed as being in 'good' condition with 47% classed as 'fair' and 42% classed as being in 'poor' condition. In 2009, this had changed to 31% being in good condition, 43% in fair condition and 26% in poor condition/unsurveyed.

Notwithstanding the above, future plans set out in PNG Vision 2050 and the Development Strategic Plan includes the expansion of the national road network from its current 8,520km to 25,000km by 2030/2050.

As shown in Figure 1.1, WHO⁹ data indicates that PNG has a very low level of motorisation, with the country having approximately 10 vehicles per 1000 people – based on the number of Motor Vehicle Insurance Limited (MVIL) compulsory third party insured vehicles of 59,645 in 2007. Given that it can be expected an additional number of vehicles may be operating without third party insurance, the actual level of motorisation will be slightly higher than that shown. However, even by doubling the number of vehicles reported by MVIL, PNG is still shown as having an extremely low level of motorisation with respect to its population when compared with other countries in the Western Pacific Region and around the world. This level of motorisation is primarily due to the fact

⁷ Source: DoW

⁸ Papua New Guinea Transport Infrastructure Priorities Study (TIPS). November 2006

⁹ World Health Organisation. Road Safety in the Western Pacific Region – Call for Action. 2009.

that the overwhelming majority of the population live in rural areas (approximately 80%) with few trafficable roads and associated motor vehicles, with the majority of traffic associated with the lesser populated (but more high density) main urban areas such as Port Moresby and Lae. It is also noted that many countries in the Western Pacific Region have high numbers of motorised two-wheel vehicles (which often also form a high proportion of their total registered vehicle fleet) compared to PNG - where road users tend to opt to purchase four-wheeled vehicles which are at a higher cost than motorcycles and scooters, and that this has a bearing on their vehicle ownership rates..

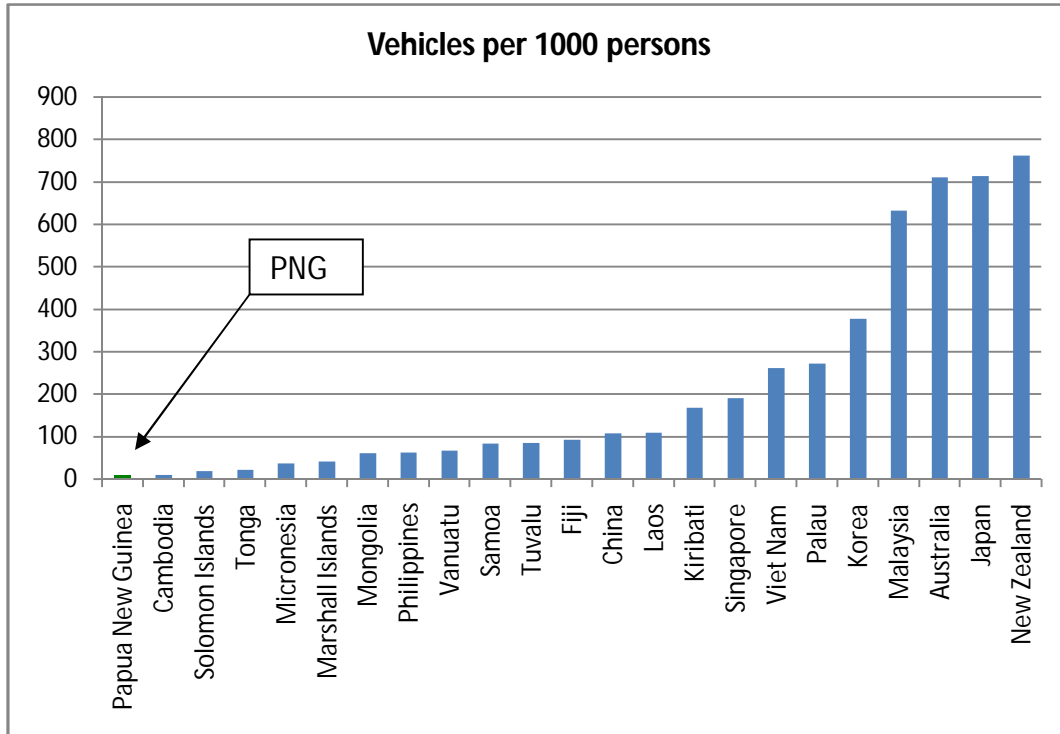


Figure 1.1
Source: WHO. Road Safety in the Western Pacific Region. Call for Action

As indicated in Figure 1.2, such existing levels of motor vehicle ownership indicate that PNG is only at the start of its 'growth curve'. Expected economic growth (and hence disposable income) and urbanisation over the coming years, for instance as a result of the LNG development, is expected to result in an 'explosive growth' in the level of motorisation as demand for transport increases.

It is of interest to note that since the early 1990s¹⁰ up until 2007, the number of vehicles per population has remained fairly constant with vehicles increasing overall by 44% over a 15 year period from 1992 to 2007; and the population reported as increasing by 49% between 1994 and 2007.

¹⁰ ADB Road Safety Guidelines for the Asian and Pacific Region. (Note: As part of this, it is noted that the ADB Guidelines indicate a small downward trend in the number of registered motor vehicles throughout the 1980s and care should be taken when making comparisons with earlier data (of any type) given the amount of conflicting information that exists in various documents and research papers.)

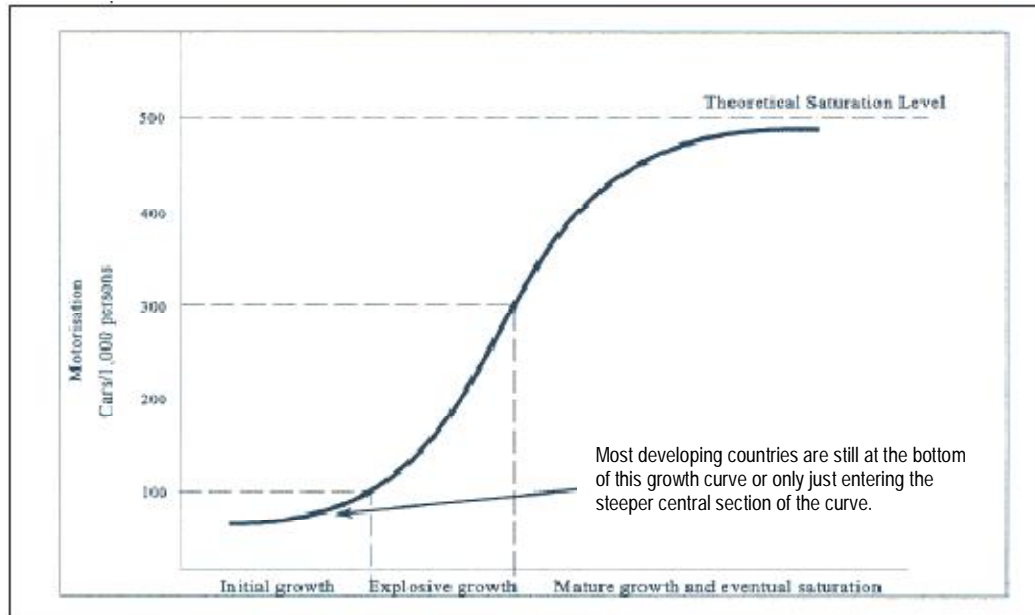


Figure 1.2

Source: Asian Development Bank. Road Safety Guidelines for the Asian and Pacific Region

Notwithstanding the above, PNG Vision 2050 anticipates extensive economic growth along with an expected annual population growth of 2.5% coupled with an expansion of the national road network. Without any policy or operational interventions, the combination of the above can be expected to result in a huge increase in the level of motorisation over the coming decades, with an increased exposure to risk. As such, left unchecked, increased numbers of motor vehicles coupled with the extension of the road network (and the need for its subsequent maintenance to ensure safe and efficient travel) will have a significant impact on road safety.

Information contained in the WHO report also provides a breakdown of the proportion of registered vehicles by type for 2007 (based on MVIL Third Party Insurance data). As clearly shown in Figure 1.3 overleaf, motorcars make up almost two-thirds of the vehicle fleet. At 11%, the proportion of buses (exceeding 20 seats i.e. excluding mini-buses) in the vehicle fleet is the largest in the Western Pacific Region, reflecting the importance of such modes of transport to allow the public to travel around whilst heavy vehicles (which also often act as passenger vehicles in PNG) account for 18% of the vehicle fleet.

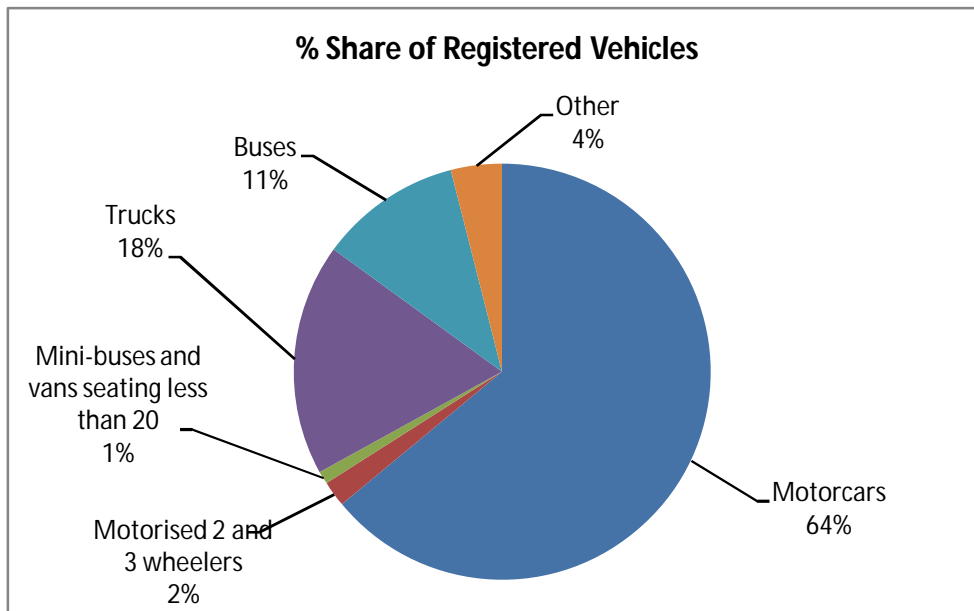


Figure 1.3

Source: WHO. Road Safety in the Western Pacific Region. Call for Action

1.4 Previous Relevant PNG Related Road Safety Studies

Over the last 30 years, a number of road safety studies have been undertaken - either directly relating to PNG or including PNG as part of a wider regional review of performance and activity.

Of particular note, in chronological order are:

- Asian Development Bank (ADB) Technical Assistance Project – Road Safety Study (circa 1985).
- Transport Research Laboratory (TRL) Road Safety Research in Papua New Guinea (1990).
- TRL. The PNG Highlands Highway Study of Design and Accident Rates (circa 1996)¹¹
- TRL. A Roadside and Hospital Survey of Drinking and Driving in Port Moresby, PNG (1996).
- ADB Guidelines for Road Safety in the Asian and Pacific Region (1998).
- World Health Organisation (WHO). Road Safety in the Western Pacific Region – Call for Action (2009).

A summary of relevant data from the above study documents is contained in the various relevant sections of this Paper. It is also recognised and acknowledged that a number of other documents and studies relating to the land transport sector exist, and where appropriate, these have been quoted or referenced throughout this Discussion Paper.

¹¹ Unknown year – summary data obtained from TRL Report PR/INT/242/02: Hills B, Baguley C and Kirk S. Cost and Safety Efficient Design Study of Rural Roads in Developing Countries.(2002)

From the previous bullet point list, it is worth noting that the proposed Action Plan developed in the 1985 ADB study was intended to *"transfer the techniques and skills so that local staff based in PNG can develop and select their own local solutions and countermeasures while drawing on the experience of other countries."* A review of the report findings suggests that with the exception of the creation of the NRSC to help coordinate activities and the recent setting up of the accident database (after the original database was set up and subsequently became inoperative), very little of the identified issues identified in 1985 have been addressed.

It is noted however that this experience is consistent with examples from other developing countries. As set out in the World Bank's report 'Implementing the Recommendations of the World Report on Road Traffic Injury Prevention', past technical assistance to such countries to prepare national road safety action plans which detail interventions often gave little consideration to institutional capacity and funding in order to deliver the plan. It is therefore vital that this Paper considers PNG's current institutional road safety management and technical capacity (and identifies strengthening initiatives) given the need to ensure delivery of any identified interventions.

Regardless of the above, it should be noted that this Discussion Paper represents the first locally prepared broad overview of road safety in PNG. In line with good practice outlined in the aforementioned World Bank report, it has been developed primarily by NRSC staff with advice and mentoring from an AusAID Transport Sector Support Program (TSSP) Technical Adviser rather than by external or in-line consultants. Responsibility for the preparation and delivery of this Review has therefore primarily been with the NRSC.

2. Strategic Framework

2.1 Vision 2050

Whilst no specific mention of road safety is made within the Vision 2050 document, its importance to the country is alluded to in a number of the seven Strategic Focus Areas, in particular Human Capital Development, Gender, Youth and People Empowerment; and Strategic Planning and Control.

Other elements of the Strategic Focus Area such as Wealth Creation have an indirect impact on road safety, as increased wealth can lead to increased rates of motorisation and subsequently a potential increase in road crash injuries given the correlation between the two in many developing countries. Similarly, statements concerning increasing the road network within Institutional Development and Service Delivery may also have an impact on road safety with increased road lengths resulting in greater levels of exposure and hence increased risk of a crash, whilst higher vehicle speeds (as a result of smoother roads without associated design improvements) may also lead to more severe crashes.

Human Capital Development, Gender, Youth and People Empowerment

With respect to human development, Section 1.17.1 sets out a number of statements relating to improving PNGs Human Development Index (which is partially based on life expectancy and standard of living), enhanced access to services and basic infrastructure and an improved life expectancy.

As indicated previously, the 2008 WHO *Global Burden of Disease: 2004 update* study noted that road traffic injuries are the primary cause of death for people between 15 and 44 years of age, and the second main cause of death for children between 5 and 14 years of age in the Western Pacific Region.

Given the above and PNGs reported number of road traffic fatalities (see Section 3), road safety obviously has a major part to play in helping meet the above objectives in terms of life expectancy. Furthermore, given that those people typically involved in road accidents are also usually the most economically active, this can significantly contribute to poverty in PNG – thereby impacting on the standard of living and the Human Development Index.

Strategic Planning and Control

Section 1.17.11 of Vision 2050 notes that development strategies and operational plans of all provinces, districts and local level governments are to be aligned with Vision 2050, along with Sectoral Strategies and state agency's Corporate Plans.

As such, it is clear that improved road safety could be a key element in helping provincial and local government's deliver some of the Vision 2050 objectives, and that provincial/local government's plans may need to reflect this. Given that there is no explicit link between road safety and Vision 2050, it is likely that the NRSC will need to promote this issue at appropriate government levels (see Section 4.4).

People with Disabilities

Vision 2050 notes that 10-15% of the national population is estimated to have some kind of disability. The document specifically notes the need to include such people within mainstream social and economic life, and recognises such people as having the same rights as all other citizens. In order to address the rights and needs of such people, the document notes the need to develop strong partnerships.

Whilst accidents resulting in road users being seriously injured is only one way that people may become disabled, government investment and support of road safety is one way in which the number of people becoming disabled in such a way may be reduced (which may therefore have beneficial impacts on increasing the standard of life element of the Human Development Index).

2.2 Development Strategic Plan (DSP) 2010-2030

Similar to the PNG Vision 2050, no specific mention of road safety is made within the DSP, with the emphasis within the road transport section focussed primarily on road building and maintenance. Whilst the DSP aims to achieve 25,000km of national roads in 'good' condition by 2030, unfortunately, the DSP does not provide a definition of 'good' condition.

The NRSC is aware that the Department of Works definition of road condition is based on ride quality and smoothness with indicators provided by the DoW's Road Asset Maintenance System (RAMS). As such, a road in 'good' condition (and as might be assumed to be the same as that used in the DSP) is considered to have some surface imperfections and infrequent minor depressions resulting in operating speeds of between 70% and 90% of the design speed.

Unfortunately, this approach to road construction and maintenance does not necessarily automatically include the incorporation of other design elements that make up a road, such as the road alignment, delineation, sight distances, shoulders and roadside hazards - which all have a major impact on the safety performance of the road. Indeed, of particular worry is that the current focus on surface condition will encourage higher vehicle speeds, thus potentially resulting in an increase in the number and severity of accidents. As reported elsewhere in this Paper, the sealing of a 15km section of the Highlands Highway some years ago resulted in a fivefold increase in the number of fatal and serious crashes on that section of road. Whilst DoW may well consider road safety when maintaining and rehabilitating sections of road, the current indicators for monitoring and evaluation are heavily focussed on efficiency rather than the development of a 'safe and efficient' road network. Given the above, there is clearly a need to ensure roads are fit for purpose from a road safety perspective and to monitor and evaluate this in the same way that road condition is reviewed in RAMS.

Recommendation:

1. DoW and NRA to consider including safety as a monitoring criteria for their roads with respect to 'good' condition rather than simply surface condition/operating speed – see Section 4.8.2 with respect to the international Road Assessment Program (iRAP).

Notwithstanding the above, life expectancy targets do exist in the DSP and road safety improvements can assist with this, particularly given that the goal of the DSP is a 'high quality of life

for all Papua New Guineans'. People not dying or being injured whilst travelling is a major factor in this goal, even if it is not explicitly mentioned as such. Similarly, preventative health strategies, which are specifically mentioned within the DSP, should also take account of the impact that treating fatal and injury crashes that occur whilst travelling along the road have on PNG health services and how preventing accidents can free up hospital beds and medicines for other ill people.

2.3 Medium Term Development Plan (MTDP) 2011-2015

Whilst the NRSC is not directly referenced in the MTDP, specific road safety deliverables are identified with respect to road safety awareness initiatives, enforcement and road safety audits. Whilst funding for such work is simply incorporated into the general road transport sector budget allocation (noted as being under the responsibility of the Department of Works), the need to "conduct road safety education, road safety promotion" and "random vehicle inspections" throughout 2011 to 2015 is clearly set down as part of the MTDP sector strategy to "develop road safety initiatives" and "enforce road safety and awareness".

Longer term initiatives indicated in the MTDP to match the DSP timeframe of 2030 include a focus on road safety enforcement, driver education and road safety auditing. In addition, within the Tourism sector, the MTDP also notes the longer term (2021-2025) need to "enforce roadworthy regulations for tour operator vehicles and taxis."

2.4 National Transport Strategy (NTS)

The NTS is currently in the process of being developed by the Department of Transport following various rounds of consultation throughout 2010. Whilst no finalised document is available for reference as part of this Discussion Paper, comments made in a number of Issues Reports that have been prepared as part of the overall process have been identified and reviewed. As such, as far as possible, this Discussion Paper has sought to be consistent with the preliminary views set out as part of the initial Issues Reports such as the *Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services* report which provides comment on organisational arrangements relating to road safety and the NRSC as well as activities undertaken.

2.5 Transport Sector Policy Statement 2009

During his policy statement in March 2009, the Minister for Works and Transport¹² noted that:

"Transport safety and security is a major National Government priority. The National Government is fully committed to ensuring that safety standards and regulations are carefully developed and enforced. Renewed attention will be given to reducing the frequency and severity of accidents particularly on roads ..."

The above clearly reinforces the importance of improving road safety by the Government and their intention to try and reduce road accidents.

¹² Allan Kinnaird. Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services. ADB TA 7214 (PNG) Report to Government of PNG Department of Transport. Final Report. 2010.

3. Existing Road Safety Data

3.1 Accident Data

3.1.1 Reporting Road Accidents

Section 24 of the Motor Traffic Act states that *'where injury or damage is caused to a person or to an animal or vehicle in the charge of a person because of an accident in which a motor vehicle is concerned'*, the driver must report the accident to the officer in charge of the nearest police station as soon as practicable and within a maximum of 24 hours if a member of the Police is not called out to the scene of the accident to carry out an investigation. A fee not exceeding K500 can be imposed for failing to report an accident. It should be noted that preliminary data for 2007 indicates that the Police actually only attended 41% of the reported crashes (rising to 59% of reported fatal crashes).

Accordingly, in theory, every motor traffic accident in PNG should be reported to the Police. Unfortunately, for a number of reasons, actual crash numbers can be expected to be under-reported, with the ADB Guidelines acknowledging that the *'under-reporting of road accidents is particularly serious problem in many developing countries'*. The full extent of under reporting in PNG is not yet known. However, modelling work carried out as part of the WHO Road Safety in the Western Pacific Region: Call for Action has estimated that the actual number of road traffic deaths in PNG could be around 900 compared to the 237 reported fatalities in 2007 which was provided to the WHO study team¹³. Whilst this figure seems excessively high, there is no doubt that the actual number of road deaths well exceeds the numbers reported by the Police. Police HQ for instance has not received any Accident Report Forms from Milne Bay Province since 2005 and as such, motor traffic accident deaths and injuries have not been included in any official statistics – despite crashes being known to have occurred.

3.1.2 Road Accident Report Forms

For those accidents that are reported or attended to, the Police are responsible for completing a Road Accident Report Form (see Appendix A). As indicated on the form, full details of the accident in terms of the time/date, location, environmental conditions, vehicle and driver details, manoeuvres and actions along with casualty details are required to be completed, typically in the form of multiple choice answers. Furthermore, witness statements, a written description of the accident and a site plan/sketch of the accident are required. These latter elements are particularly useful to road safety engineers when undertaking crash reduction studies, whilst the multiple choice questions help with identifying broader road safety issues amongst other things.

The current Police Road Accident Report Form was modified in 1986 as part of Department of Transport/ADB funded study. As such, it contains most aspects expected of a reporting form, although some elements such as the speed limit and whether a seat belt/restraint was worn are not included, whilst there is also a need for improved vehicle type distinctions and road surface descriptions. The design is such to allow relatively simple entry into the accident database given that it was developed with the use of an accident database in mind. Furthermore, the current Road

¹³ The accuracy of the submitted PNG data reported in the WHO study is questionable – see Section 3.2

Accident Report Form size is slightly larger than A4 size, making copying of the Form, for instance for prosecuting purposes, difficult and cumbersome.

Additional information is also collected in the NCD for accidents involving pedestrians - with a separate form filled out for each injured pedestrian (see Appendix A)¹⁴.

Discussions with the Police have indicated that Police recruits and/or traffic officers receive little formal training in traffic related issues, and that this extends to the filling out of the Accident Report Forms. For instance, an initial review of the accident descriptions on completed Accident Report Forms have indicated some inconsistencies with the ticked/circled multi-choice sections on the front page of the Form whilst full details/locations of crashes are also often not provided. In addition, the low number of accidents where a Police Officer has actually attended the crash site also makes accurate data collection difficult. Furthermore, it can be expected that the majority of the Traffic Police Officers that fill in the Forms are unaware of how the information is to be used i.e. not just for the prosecution of errant drivers but also to assist road safety professionals better understand accident problems both generally and at specific locations in order that mitigating treatments can be implemented to stop accidents from occurring. This has an impact on the quality of the data being collected and how the data can be subsequently analysed and meaningfully used.

Recommendation:

2. *There is a need to carry out extensive training with Traffic Officers of the Police Force to explain the Accident Report Form questions, as well as to clarify its purpose and the importance of completing the Forms and returning them to Police HQ.*
3. *In due course, there is a need to review and possibly further refine the Police Road Accident Report Form with respect to the questions that are asked, including making the Form into A4 size and/or allowing for carbon copies to be made so that the NRSC, as part of its task of updating the accident database, can more easily obtain a copy.*

Upon their completion, Road Accident Report Forms are sent to the Police Head Quarters in Port Moresby for collation. It is noted on occasions however that not all Accident Report Forms are sent through to the Police HQ, or are sent well after the event.

As part of the process of filling in the Accident Form, the Police classify road accidents by the severity of injuries suffered by road users in the accident using the following levels:

- Fatal.
- Injured and hospitalised (Serious injury).
- Injured but not hospitalised (Minor injury).
- Damage only to vehicles/property.

Accident severity is classed by the most severe injury sustained in the incident i.e. an accident involving a hospitalised person and two injured but not hospitalised people should be classed as a

¹⁴ This additional pedestrian data was not originally incorporated into the accident database system. However, following changes to the system, opportunity now exists to collate more detailed pedestrian information and as such, the information will be added to the database for those crashes already in the system.

'hospitalised' accident for official statistics – although in some instances due to errors in the completion of the Accident Form, the information provided doesn't follow this convention.

At present, no formal definition exists with respect to a 'fatal accident' in terms of the time period over which a person is assumed to have died as a result of suffering an injury in a road crash. Typically, deaths within 24 hours of the crash are reported as such. Deaths beyond this period can be included within Police records subject to appropriate paperwork; however, it is suspected that such updates to records are rarely carried out.

The European Union, as in Australia and New Zealand and many other countries around the world, have standardised a fatal accident as one where someone dies as a result of receiving injuries in a car crash within 30 days of the accident occurring. This approach obviously requires the police to follow up on road crash victims in hospital for a period of time after the crash occurred. Such an activity at this moment in time may prove to be problematical for the Police, for instance due to staffing or logistical problems, although some consideration should be given to this issue to allow like-for-like comparisons with other countries to be undertaken with respect to road fatality rates.

Recommendation:

4. An MOU between the Police, NRSC and Dept of Statistics is required defining a road accident fatality. Whilst this would ideally be over a 30 day period, practicalities may prevent this from happening and consensus on the matter should be reached.

3.1.3 Accident Database

The NRSC is currently in the process of establishing a national accident database (using the MAAP system procured from the UK's *Transport Research Laboratory - TRL*) following funding from the Government's Development Budget in 2009 and 2010. This work aims to update the previous DoT maintained database that was destroyed in a fire, up the present day and into the future. Fortunately, as part of their previous work with the accident database, TRL had maintained a copy of previously entered crash data between 1987 and 1994. This existing information now forms the basis of the current database with current work seeking to enter reported fatal casualty crashes from 1995 to 2004, and all reported crashes (fatal, serious, minor and damage only) from 2005 onwards.

Whilst the Police have traditionally kept a general overall tally of crash and casualty numbers by severity and Province, computer problems at Police HQ has resulted in much of the electronic historical data being lost. Furthermore, the Police collated data does not include all the factors collected in the Accident Report Form.

Unfortunately, the present data entry process requires 'double-handling' of accident data in that NRSC technician's are required to hand copy data on the Accident Report Forms at Police HQ prior to entering the information into MAAP at the NRSC offices. Whilst improvements to this system have been identified and are currently being implemented in order to improve timeliness and accuracy, ideally, the data would be entered into MAAP directly from the Police Accident Report Form. As such, further liaison between the Police and NRSC is required in order to address this issue.

Recommendation:

5. An MOU between the Police and NRSC detailing agreed actions and responsibilities for the sharing of information is required, including an agreement with respect allowing direct accident data entry into MAAP rather than the current double-handling approach e.g. either placing computers in Police HQ or using carbon copy police report forms as part of any re-vamp of the accident report forms.

Once up to date, this database will provide a complete record of reported/Police HQ collated accident and casualty numbers by severity as well as allowing an analysis of contributory factors and hazardous locations. As such, general accident trends will be able to be monitored whilst national, provincial and local issues will be able to be identified to allow targeted road safety campaigns to be undertaken. Furthermore, details of crash locations will also allow accident investigations of hazardous locations (black spots), routes and areas to be undertaken and appropriate remedial treatments to be recommended for implementation.

3.2 Casualty and Crash Numbers

Historical casualty data set out in the Asian Development Bank (ADB) Guidelines¹⁵ indicate that during the 1980's and early 1990's, between 250 and 350 people died in road crashes each year in PNG. Subsequent data contained in a World Health Organisation (WHO) Report¹⁶ for the 1990's suggest road fatalities varied between 140 and 200 deaths per year. In addition, the WHO document also contains more recent data for PNG (based on information supplied through PNG sources), reporting 237 road crash fatalities and 1,210 casualties in 2007. Unfortunately, the recent work setting up the accident database has identified that the data contained in the WHO study is typically incorrect, particularly with respect to fatality information for the 1990's as well as the 2007 data (269 reported deaths and 2444 reported casualties).

Furthermore, as indicated in Section 3.1, under-reporting of accidents can be expected to occur. For example, data set out in a 2006 ADB Technical Note: *Mainstreaming Road Safety* indicated the following statistics for Papua New Guinea in 2003:

Reported Road Casualties:	Killed - 290	Estimated:	Killed - 496
	Injured - 2,533		Injured - 31,296

Notwithstanding the concerns relating to the accuracy of the PNG supplied WHO data, in the absence of detailed trend data at the time of writing this Discussion Paper (as the accident data has not yet been fully entered into the accident database), it has been necessary to utilise the data contained in the WHO document to allow comparisons with other Western Pacific countries to be made. Using this data, Figures 3.1 to 3.4 have been prepared to put PNG's safety performance into perspective. These figures have been developed for both the reported and estimated¹⁷ fatality risk

¹⁵ Asian Development Bank. Guidelines for Road Safety in Asian and Pacific Region.

¹⁶ World Health Organisation. Road Safety in the Western Pacific Region – Call for Action. 2009

¹⁷ The WHO report assumes a level of under-reporting occurs and as such, has used a statistical model based on a number of variables to establish the number of 'estimated' road deaths for a number of countries including PNG, as opposed to the actual number of 'reported' road deaths. The estimated number of deaths used relates to a calculated point estimate within the 90% confidence interval.

(deaths per 100,000 population) and fatality rate (deaths per 10,000 vehicles – based on insured vehicle data supplied by MVIL).

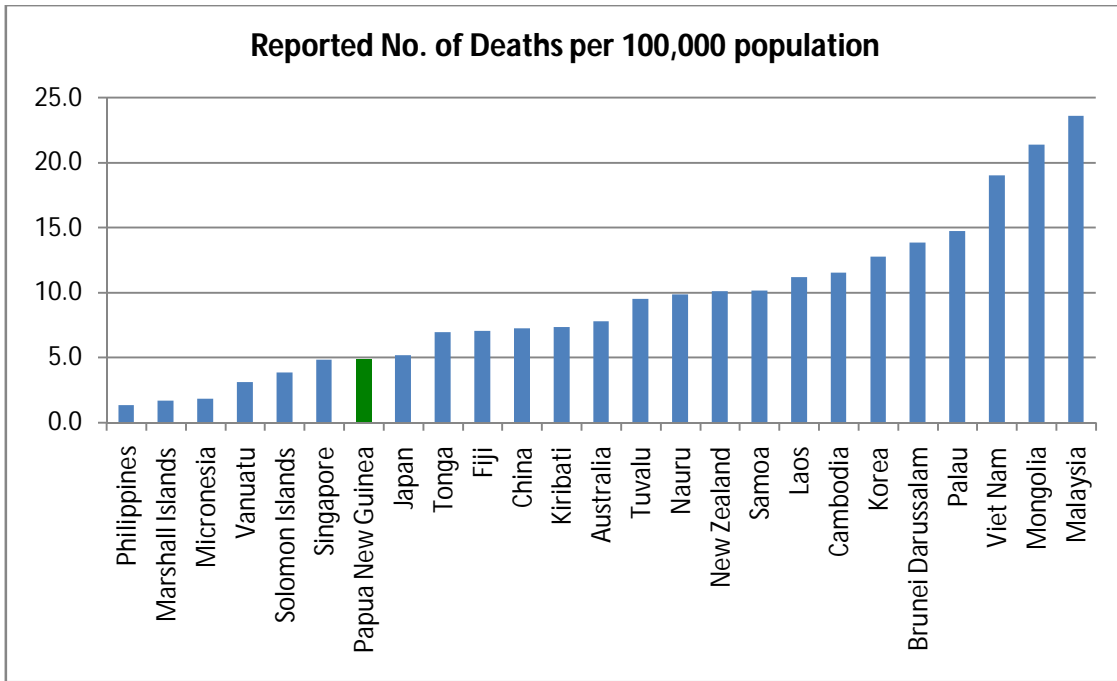


Figure 3.1 Reported Number of Deaths per 100,000 population
Source: WHO. Road Safety in the Western Pacific Region. Call for Action

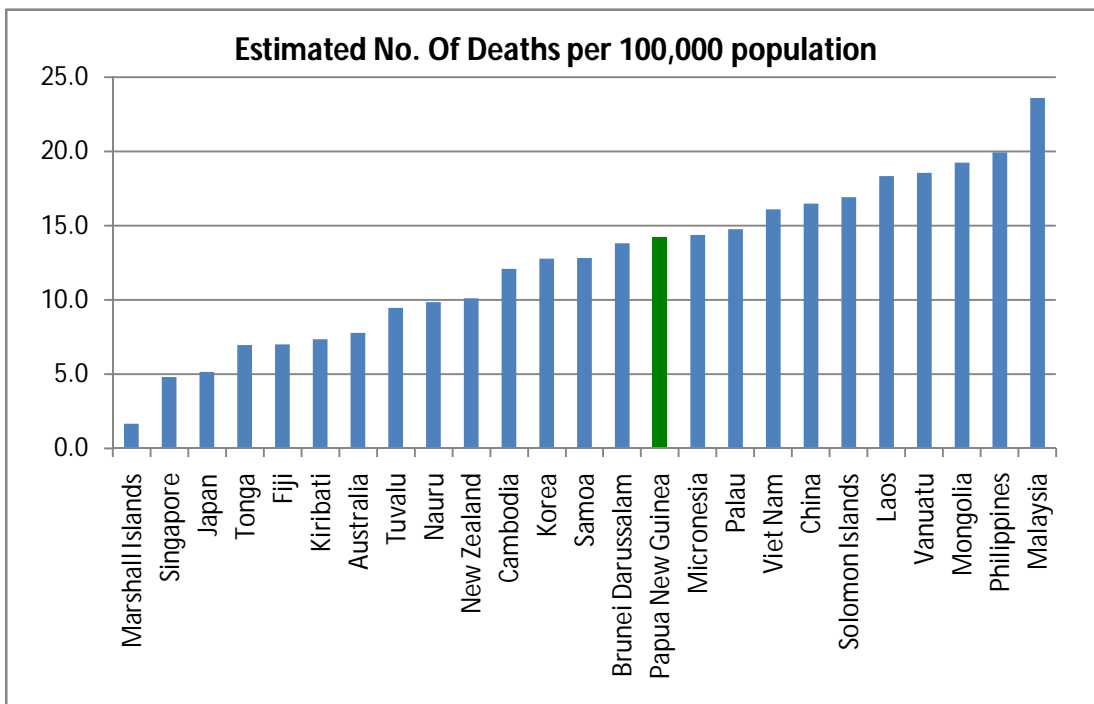


Figure 3.2 Estimated Number of Deaths per 100,000 population
Source: WHO. Road Safety in the Western Pacific Region. Call for Action

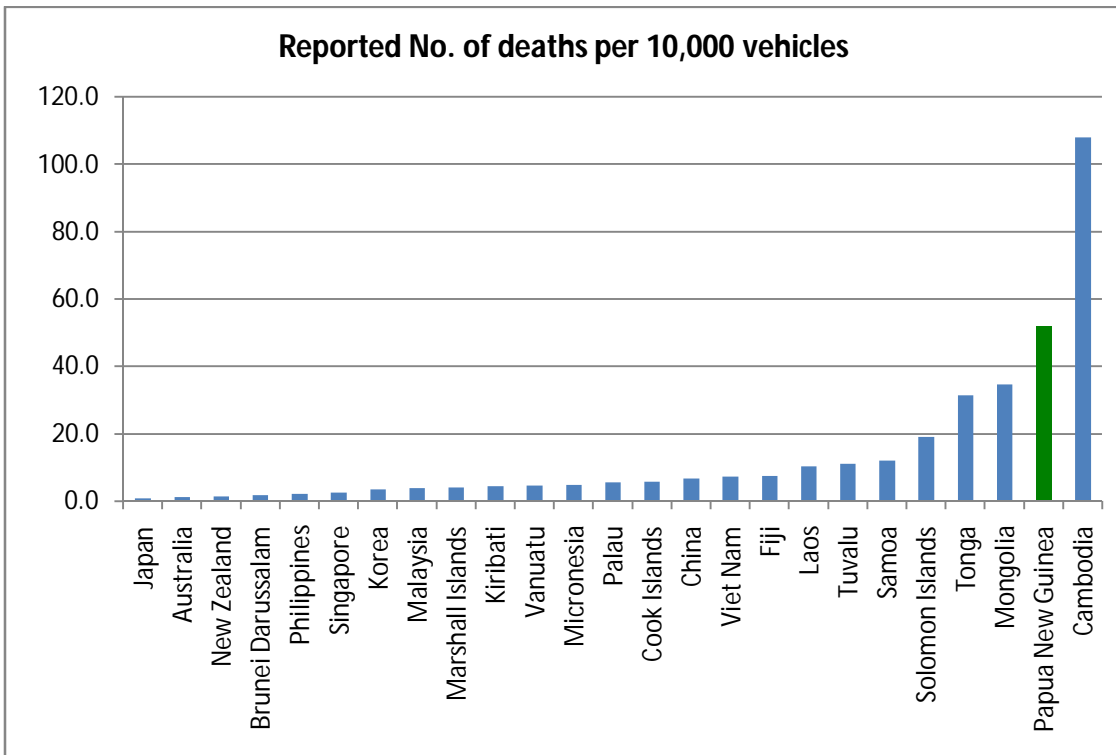


Figure 3.3 Reported Number of Deaths per 10,000 vehicles
Source: WHO. Road Safety in the Western Pacific Region. Call for Action

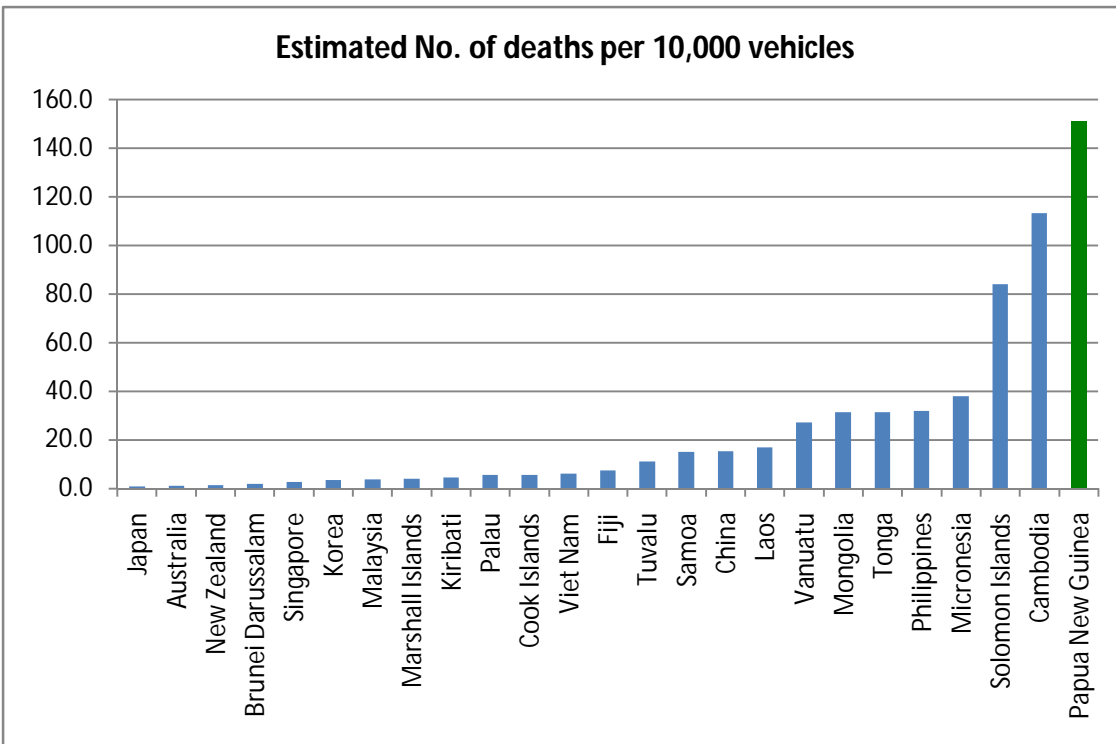


Figure 3.4 Estimated Number of Deaths per 10,000 vehicles
Source: WHO. Road Safety in the Western Pacific Region. Call for Action

As the Figures indicate, in terms of deaths per 100,000 people, PNG is ranked in the middle of the 'pack' for the West Pacific Region whilst in terms of deaths per 10,000 vehicles, PNG is one of the worst, if not the worst, performing country in the Region. It should be noted that this is primarily due to the fact that a large proportion of the population live in relatively isolated rural areas with limited access to roads and/or vehicles – and are therefore less impacted upon in terms of exposure to motor vehicles.

In comparison with data from the 1990s obtained from the ADB Road Safety Guidelines for the Asian and Pacific Region, the fatality rate and risk of reported crashes has improved given that the number of reported fatalities has remained relatively constant whilst population and vehicle numbers have increased. Without any meaningful road safety interventions, of which very little have occurred over the past 15 years, it seems unlikely that fatalities would remain constant or reduce given the large increase in both population and vehicle numbers. This is more clearly demonstrated in Figure 3.5 which shows the 1987 to 1994 data entered into MAAP previously and the hand count of accidents by severity in 2007 carried out as part of the current data entry work. The reduced number of accidents in 2007 compared to the previous number seems highly suspicious given the lack of any interventions – suggesting an increase in the number unreported crashes during this period rather than any real improvement in road safety performance.

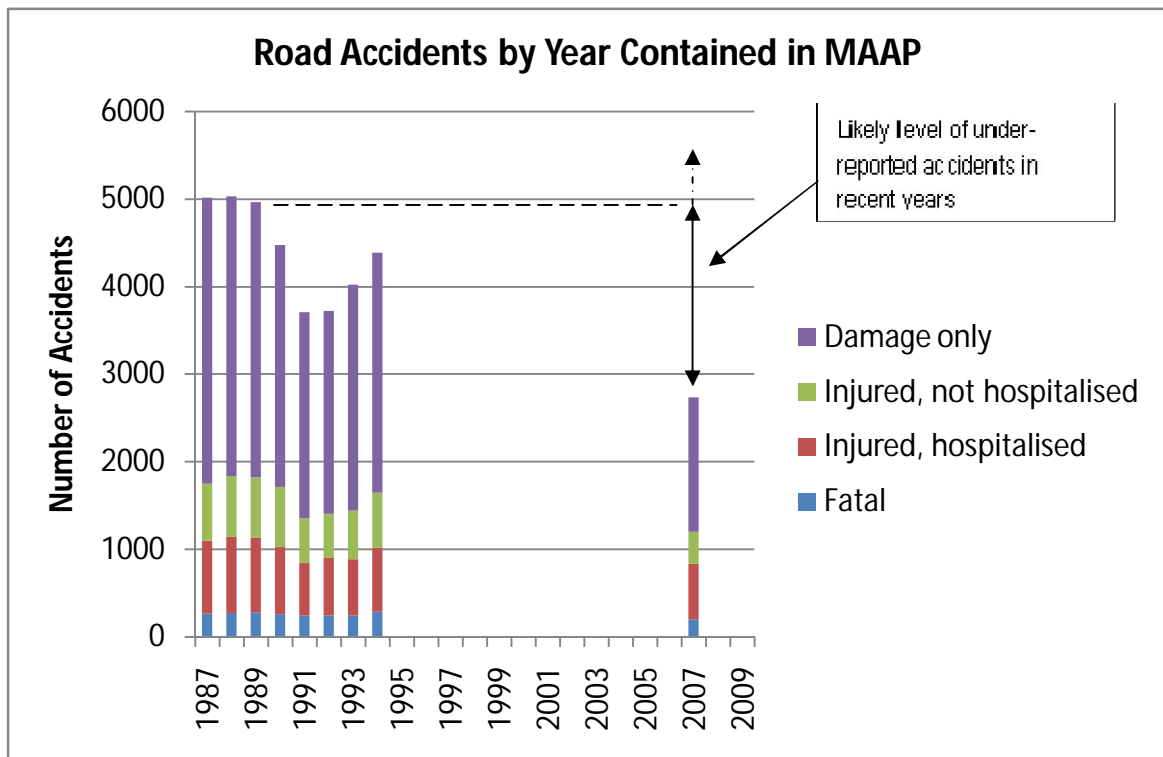


Figure 3.5 Accident Numbers by Severity and Year
Source: MAAP data - NRSC

Preliminary crash (rather than casualty) data obtained and examined to date indicates that the greatest proportion (over 40% in 2007) of all reported crashes (including damage only) occur in NCD. This reduces to approximately 30% for fatal and casualty crashes, with Eastern and Western Highlands Provinces and Morobe each accounting for approximately 10% of such crashes. In

terms of fatal crashes only, whilst NCD still accounts for the highest proportion of crashes, its share is reduced to 17% compared to Morobe (13%), Western Highlands (13%), Eastern Highlands (9%) and Central Province (7%).

3.3 Key Road Safety Issues

As indicated above, until detailed analysis of recent crash records over a number of years can be carried out, the main road safety issues cannot be fully determined on a credible data-led basis. It is highly important to determine the main issues in order to allow focussed national road safety campaigns to be undertaken, rather than simply highlighting every possible cause and hence seeking to address them all. For instance, a recent press article¹⁸ quotes Professor Mathias Sapuri (President of the Medical Society of Papua New Guinea) as noting a study undertaken by medical students indicating the major cause of crashes to be *“alcohol, overloading of passengers on open back vehicles, faulty and un-roadworthy vehicles, unlicensed drivers, careless and irresponsible drivers and driver fatigue as well as the lack of seat belts”*¹⁹. *Many passengers and drivers also die because of the non availability of a medical rescue response team.”*

Whilst the above contributory factors may be correct, not many remaining reasons for why crashes occur exist. Accordingly, despite the need to still highlight all road safety issues, there is a need to correctly identify the main (two, three or four for example) road safety issues through a formal data led approach (using an accident database), and then to focus on investing funding and resources in these areas in order to achieve the biggest road safety gains - rather than spreading funds thinly over a wide range of issues.

Bearing the above in mind, research carried out by TRL in 1990, based on 1987 police reported crash data (using the original MAAP database) noted the following main issues:

- 46% of crashes involved a single vehicle – although these resulted in 75% of all casualties, 80% of all hospitalisations and 86% of all fatalities. Such crashes typically involved colliding with a pedestrian, roll-over crashes and collisions with an object off the road.
- Whilst roll-over crashes represented 12% of all crashes (the most of any type), they resulted in 30% and 29% of all casualties and fatalities respectively.
- 44% of casualties were occupants of pick-up type utility vehicles i.e. utes, typically passengers in the open back of such vehicles.
- NCD had 32% of all crashes and 10% of all fatalities. Comparatively, the Highlands Region had 22% of all crashes but 39% of all fatalities.
- 14% of all crashes were reported as ‘alcohol suspected’ – increasing to 20% at the weekend.

It should be noted that a preliminary review and assessment of the 2007 data suggests that many of the issues identified above still exist.

Furthermore, tying in with the various TRL studies, the WHO report identified previously also indicates that 39% of fatalities were pedestrians whilst 49% involved passengers in a vehicle, for

¹⁸ Sunday Chronicle. ‘Road safety changes needed’ by Glen Scott. Sunday 7 February 2010.

¹⁹ Note – some of the identified ‘causes’ of accidents noted in the quote actually relate to casualty severity rather than the actual cause e.g. the lack of seatbelt wearing or passengers in open back vehicles.

instance Public Motor Vehicles (PMVs) and/or utility vehicles/vans with passengers in the rear tray i.e. without a seatbelt – see Figure 3.5. By way of recent examples, during the 12 month period between May 2009 and April 2010, 78 people died in 3 separate road crashes, each of which involved at least one PMV in the crash.

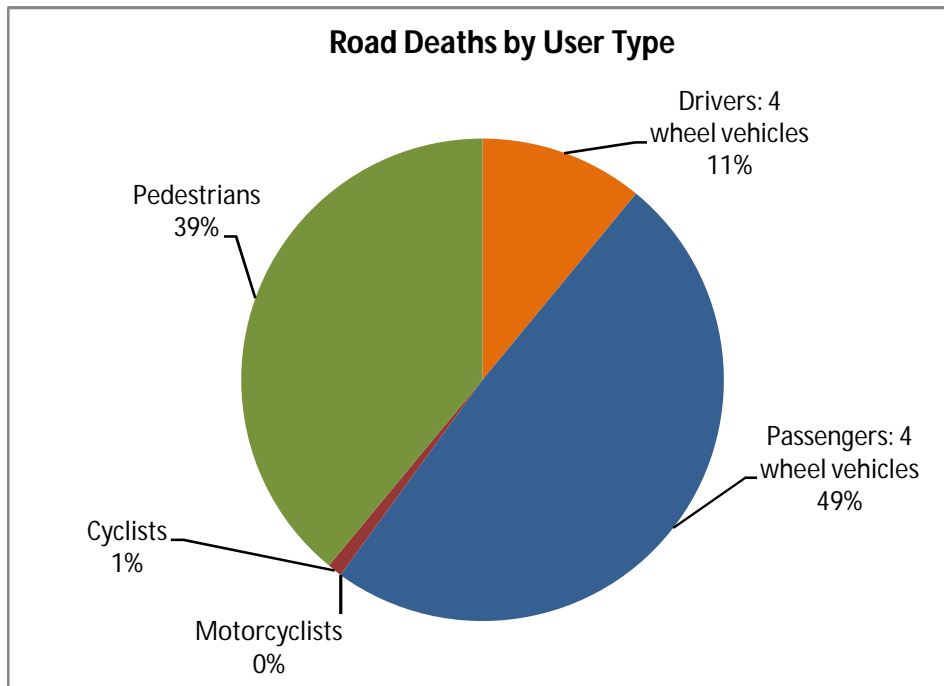


Figure 3.5: Road Deaths by User Type
Source: MVIL via WHO. Road Safety in the Western Pacific Region. Call for Action

It should be noted that given the low level of motorisation in PNG and the vehicle fleet make up, it is perhaps not unexpected that a relatively high proportion of fatalities are pedestrians, with many fatal accidents also involving PMVs and trucks.

A comparison of the deaths by road user types shown in Figure 3.5 and previous Police reported crash data for 1987 to 1994 and for 2007, indicates an extremely similar proportional split. This, along with the earlier comment that many of the issues identified in 1987 are the same as for 2007 suggests that little has changed over the past 20 years in terms of improving road safety in PNG.

Many of the above issues have also been found in a recent study carried out at the Port Moresby General Hospital Emergency Department²⁰ which involved recording the details of road accident casualties occurring in the NCD and on surrounding roads over a seven month period (April to October) in 2009. The study reported receiving 251 fatal and seriously injured (i.e. requiring hospital treatment) casualties as a result of 84 separate accidents (including one fatal crash that resulted in 18 deaths). The study noted that just over half of the crashes involved fare-charging public vehicles (public motor vehicle/trucks and taxis) with 132 of the 182 seriously injured

²⁰ A seven month review of Road Traffic Accidents (RTA) at the Emergency Department of Port Moresby General Hospital, April – October 2009: Abstract. Yockopua, Ugava, Nou, Posanau, Zanggo, Ravu, Saweri and other Emergency Registrars of Port Moresby General Hospital, Emergency Department.

casualties being passengers in a vehicle. With respect to the seriously injured casualties, 10 (71%) of the 14 injured drivers had consumed alcohol to some extent; whilst 13 (36%) of the 36 injured pedestrians had also consumed alcohol. Fifty seven percent of the seriously injured drivers had not worn a seat belt. Over 60% of the crashes involved vehicles described as travelling at high speed by victims or witnesses.

Subject to the more recent data analysis currently being undertaken by the NRSC based on the accident database, it would appear that PNG needs to give priority to improving the safety of pedestrians and passengers in vehicles operated by professional drivers (i.e. primarily PMVs) with speed and drink driving being indicated as major contributory factors. In addition, in due course, the accident data analysis currently being undertaken by the NRSC will help to identify and allow specific sections or corridors of the road network to be targeted for improvement.

3.4 Social Costs

The ADB Guidelines note that 1% to 2% of a country's Gross Domestic Product (GDP) is typically lost each year due to road accidents. As indicated in Section 1, this amounts to between K220 million and K440 million. Whilst this general overall figure helps to financially quantify the extent of the road safety problem in PNG, and hence highlights the issue to politicians, decision makers and the public, it also assists to identify the general amount of funds that should be set aside and invested in road safety during the annual round of funding.

Notwithstanding the above national cost, in order to help justify the investment in individual road safety countermeasures, there is a need to better understand the social costs associated with individual accidents by the degree of severity – i.e. the costs of a fatal, serious and minor injury and damage-only accident. At present, the costs of such accidents are not known in PNG, although such costs can be calculated or determined using a number of methods.

Most developing countries typically use the 'gross output' (often called the 'human capital') approach whereby a number of factors such as medical, vehicle damage and administration costs along with the loss of future earnings are calculated plus a notional amount associated with pain, suffering and grief for the victim (and their dependents, for instance, in the case of a fatality). Alternative methods and systems do exist though – for instance, the Motor Vehicles (Third Party Insurance) Act which sets limits on compensation provides a form of social cost. In this instance, the amount that can be claimed for death or injury is limited to K150,000 per person (where blame can be apportioned) and K5,000 for the death of a man leaving a dependant wife or child and K2,500 for the death of anyone else as part of the Basic Protection Compensation element of the insurance cover where it is not necessary to prove a driver/owner liable for a road death.

As part of the research work associated with preparing this Discussion Paper, accident costs (in 1984 values) were identified from previous ADB work in PNG. It should be noted that the method used to determine the 1984 costs is unknown. These 1984 costs, along with updated 2009 costs (based on factoring up the 1984 using the Consumer Price Index (CPI) for PNG) are shown in Table 3.1. The calculated 2009 values are intended to be indicative and illustrative only given the unknowns relating to how the original values were derived and that CPI values are generally considered to be unreliable in PNG. It should be noted however that the values shown in Table 3.1

compare relatively well to those calculated using the recommended 'rule of thumb'²¹ values for statistical life (70 times the GDP per capita) and serious injuries (25% of the value of statistical life). Using a GDP per capita value of K3,410 (US\$1,294) and the above 'rule of thumb' values, the cost of a road death and a serious injury is calculated to be K238,682 and K59,670 respectively²².

Using the indicative costs shown in Table 3.1, the social cost of accidents to PNG for 2007 accident data is estimated to be K102 million - approximately 0.5% of the GDP based on reported crashes. Given earlier comments concerning the high level of under-reporting, the true cost can be expected to be much higher and represent a much greater proportion of GDP.

Accident Severity	1984 cost (Kina)	Calculated 2009 value (Kina)
Fatal	37,225	218,590
Serious	9,680	56,842
Slight	3,020	17,734
Damage only	1,800	10,570

Table 3.1 Estimated Social Costs of Crashes in PNG based on 1984 CPI adjusted values

By determining such costs, it will be possible to not only better establish the true overall cost of accidents in PNG (rather than using the range provided by the ADB), but to also determine the likely benefit relative to the cost associated with individual improvements to road safety, which in turn will help to prioritise investments in road safety interventions. The ability to establish cost savings associated with proposed improvements and to undertake cost-benefit comparisons between different options and/or projects are standard techniques used throughout the world.

Furthermore, it is noted that the Department of Transport (DoT) and Department of National Planning and Monitoring (DNPM) are planning on requiring much improved cost benefit analysis methods to help justify funding from Development Budget applications for 2012 onwards. Accordingly, the lack of accident costs to undertake such assessments may hinder any future Development Budget applications by the NRSC (and others seeking funding for road safety projects), which in turn, will impact on road safety performance.

Recommendation:

6. NRSC (possibly in conjunction with National Research Institute for example), to undertake a study to determine the social costs of accidents by severity. In the absence of available funding, finance to be sought through the 2012 Development Budget process.

3.5 Attitudes to Road Safety

Research carried out by StollzNow Research on behalf of the MVIL prior to their 2010 'Road Safety is not a Game' campaign indicated²³ the following attitudes:

²¹ McMahon K and Dahdah S. The True Cost of Road Crashes: Valuing Life and the Cost of a Serious Injury.

²² Note: the 'rule of thumb' values relate to an individual casualty whilst the values in Table 3.1 refer to accidents, in that one fatal accident could include two or more fatal casualties. As such, accident costs are usually higher than casualty costs suggesting that the values in Table 3.1 are low.

²³ As reported in the Sunday Chronicle dated 2 May 2010 and 20 June 2010.

- 22% of the general public believe that death or injury on the road is 'part of life'.
- 97% of passengers felt unsafe whilst in a vehicle.
- 91% of pedestrians felt unsafe.
- 92% of drivers believed other drivers travelled too quickly.
- 80% of people believed other drivers drink and drive.
- 74% of people believed drivers race with other vehicles.
- 88% of passengers nominated speeding drivers as making them feel unsafe, compared to 74% who indicated general security issues (such as raskols) as a concern.

In addition to the above, the findings from research on attitudes to drink-driving that was previously carried out in 1987 by the Department of Transport and Department of Health are set out in Section 5.2.

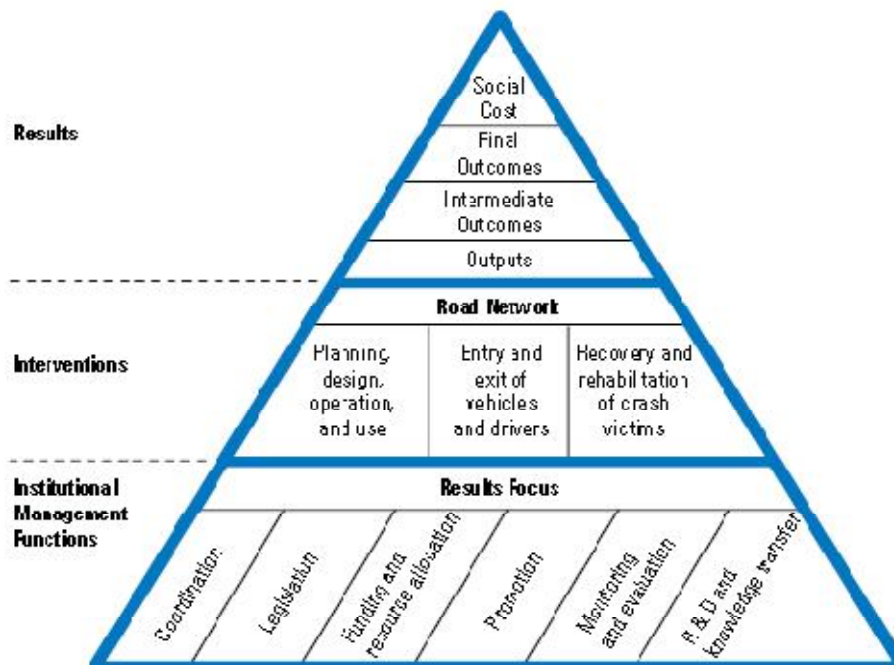
Unfortunately, the NRSC has not, to date, carried out any survey work relating to road user attitudes and behaviours which may assist and direct future road safety campaigns (see Section 4.7).

4. Road Safety Management

4.1 System Model

The delivery of effective road safety initiatives and interventions aimed at achieving desired results is highly dependent upon the management system which operates behind it and drives the overall process.

At present in PNG, the management system is somewhat convoluted resulting in an ineffective approach to road safety. Responsibilities are often not clearly set out (and in some cases duplicated) and agreed upon, with organisations therefore not being held accountable for their actions. As such, a lack of direction coupled with limited capability has typically resulted in ineffective interventions. Furthermore, the actual impact of any intervention is not known. This approach contrasts starkly with the road safety management system set out recently by the World Bank²⁴ (see Figure 4.1) which comprises of three inter-related elements: a focus on results; interventions to achieve the results; and the institutional management functions that help deliver the interventions.



Source: Bliss and Breen, building on the frameworks of Land Transport Safety Authority, 2000; Wegmar, 2001; Koorstra et al, 2002; Bliss, 2004.

Figure 4.1: Road Safety Management System
(Source: *Implementing the Recommendations of the World Report on Road Traffic Injury Prevention*)

²⁴ Bliss T and Breen J. Implementing the Recommendations of the World Report on Road Traffic Injury Prevention – Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects. June 2009. World Bank Global Road Safety Facility.

Results

Unfortunately, to date, no high level national or provincial road safety strategies or plans have been developed setting out the desired result terms of improved road safety performance. (It is noted that the superseded 2006-2010 National Transport Development Plan (NTDP) indicated the need to prepare a road safety strategy by 2007 but this has not happened.) This has meant that other than the public and political outcry associated with one-off high profile or multiple fatality accidents (as occurred in 2009 and 2010 where 78 people died in three separate crashes), no specific focus on road safety performance exists. As such, targets to indicate the level of safety required by government, stakeholders and the public has not been debated or considered, never mind been formally adopted or published.



Figure 4.2 Front page of the Post Courier – Tuesday 17 August 2010

As such, at present there is no vision with respect to where the government wishes to head with respect to road safety (e.g. to maintain the current level or to improve it). Accordingly, no real direction for road safety currently exists. The need to provide a national road safety strategy, along with a funded action plan is necessary in order to allow coordinated activities to be undertaken. Without such an approach in PNG, there is little chance of road safety being substantially improved.

With regards to the above, research from other developing countries seeking to improve road safety has shown that short time frame plans, containing multiple recommendations for a number of the different elements, are typically over ambitious and are not implemented and/or sustained. Improvements therefore need to be taken step-by-step and adequately planned, funded and implemented.

It should be noted that a number of measures can and should be used to monitor road safety performance, both in terms of:

- Outputs – such as treated black spot sites, the number of Traffic Infringement Notices (TINs) issued, number of police enforcement hours, hours of school education received etc;
- Intermediate outcomes – those directly related to outputs, for instance community attitudes to safety/recall and self-assessed relevance of a road safety message as a result of undertaking road safety campaigns; and
- Final outcomes - related to the number of injured and killed people as a result of road accidents. Given the importance of economic issues with PNG as part of the PNG Vision

2050, it may also be worth considering the social cost of accidents in the future (subject to such costs being established) as a performance measure given that this indicator is based on the total economic cost to society as a result of road accidents.

Recommendation:

- 7. Develop a national road safety strategy in conjunction with stakeholders and partners (see Section 4.3) to help guide future long term road safety activity and establish an action plan and committed funding to deliver the plan with appropriate monitoring tools used to measure its effectiveness.*

Interventions

The type, number and quality of interventions to prevent and/or reduce the number and severity of accidents have a direct relationship with the results discussed above. For the purposes of this Discussion Paper, identified interventions tend to follow those categories indicated in the World Bank model. However, for simplicity and greater clarity, they have been split into the following as part of Section 5:

- planning and design of the road network;
- standards and rules governing the operation of the road by various users and their level of compliance;
- standard, rules and compliance associated with vehicles using the road network; and
- recovery/rehabilitation of crash victims sustaining injuries from the system.

Institutional Management Functions

In the World Bank model shown in Figure 4.1, seven Institutional Management Functions act as the platform on which interventions are undertaken in order to achieve the desired results. As such, effective management across these different institutional functions is a necessity in order to achieve the required focus on results.

Typically a lead road safety agency within a country should play a dominant role in most, if not all of the management functions. Where it does not have direct control, it should ideally at least be able to strongly influence those agencies that are responsible for those functions.

Given the above, the World Bank report note that in terms of capacity building, emphasis is needed to be put on the Institutional Management Functions and their relationship to the interventions and desired results - as simply identifying intervention initiatives on their own without the necessary support typically results in ineffective action. As identified in the World Bank report, safety management capacity weaknesses have traditionally been a barrier to progress in many developing countries given that assistance elsewhere in the past has revolved around 'what needs to be done' rather than 'how to do it'.

Comment on the various road safety management functions is contained in Sections 4.4 to 4.9. Specific reference to the lead agency's role and current activities within each of these functions is set down in Section 4.2 whilst Section 4.3 provides comment on the various key partner agencies that the lead agency must work with.

4.2 Lead Agency

In line with some other developing countries, PNG already has an NRSC with a supporting secretariat. Of particular note is that the Secretariat isn't reliant on other Government Agency staff, such as the Department of Transport. Furthermore, the NRSC has various legal functions and a secure sustainable form of funding – although debate exists as to whether its legal powers and funding are sufficient. Indeed, as part of a recent WHO initiative²⁵, a meeting of various road safety stakeholders resulted in the NRSC being identified as the lead road safety agency in PNG. Whilst acknowledging that the Traffic Directorate within the Police had previously been the main agency, the NRSC was nominated for this role on the basis of the NRSC being a “statutory body and *the NRSC (sic) having a good working relationship the Police (sic).*”

Unlike other agencies such as road controlling authorities (e.g. Department of Works - DoW, National Road Authority - NRA, National Capital Districts Commission - NCDC) who have the power to install physical road improvements aimed at addressing road safety concerns, or the Police who have the power to undertake enforcement and deter inappropriate road user behaviour, the NRSCs statutory functions are less direct or immediate in terms of their impact.

Whilst full details of the NRSC's legal functions are set out in Appendix B, they can be summarised as:

- Strategic Organisation and Planning (Coordination)
 - to **determine the goals and objectives** when promoting road safety.
 - to **formulate, monitor and update an appropriate long term national programme** and to supervise its implementation.
 - to **enlist the aid** of all agencies who are able to promote road safety.
 - to **determine measures** that will lead to the improvement of road safety and to **control and co-ordinate** the planning and implementation.
- Technical Advice and Operations (Promotion)
 - to **advise** on road safety.
 - to **recommend** the adoption of precautionary measures.
 - to **foster and promote** road safety research.
 - to **foster, promote and conduct educational campaigns**.
- Monitor and Evaluate (Reporting)
 - to **monitor and evaluate effectiveness** of programs and strategies.

The above three elements of coordination, promotion and reporting have been set down as Strategic Result Areas (SRAs) within the NRSCs draft 2011 – 2015 Corporate Plan. The fact that

²⁵ 2008 Global Status Report on Road Safety in Papua New Guinea – report by Chief Inspector Peri Kanguma and Dr Thomas Vinit. 2008

legislative functions already exist to provide some statutory power to the NRSC can be considered a major positive and step forward in the right direction, as is the fact that other partners regard the NRSC as the natural lead agency for road safety.

Notwithstanding this, as highlighted below in terms of the NRSC's secretariat capability, it is essential that the NRSC receive appropriate support in the form of specialist technical assistance and aid to ensure the "effective and efficient functioning of the road safety management system"²⁶ in terms of the seven institutional management functions identified previously. As such, simply having a defined legal function for the NRSC does not guarantee that appropriate and focussed actions will be carried out.

Recommendation:

8. TSCMIC to endorse its support of appropriate donor provided technical assistance for capacity building in road safety to ensure a sustainable level of local knowledge and capability.

NRSC Board

The NRSC Board is made up 14 representatives from a range of government agencies as well as other stakeholders such as the Chamber of Commerce, the Motor Vehicle Insurance Ltd and University representatives. Full details are contained in Appendix B. Despite several attempts to reconvene the Board and obtain new representatives, the Board has unfortunately not met since approximately 2005. As such, the Executive Director of the NRSC has effectively had to lead the secretariat without the support and direction of a Board. Further comment on the lack of board meetings and appointed representatives is contained in Section 4.4.1.

NRSC Secretariat

In terms of undertaking its duties, the Secretariat consists of approximately 25 staff under the direction of an Executive Director – who in turn, in theory, reports to the NRSC Board. The Council (Board) itself reports directly to the Minister for Works and Transport and needs to seek the minister's approval for its annual work plans. However, in the Board's absence, the Executive Director currently reports directly to the Minister.

Within the Secretariat, the organisation is split into three separate Divisions: Safety Development, Corporate Services and Information Technology - with the Safety Development Division responsible for technical aspects such as the accident database, general road safety engineering advice, road safety education and previously, vehicle inspections. Since February 2010, a Road Safety Adviser has been placed within the NRSC Secretariat through AusAID's Transport Sector Support Program (TSSP) with a remit to undertake capacity building and assist with a range of issues including (but not limited to) strategic and technical advice, and as such, to interact with a wide range of stakeholders to raise local knowledge, capability and skills relating to road safety engineering, enforcement, education and awareness.

²⁶ Bliss T and Breen J. Implementing the Recommendations of the World Report on Road Traffic Injury Prevention – Country Guidelines for the Conduct of Road Safety Management Capacity Reviews and the Specification of Lead Agency Reforms, Investment Strategies and Safe System Projects. June 2009. World Bank Global Road Safety Facility.

NRSC Functions

A comparison between the legislative functions of the NRSC and those institutional management functions shown in Figure 4.1 indicate a general consistency - with the exception of 'funding and resource allocation' which relates to promoting and ensuring secure and sustainable funding for all road safety activities (engineering, enforcement, education) across the Sector – not just for the NRSC. As indicated in Section 4.6, wider consideration of road safety funding in general is required, and this should include exploring the role that the NRSC should have in helping determine the prioritisation for funding road safety initiatives (if a separate road safety fund and program were to exist) as well as how best the NRSC can lobby for specific road safety funding.

Regardless of the general alignment between the NRSC and the good practice management functions, differences do exist in terms of the extent of the activities that are undertaken by the NRSC compared to those expected in the World Bank model. For instance, whilst the NRSCs mandate permits the organisation to take a proactive approach to ensuring appropriate legislation is in place to meet road safety needs, a lack of funding to employ or engage legal professionals has to date prevented the NRSC from taking a leading role for delivering legislative changes. As such, there is an over-reliance on the DoT Legal Services to undertake such work rather than keeping it in-house and working alongside the DoT. Unfortunately, the DoT also has to assist with other transport agency's legal requirements as well as its own, and as such, cannot continuously focus on a single area such as road safety.

Table 4.1 sets out the relationship between the NRSCs defined legal functions based on the Strategic Result Areas (SRAs) in the draft Corporate Plan, its actual activities and the World Bank's guidelines relating to lead agency institutional management functions and roles. Further details relating to these management functions and activities are set out in Sections 4.4 to 4.9 of this Discussion Paper.

As indicated in Table 4.1, the opportunity exists to expand NRSCs current activity to better direct and coordinate road safety initiatives. Indeed, as part of this understanding of the wider potential role of the NRSC, this particular Discussion Paper represents PNGs first detailed appraisal and review of current road safety performance. Looking forward, the opportunity exists to take a leading role in the development of a national road safety strategy/plan incorporating a vision, targets and actions.

SRAs	World Bank defined Management Functions	Actual NRSC Activities	Comments/Notes
Coordination	<ul style="list-style-type: none"> Results focus – to develop a national road safety strategy including targets and interventions; and establish mechanisms for accountability. 	-	<ul style="list-style-type: none"> No overarching road safety strategy or targets developed to date.
	<ul style="list-style-type: none"> Coordination – to provide leadership and ensure the results focus, the NRSC and stakeholders are all aligned. 	<ul style="list-style-type: none"> Limited joint NRSC/Police education and vehicle inspection operations. 	<ul style="list-style-type: none"> NRSC Board not met since 2005 thereby hindering coordination efforts.
Promotion	<ul style="list-style-type: none"> Promotion – to promote the need for a focus on results and the means by which they can be achieved. 	<ul style="list-style-type: none"> Annual school road safety education visits 	<ul style="list-style-type: none"> Minimal long term benefit
		<ul style="list-style-type: none"> Development of road safety school curriculum 	<ul style="list-style-type: none"> Commenced 2010 subject to Ministry of Education approval
		<ul style="list-style-type: none"> Adhoc community road safety campaigns 	<ul style="list-style-type: none"> Minimal long term benefit if not repeated regularly
		<ul style="list-style-type: none"> Adhoc presentations to private companies on road safety 	-
		<ul style="list-style-type: none"> Vehicle inspections (currently ceased) 	<ul style="list-style-type: none"> Potentially illegal and currently halted.
		<ul style="list-style-type: none"> Adhoc media presentations 	-
		<ul style="list-style-type: none"> High profile fatal crash investigations 	<ul style="list-style-type: none"> On request of the Minister
	<ul style="list-style-type: none"> Crash Reduction Studies & assessments 	<ul style="list-style-type: none"> First Studies since 1980's done in 2010 	
	<ul style="list-style-type: none"> Legislation – to ensure appropriate legislation is in place. 	<ul style="list-style-type: none"> Letter on general road safety and NRSC legislative issues provided to DoT for their consideration. 	<ul style="list-style-type: none"> No internal legal services exist.
	<ul style="list-style-type: none"> Funding and resource allocation – to ensure funding is made available for road safety initiatives and mechanisms exist to distribute road safety funding. 	-	<ul style="list-style-type: none"> Outside of current legal remit other than for NRSC use.
<ul style="list-style-type: none"> Research– to assist with wider knowledge development and transfer. 	-	<ul style="list-style-type: none"> No research carried out in-house or contracted out. 	
Reporting	<ul style="list-style-type: none"> Monitoring and Evaluation – to review progress towards results and to provide feedback on initiatives. 	<ul style="list-style-type: none"> Accident database being updated. 	<ul style="list-style-type: none"> Commenced 2009/2010.
		<ul style="list-style-type: none"> TIN database maintained. 	<ul style="list-style-type: none"> Total inspection numbers collected from mid-2010 onwards to allow monitoring

Table 4.1 World Bank Institutional Management Functions and their Relationship to NRSC Activities

4.3 Road Safety Partner Roles and Responsibilities

Whilst the NRSC has been designated the lead road safety agency in PNG, its remit is such that it relies on other 'operational' organisations to deliver road safety initiatives. For instance, whilst the NRSC is empowered and funded to 'conduct road safety education' and as such to deliver a service (either directly or indirectly), actual improvements to the road design or the enforcement of traffic laws (– both of which are the most powerful tools to make immediate improvements to road safety performance) need to be carried out by road controlling authorities and the Police respectively. Furthermore, research has shown that the most effective delivery of road safety education for children is by incorporating it in the school education curriculum i.e. through the Ministry of Education and schools. As such, despite the NRSC being the one organisation in PNG with road safety at its top priority, it has little direct hands-on influence on the delivery of improvements and typically relies on other organisations for physical implementation. The coordination role that the NRSC should play to ensure the various contributing agencies are accountable for undertaking their designated duties is therefore a vital activity.

Notwithstanding the above, those organisations that currently can and/or do directly contribute to improving road safety are indicated below along with an overview of their roles, responsibilities and functions. As part of the development of this Discussion Paper, a series of meetings have been held with a number of people in the various identified organisations – these are listed in Appendix C. For clarity and simplicity, details of actual road safety interventions that partner agencies can implement have been separated out and are identified in Section 5 of this Discussion Paper.

4.3.1 Department of Transport (DoT)

Amongst many things, the DoT is responsible for setting land transport policy, undertaking land transport planning, along with developing and administering legislation and regulations and monitoring performance. The DoT is split into various sections including the Land Transport Division and the Policy and Planning Division.

One of the tasks currently carried out by the Policy and Planning Division includes the collection and consolidation of the transport sector Development Budget submission - through which the NRSC seeks to obtain additional funding for one-off projects. Whilst the Policy and Planning Division prioritises projects from all transport agencies, it does not have a remit to actually allocate funds. Funding allocation occurs via input from the Department of National Planning and Monitoring and Treasury prior to decisions being made through the National Executive Council (NEC). As such, transport sector projects, including road safety as a sub-set to this, compete with those seeking funding from other sectors of government. The Policy and Planning Division also provides transport planning advice to provincial governments²⁷.

The Land Transport Division (LTD) has two main sections: the Road Safety and Traffic Management (RSTM) and Land Transport Industry Branches. The LTD is effectively responsible for administering the Motor Traffic Act and Regulations, with the exception of certain situations where activity has been delegated elsewhere. Note is made however of the

²⁷ Allan Kennaird Consulting Ltd. Preparation of the National Transport Strategy and Medium Term Transport Plan – Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services. Final Report. August 2010.

comment in the *Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services*²⁸ report prepared as input to the National Transport Strategy that the LTD no longer considers that it has any responsibility for motor vehicle regulation and driver licensing given the roles played by MVIL and provincial governments. This is despite the DoT being responsible for the administration and enforcement of the Motor Traffic Act and Regulations and the fact that there is no provision within the Act to delegate such functions, for instance to MVIL in NCD.

The Land Transport Industry functions include the administration of public transport, freight transport and motor car (vehicle) dealers as well as secretarial support to the Land Transport Board and oversight of the three regional offices in Lae, Kokopo and Mt Hagen.

In theory, the RSTM Branch is responsible for *“the administration, development and implementation of strategies/methods including road safety audits, driver training and education, traffic law enforcement and awareness campaigns, vehicle inspections and specification, road safety planning and engineering, accident data system, maintenance of road furniture and traffic control devices”* and as such receives funding through the recurrent budget. In practice however, the RSTM Branch currently undertakes very little of the above given its capacity and resource/funding constraints.

Of particular interest is that the stated functions of the RSTM branch typically mirror those of the NRSC, potentially resulting in a duplication of actions. However, given the lack of technical capability within the RSTM branch at present, very few related activities are actually carried out with tasks primarily based around vehicle inspections, and a recent initiative to review the licensing of Authorised Inspection Stations (AIS) - which are approved to inspect vehicles and issue ‘safety stickers’ indicating roadworthiness (see Section 5.3).

Given the overlap of responsibilities, there is a very clear need to clarify the role of the RSTM branch of the LTD compared with the legally defined NRSC functions. As such, this Discussion Paper acknowledges the recommendations set out in the aforementioned *Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services* report to merge the LTD and Land Transport Board with the NRSC to form a new Road Traffic Authority (RTA). It is understood that the National Transport Strategy will seek to clarify such arrangements for the future.

Recommendation:

9. *Review and clarify the roles and responsibilities of the LTD to ensure duplication with NRSC doesn't occur, or implement the recommendations set out in the Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services report with respect to establishment of a Road Traffic Authority (RTA).*

4.3.2 Road Controlling Authorities

Road Controlling Authorities (RCAs) are those organisations and agencies that have responsibility for managing the road network under their control. Notwithstanding the comment in the National Transport Strategy – Issues Paper (Rev 1.3) that *“road agencies such as DoW, NRA, NCDC and Provincial Governments have responsibility for safety of road design and*

²⁸Allan Kennaird Consulting Ltd. Preparation of the National Transport Strategy and Medium Term Transport Plan – Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services. Final Report. August 2010.

together with DoT-LTD – for safe traffic management”, in reality, little real interest and commitment to ensuring new and existing road infrastructure is safe and fit for purpose has been shown given the lack of any explicitly stated road safety responsibility in their mandate and/or previous proactive action. The only exception to this is the National Roads Authority Act which makes reference to undertaking road safety activities, and an acknowledgement to road safety in the DoW 2009-2012 Corporate Plan.

As such, there is a strong need to define responsibilities and clarify the roles of road controlling authorities. In particular, there is a need to identify the road controlling authority's duties with respect to ensuring the safety of road users on roads under their control, i.e. to monitor and improve road safety on their network. This approach puts the onus onto road controlling authorities to develop safety management systems and will encourage them to make road safety considerations and activities (such as accident investigation and prevention; and safety auditing) more mainstream within their daily activities. Without this legal mandate, it is highly unlikely that a safety management system approach to looking after the road network will be adopted. Current road safety activities undertaken by the various road controlling authorities are outlined below.

Recommendation:

10. *Ensure road controlling authorities are legally responsible for monitoring and improving road safety on their network.*

Department of Works (DoW)

The DoW is responsible for the construction and maintenance of National Transport Infrastructure – with the exception of those roads under the control of the National Roads Authority (NRA).

Within the DoW Corporate Plan (2009-2012), one of its corporate goals is to ‘provide safe and trafficable roads’ through the provision of ‘road and other technical infrastructure using clear guidelines’ As part of this, deliverables include the percentage of roads in various levels of condition with the aim of providing ‘quality road infrastructure, which will be safe, secure and reliable.’

As such, despite no definition relating to various road conditions being provided in the Corporate Plan, the DoW clearly acknowledges its responsibilities to address road safety issues in the design and maintenance of the roads under its control within the Plan. As indicated previously in Section 2.2, it is noted that to date, road condition has primarily been determined by surface condition and its impact on operating speeds relative to the design speed through the Road Asset Management System (RAMS) rather than with safety specifically in mind. Whilst this does not mean that road designs, rehabilitation and maintenance are constructed unsafely, it is suggested that more attention could be given to safety, for instance with ‘improvements’ being subject to road safety audits at various stages of design and/or the construction phase. The soon to be available crash location information from the NRSC accident database should also be used by DoW to help them better manage their road network and also influence road rehabilitation locations, designs and maintenance programs. Given that the majority of long distance travel is currently on DoW controlled roads, based purely on exposure, it can be expected that the majority of accidents will also occur on such roads. As such, the DoW has a major part to play in improving road safety.

It is of interest to note that DoW does not have any particular person, Division or Section specifically responsible for ensuring road safety is considered as part of its projects (such as occurs with the environmental person within DoW) or able to provide specialised road safety engineering advice to others within the Department.

Recommendation:

11. *Identify a 'road safety champion' within DoW with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts – as recently occurred in 2010.*

National Roads Authority (NRA)

The National Roads Authority Act 2003 sets out the objectives and functions of the NRA and provides for a range of roles relating to road maintenance management, road improvement and the development/management of a supporting Road Fund. Of particular relevance to road safety, clause 6(1)(h)(iii) of the NRA Act notes that the NRA is *"to deliver road improvement, and road restoration when required, by undertaking the design studies necessary for the programmed road improvement or rehabilitation projects ... by ensuring safety audits on design, construction, maintenance and safety aspects of road."*

The NRA effectively takes control and manages/maintains those roads that have been brought up to a suitable standard by DoW – deemed as 'good' condition. As such, the NRA is in theory currently responsible for approximately 2,200km²⁹ of roads – although current funding levels mean that it is unable to manage and maintain such road lengths. Discussions with NRA indicate that whilst the roads under their control have not always been in 'good' condition (as defined in RAMS) upon the change in responsibility for managing them, no consideration has been made with respect to the road safety condition. As such, whilst NRA may inherit roads that are smooth to drive on, such roads may also have hazardous locations (and/or lengths) that will require additional investment by NRA to fix up in order to make them safe. To date, the NRA have indicated that no road safety audits or safety related projects have been carried out on roads under their control., although consideration is currently underway with respect to employing external consultants to undertake an audit of the new road improvements between Lae and Nadzab.

Recommendation:

12. *Identify a 'road safety champion' within NRA with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.*

National Capital Districts Commission (NCDC), Provincial and Local Levels of Government (LLG)

The NCDC and Provincial Governments have slightly different sets of power given that the NCDC was established as municipal authority through the NCD Act 2001. Whilst NCDC is not entitled to generate revenue in many of the ways that Provincial Government's can do (such as through driver licensing and/or vehicle registrations) it still has a responsibility to manage and maintain the entire road network in NCD, including national roads gazetted to the NRA - although the NRA is assisting with maintaining such roads and a draft Memorandum of

²⁹ DoW supplied data – October 2010.

Understanding (MOU) has been prepared with respect to infrastructure improvement in the NCD. It is also noted that funding for 'Port Moresby Roads' has also been provided in the 2010 Supplementary Budget.

Notwithstanding the NCD, amongst other things, under the Organic Law on Provincial Governments and Local Level Government Act 1998, Provincial Governments have powers and responsibilities to make laws relating to 'transportation and facilities' (including the 'registration of vehicles' and 'town and urban planning'). Similarly, LLGs have powers and responsibilities to make laws affecting transport such as 'town, city, village and community planning' and the improvement of such locations, and as such, can have a major impact on issues such as local level transport infrastructure.

Furthermore, '*The Determination assigning Service Delivery Functions and Responsibilities to Provincial and Local Level Governments*' prepared by the Provincial Local Level Services Monitoring Authority setting out a NEC decision (currently awaiting gazettal) specifically notes that Provincial Governments are responsible for "promoting road safety" and must consider "road safety responses in road network planning."

Regardless of the above requirements, discussions with the NCDC clearly highlight the lack of internal technical capability and capacity that currently exists with respect to road safety engineering and management. Whilst acknowledging that private consulting companies may be able to assist such levels of government for a fee, in reality, it reflects the level of support that the NRSC may need to provide to such organisations in the medium term until their own capability has been developed. This issue is also true for other road controlling authorities, including DoW which has a shortage of road design engineers.

Whilst the ultimate aim is for road controlling authorities (rather than the NRSC) to be able to lead and manage road safety on their own networks with NRSC providing coordination, support and input as required, it is acknowledged that this will be many years off and that even in the long term in some areas, there will be a strong need for NRSC to lead road safety initiatives rather than to rely on provincial and local levels of government.

4.3.3 Royal Papua New Guinea Constabulary (Police)

The Police undertake a number of roles and responsibilities relating to road safety. Not only are they responsible for enforcing the Motor Traffic Act and Regulations relating to the behaviour and licensing of road users and the road worthiness of vehicles, but they also carry out driver testing. Specific comment and details relating to enforcement and driver testing is set down in Section 5 of this Discussion Paper.

Section 5 of the Motor Traffic Act states that "*every commissioned officer of the Police force is an Inspector of Motor Traffic*". In particular, Section 44 and 44A of the Motor Traffic Act sets out the powers and duties of the police with respect to traffic enforcement. As such, the Police '*may give reasonable directions*' to all road users to ensure the safe and efficient operation of traffic on a public street. In addition, under Section 40 of the Motor Traffic Act, a member of the Police Force may arrest without a warrant any person who is or is believed to have been driving under the influence of alcohol or drugs; fails to provide their details or assist in identifying a person; and/or is interfering with a vehicle or using a vehicle without the consent of the owner.

At present, the Traffic Division at Police HQ performs an administrative role whilst the traffic divisions within the Provinces and NCD undertake the operational activities. The Traffic Division at Police HQ have recurrent funding with an amount directly allocated to them. To put the recurrent funding of the Traffic Division at Police HQ into context, the Traffic Division received K400,000 in 2008, compared to the K1 million received by the Police Band. Funding for the Traffic Operation Divisions and Highway Patrol sections in the Provinces is included within the overall funding for the entire police force for that Province. As such, the Highway Patrol sergeant and Officer in Charge of each Provincial Traffic Division typically report to the Provincial Police Commander.

Under current arrangements, Traffic Police in Police HQ are responsible for trying to secure equipment such as speed guns etc for use by Provincial Traffic Divisions and the Highway Patrol. However, it was noted that the intention in the future is to try and put responsibility and accountability back to the Commanders in the Provinces for obtaining necessary equipment. It should be noted that the Traffic Police currently have no equipment such as breathalysers or speed guns to assist them in carrying out enforcement duties.

In line with the above, it was indicated that Police HQ are frustrated that Provincial/Post Commanders looking after traffic police consider traffic policing as relatively unimportant – with the impact that some traffic police officers paid little attention to their duties – e.g. not sending in traffic accident reports to Police HQ. As such, the Director of Traffic is often not kept informed of traffic matters in the Provinces. The proposal to put the emphasis on Provincial Commanders to adequately manage and fund staff and necessary equipment is therefore unlikely to result in improved levels of service, particularly if such officers put traffic enforcement as a low priority. This is highlighted by recent concerns and comment that some Police stations may run out of Accident Report Forms due to a lack of funds to get more copies.

Discussions with the Traffic Police in Police HQ have also indicated a number of concerns, in particular the movement and transfer of Traffic Police from current positions into other sections of the Police force without any replacement and/or notification. As such, the experience that Police officers may have obtained is lost to the Traffic Divisions, despite such work being specialised work. The above is compounded by the fact that only very limited traffic police training is carried out at the Police Colleges whilst no formal training is carried out whilst being on the job due to a lack of funds.

The transfer of traffic police officers to other divisions is acknowledged as being a particular problem. As such, Police HQ has a list indicating names/positions (and hence numbers of traffic police etc) in each Province. However, it is recognised that this list is outdated and in reality, the actual number of officers working within traffic divisions is unknown. (For note, in June 2010, the list indicated 202 traffic police officers, 101 highway patrol officers, 9 training/testing/driving school officers and 7 headquarter police staff.)

The Police have also indicated a lack of transport to get officers to different locations and a general lack of manpower as being other major issues facing the traffic police.

At present, there is little deterrence to disobeying the traffic rules given the aforementioned Policing issues along with the extremely low level of fines associated with any infringements (see Section 4.5 and 5.2). Notwithstanding the comment above concerning the lack of equipment, scope exists for the PNG Police to get back to basic traffic policing, with an aim of

proactive enforcement targeted at those behaviours that are likely to cause death and serious injury – most notably speeding and drink driving (see Section 5.2).

Recommendation:

13. *Additional funding and training of dedicated Traffic Police in each of the Provinces is a necessity along with improved specialist training during Police college and the provision of enforcement equipment (see Section 5.2)*

4.3.4 Department of Health

The Department of Health, and in particular the Lifestyle Diseases Unit, facilitated the collation of data on road safety in PNG for the WHO 2008 Global Status Report and obviously have a vested interest in improving road safety given the number of people seeking healthcare treatment caused by road accidents. It is also noted that the Secretary for the Department of Health is on the NRSC Board.

The Department of Health has recently released its National Health Plan 2011-2020 which states that *"injuries are also prevalent and account for 8% of total admissions, and 11% of the total burden of disease in the country. Many of them are believed to be transport or violence related. There is scarce information on causes and determinants of injuries and very limited focus on them in the health sector."*

Given this acknowledgement, Key Result Area 7 of the National Health Plan seeks to promote healthy lifestyles. Objective 7.1 of the Plan aims to *"increase the (sic) health sector response to prevention of injuries, trauma, and violence with an impact on families and the community' with a noted strategy being to 'increase the capacity of hospital accident and emergency departments to address transport-related injuries."*

Research from overseas has shown that whilst 50% of road accident victims typically die within minutes of the crash occurring, approximately 15% die within 4 hours of the crash and the remaining 35% after that time period. The need to provide trauma care for such instances is therefore strongly supported. However, there is still a need to focus on improving the transport of victims from the crash site to hospital in a timely manner through a comprehensive ambulance service (see Section 4.3.5 below) as well as raising general first aid awareness and skills for the general public.

Furthermore, the Department of Health note that whilst they do undertake health promotional work, it's more general in nature, for instance focussing on the health issues associated with alcohol rather than on its impact on driver performance and the dangers of drinking and driving.

4.3.5 Emergency Ambulance Service

The St John Ambulance Service provides free emergency access to hospitals for victims of motor vehicles accidents occurring in NCD, parts of Central Province as well as Wewak, Madang and Popondetta.

Full details on ambulance emergency service systems (i.e. post crash and pre-hospital) when seriously injured casualties are most at risk of dying are provided in Section 5.4.

4.3.6 Department of Education

As with the Department of Health, the Secretary for the Department of Education is on the NRSC Board. However, to date, the Department of Education and schools have not played any real proactive role in promoting road safety education for children. Whilst schools in the NCD welcome one-off annual talks and presentations by road safety awareness teams from the NRSC and Police, road safety does not currently form any particular major part of the education curriculum for any age group, although it is used as an indicator for a number of learning outcomes, for instance within the Community Living and Personal Development subjects.

Notwithstanding the above, it should be noted that in 2010, the NRSC approached the Department of Education with the aim of including road safety within the national school curriculum and developing appropriate resource materials such as teacher's guides and classroom material. To date, the NRSC are still awaiting feedback from the Department on its proposal and suggestion. Subject to the above going ahead, NRSC will need to develop the resource material in conjunction with the Department of Education and will also need to secure funds for printing and distribution of the material.

Recommendation:

14. NRSC to continue chasing up the Department of Education with the aim of preparing appropriate resources for inclusion in the school curriculum for different age ranges. In due course, there will be a need to identify and obtain appropriate sponsorship to help print and distribute the material.

4.3.7 Department of National Planning and Monitoring (DNPM)

The DNPMs primary involvement to date within road safety involves their role helping to assess and review Development Budget applications (through which the NRSC and other government agencies seek funding for one-off projects) along with developing Government strategic planning documents.

Whilst no specific requests for Development Budget funding from DoW, for example, for specific road safety infrastructure treatments (rather than maintenance) have been submitted, NRSC has previously submitted applications and received funding to re-establish the accident database. Subsequent Development Budget applications by NRSC however have been unsuccessful.

4.3.8 Motor Vehicles Insurance Limited (MVIL)

MVIL was established through an Act of Parliament and is a company incorporated under the Companies Act 1997. As such, despite being set up through the law, it is in effect a commercial enterprise. Its corporate vision notes that one of its roles is the active 'promotion of road safety for all the travelling public' in Papua New Guinea. As identified in Section 4.7, MVIL carried out a major advertising campaign in 2010, with the aim of reducing road accidents and the associated accompanying insurance payouts.

In addition, of particular relevance is the Motor Vehicles (Third Party) Insurance Act which is intended to provide compensation to people injured in a motor vehicle crash with compensation raised from the premium that all motorists must pay when they register their vehicle for use on the road and at the annual renewal. As such, third party insurance is compulsory for all drivers of motor vehicles in PNG. MVIL report that the collected funds pay individual claims whilst an amount has also been set aside recently to fund road safety promotion.

Compensation is available in two parts: for injured persons or dependents of a deceased person that is a victim of a road crash subject to an owner/driver being legally liable for the injury or death of a person; and through a Court Order by a District Court Magistrate/Coroner for a road fatality to help prevent disputes following a fatal crash – known as Basic Protection Compensation. Compulsory Third Party insurance does not cover any payment for damage to any property, including vehicles.

In addition to Third Party Insurance, MVIL also administers motor vehicle registration and renewal as well as driver licensing in NCD. Elsewhere this task is carried out by provincial governments even though there is no direct provision for these delegations to MVIL and provincial governments in the Motor Traffic Act.

4.3.9 Land Transport Board (LTB)

The LTB Act 1968 sets out a number of statutory functions relating to the LTB with respect to the licensing of public hire cars (taxis), private hire cars and public motor vehicles (PMVs). Of particular note is that the Board should “*examine the accident and safety records of such vehicles*”. It is not known if such activity is currently carried out by the LTB, although it is extremely unlikely given that no accident database has existed until recently.

4.4 Coordination

4.4.1 Horizontal Coordination across Central Government

The two main multi-sectoral road safety bodies are the NRSC Board and the Road Safety Technical Sub-Committee, which both report to the Minister of Transport. The coordination hierarchy and the agencies represented on each body are shown in Figure 4.2.

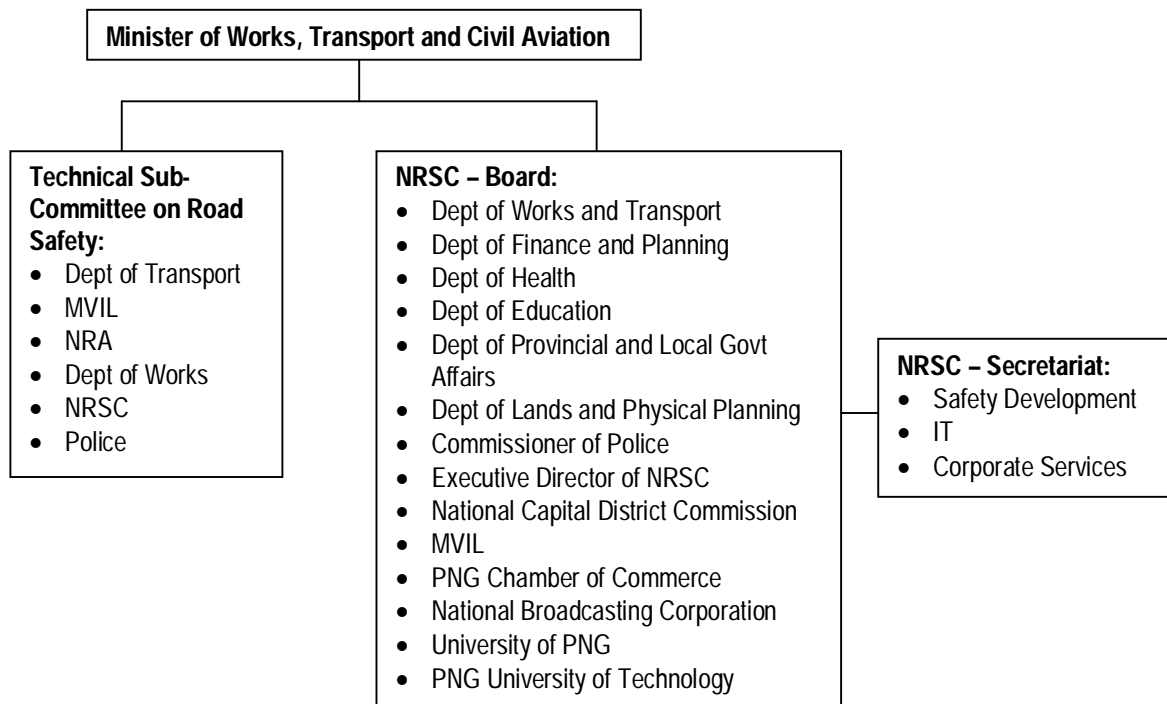


Figure 4.2 Multi-Sectoral Coordination of Road Safety in PNG

It is understood that the Road Safety Sub-Committee was formed in February 2010 to discuss and formulate policies and plans with respect to improved road safety activities and supporting legislation. The Committee was formed following a number of high profile fatal crashes and is intended to provide advice on road safety issues to the Minister for Transport as well as to the NRSC Board.

The NRSC Board is made up of Departmental Heads of eight public sector agencies (*ex officio* members) along with six other nominees representing various interested parties, including the public sector. The NRSC Act notes that seven members make up a quorum, and that "*the exercise of power or the performance of a function of the Council is not invalidated by reason only of a vacancy in the membership of the Council.*"

In terms of effective action, it should be noted that the NRSC Board has not met since 2005, despite a number of efforts by the Executive Director and the Secretariat to obtain representatives – particularly from the non *ex officio* members. As such, the NRSC Secretariat has been operating without a Board to provide clear direction and instructions on priority activities. Full details on the NRSC Secretariat activity and operations have been outlined previously in Section 4.2 of this Discussion Paper.

It should also be noted that the lack of activity in terms of Board meetings is partially a reason behind the lack of coordinated road safety activity by those agencies represented on the Board.

Notwithstanding the above, it is now timely to review the types of organisations that make up the Board given that only those key and relevant organisations that can influence road safety should be included. As such, it is interesting to note that the Technical Sub-Committee incorporates both of the Transport and Works' Secretaries as well as the NRA whilst such representation is not directly included on the NRSC Board. Similarly, the need for having two universities should be reviewed and consideration given to amending the NRSC Act with respect to membership of the Council. A more streamlined and relevant Board with a commitment and desire to improve road safety may assist in helping a Board to be formed in a timely manner and then appropriate direction and coordination provided to the Secretariat. In the meantime, given the interpretation of the Act that only seven members need make up a quorum, it may be worthwhile at least reconvening the Board based primarily on *ex officio* members and any nominated and approved/accepted³⁰ non- *ex-officio* members to discuss and agree a way forward in terms of other members of the Board and hence to put a recommendation forward to the Minister.

Recommendation:

15. *Re-establish the NRSC Board as quickly as possible (with or without the full complement of members) to ensure some level of high level discussion and coordination can occur.*
16. *Review Board representation to ensure only relevant agencies that can directly influence road safety are represented. Non relevant (or interested) agencies should be removed from the Board and the only most pertinent organisations included.*

³⁰ As approved by the Public Services Board

Following the re-formation of the NRSC Board, good practice would indicate the need for a number of Working Party Sub-Committees made up of technical officers within the relevant/interested agencies. Such Sub-Committees should be responsible for different aspects of interest that the Board wishes to push forward on as matters of priority – for instance legislation reform relating to speed management, drinking and driving or child road safety education, with the Secretariat doing the bulk of the work to assist the Working Party Committees.

In addition to the above, consideration should be given to allowing interest groups, such as the PMV Owners Association occasional access to the NRSC Board.

As part of the above, this Discussion Paper is aware of the recommendation in the *Institutional Arrangements and Regulation of Vehicles, Drivers, Transport Services and Road Safety* report prepared as part of the NTS in which the NRSC, Land Transport Division of the DoT and Land Transport Board functions would be merged to form a Road Transport Authority – which in turn, would act as the Secretariat to a NRSC Board. Such an approach retains the multi-sector NRSC Board and a focus on road safety, although experience from elsewhere has shown that a non-dedicated secretariat is not ideal given that it has a dual focus – i.e. in the proposed instance, servicing both the RTA and NRSC.

4.4.2 Vertical Coordination from Central to Provincial and Local Level Government

Despite the geographical, linguistic and cultural differences across PNG (in addition to the size of the country), to date no Provincial Road Safety Committees (PRSCs) and associated secretariats have been set up to help promote road safety in the regions. As such, road safety promotion and activity undertaken by the NRSC has been primarily concentrated in and around NCD (with some vehicle inspections carried out in Lae and elsewhere on a case by case basis) with little else (the recent MVIL campaign being an exception) being provided to the Provinces.

The limited crash statistics obtained to date indicate that between 50% and 60% of all reported crashes (fatal, hospitalisation, injury and damage only) occur outside of NCD. When considering only those crashes involving a fatality, hospitalisation or injury, approximately 70% of reported crashes occur outside NCD. As such, there is obviously a need to improve road safety activities outside of the NCD.

The NRSC has in the past sought to obtain Development Budget funding to set up Regional Offices around the country. To date however, the NRSC has been unsuccessful in its applications. It is noted that good practice³¹ would suggest that whilst some funding for such provincial offices should come directly from the NRSC, 30% to 40% should be raised through local sponsorship and fundraising activities within the geographic area being covered.

Given the above, and the cost of setting up provincial offices (to provide the full range of services and functions of the NRSC rather simply vehicle inspections for instance), it is noted that unless additional funding is obtained, the NRSC should initially concentrate its efforts on setting up a local coordination framework and to demonstrate its success in delivering its full range of identified outputs/outcomes in the NCD first of all, rather than focussing on enlarging its geographical sphere of influence. Provincial offices however should be set up as soon as possible to help provide a coordinated approach to managing road safety. The proposed

³¹ Asian Development Bank. Road Safety Guidelines for the Asian and Pacific Region.

merger of the NRSC, the Land Transport Division (LTD) of the DoT and the Land Transport Board noted earlier may facilitate this given that the LTD already has offices in Lae, Rabaul and Mount Hagen.

Recommendation:

17. *Subject to funding and/or the merging of institutions, establish Provincial Road Safety Committees serviced by provincial offices of the NRSC. Such offices however should carry out the full roles of the NRSC and focus on helping coordinate road safety activities rather than simply undertaking vehicle inspections. As part of this, training of staff will be an essential component.*

4.4.3 Partnerships

Only a limited number of partnerships currently exist (or have existed) between agencies involved in road safety:

- NRSC/Police – the collection and subsequent analysis of accident data.
- NRSC/Police – road safety education presentations to NCD schools.
- NRSC/Police - Motor Traffic Handbook
- NRSC/Police/DoT/NCDC/Provincial Governments – vehicle inspections.
- NRSC/MVIL – sharing of information relating to counterfeit driver licences and vehicle registrations.

In addition to these more regular partnerships, a recent crash reduction study led by the NRSC brought together the DoW, NRA, NCDC and the Police, whilst the NRSC has also worked closely with DoW on a fatal crash assessment. However, more formal agreements in the form of a Memorandums of Understanding to establish ways in which the NRSC will work together with its key partners should be established for mutually beneficial purposes. As part of this, it should be noted that the NRSC Act already encourages and permits the NRSC to work alongside its partners to improve road safety.

Recommendation:

18. *Formalise MOUs between agencies where mutually beneficial activities occur in order to help strengthen and build relationships.*

Whilst acknowledging that some sponsorship of NRSC led road safety campaigns have been provided in the past, it is noted that no formal continuous partnerships exists with non-government organisations and/or the private business sector for road safety. It is therefore important that the NRSC seek to work in collaboration with any organisation wishing to assist in promoting road safety in order to help ensure that appropriate actions/activities are undertaken as part of a larger NRSC led plan or program (i.e. consistent with any future national road safety strategy).

Whilst some work has been carried out in conjunction with Provincial Governments previously in terms of vehicle inspections, with the exception of Port Moresby and Lae, it should be recognised that the lack of provincial offices makes formal partnerships with provinces difficult to maintain for the NRSC.

4.4.4 Parliamentary Relationships

Given the direct reporting line to the Minister of Works, Transport and Civil Aviation, the NRSC is fortunate to be able to interact at a reasonable level with the Minister. However, to date, little other strong parliamentary relationships exist at central, provincial or local level. The interest in road safety at a general level from politicians can perhaps best be judged on the basis of political comment following recent major fatal crashes. It is of note that other than the actions taken by the Minister for Work, Transport and Civil Aviation and recent newspaper statements, for instance by the Moresby Northeast Member of Parliament (MP), with the exception of when a major accident occurs, few other politicians provide comment on road safety concerns and issues. It is therefore essential for the NRSC to try and establish political backing and as part of this, to provide appropriate data to politicians to demonstrate why road safety is an important issue that they should support.

4.5 Funding and Resource Allocation

4.5.1 Ensuring Suitable Funding Resources

The sole dedicated source of funding for road safety activities is provided to the NRSC through a compulsory 5% levy on third party insurance paid through the MVIL. This amount, which is typically in the order of K1.2million to K1.5million per annum, is used primarily to cover existing staffing costs associated with day to day activities and overheads. Whilst an excellent start, only a limited amount is available for undertaking road safety education/promotion – the only area in which NRSC can carry out activities that are immediately ‘visible’ to the public and politicians.

In addition to the above, as indicated in Section 4.3, Traffic Police HQ receives recurrent funding for the accident investigation, traffic management and road safety section of the Police Department. This budget is for staffing and overheads at head quarters rather than specific enforcement activities. Funding of traffic policing within each Provincial Police Force comes from within the general budget allocated to each force.

No specific ‘line items’ within the DoW or NRA budgets for road safety infrastructure improvements - either as part of their recurrent budget or as Development Budget applications exist or have been known to be sought. Similarly, no specific budget for road safety improvements can be expected to exist in Provincial Government budgets. Whilst road controlling authorities such as DoW can apply for funding to improve hazardous road sections through the Development Budget, in reality this doesn’t occur with the focus being on maintenance and rehabilitation.

As such, the funding of actual road safety initiatives is extremely limited with no real committed and secure funding for actual interventions such road engineering improvements – which as highlighted in Section 5, are highly effective and cost efficient measures. As noted in a TRL report³², funding is “*not a guarantee of effectiveness but it is a prerequisite for activity.*” The importance of ensuring sustainable funding sources therefore cannot be overstated.

³² Transport Research Laboratory with Ross Silcock, Baktie Group. Review of Road Safety Management Practice. 2001. Prepared for Global Road Safety Partnership through UK Department for International Development.

Funding of the NRSC

In terms of NRSC funding its activities, legislation permits funding of the NRSC through a number of sources in addition to the specific and dedicated allocation of a minimum of 5% of compulsory third party insurance fees collected by MVIL.

Specifically, the NRSC Act notes that whilst different rates of levy may be fixed for different types of motor vehicle issued with third party insurance, such a levy should not be less than 5%. It is noted that this minimum levy has not changed since the NRSC's inauguration. Guidance contained in the 'Review of Road Safety Management Practice'³³ suggests that a number of countries, including Fiji, typically apply a 10% levy on third party insurance policies. Any increase in PNG, say from 5% to 10% (effectively doubling funding to NRSC) needs careful consideration given the risk that increasing costs at the expense of the motorist, as may occur to cover the increased levy, may reduce the take up of mandatory insurance and increase the risk of insurance (and vehicle registration) evasion. As such, any increase in the levy may need to be at the expense of the revenue derived by MVIL and/or Government.

Whilst the existing 5% levy covers the salary of NRSC staff undertaking safety work within the organisation, for instance in relation to maintaining the accident database and providing technical advice/visiting schools, little funding is available for obtaining specialist non-technical advice, for instance with respect to preparing a major advertising campaign nor for actually carrying out the campaign in terms of the physical advertising. As such, any major advertising campaign carried out by the NRSC would currently need to obtain funding from the Government's development budget – see below, or via private sector sponsorship.

Recommendation:

19. Increase the existing minimum 5% levy on 3rd party insurance to at least 10% (and/or more for those vehicle types at greatest risk) to better fund NRSC activities and functions e.g. awareness campaigns and carrying out those management activities identified previously.

Alternative sources of funding noted in the NRSC Act also include funds provided annually by Parliament, recompense for services provided, sponsorship and any revenue obtained for the "purposes of carrying out and giving effect to the Act."

As part of the above funding sources, Section 41(3) of the NRSC Act states that, 'all monies received by way of fines for offences... shall be paid into the funds of the Council' with respect to offences committed against Section 41(1). Section 41(1) relates to the failure of persons to 'furnish any return or information' requested in a written notice by the NRSC.

Given the above, through innovative interpretation of the law in terms of the NRSCs functions and a 2006 Gazette Notice (G83 dated 24 April 2006) relating to NRSC Operational Instructions, up until recently (September 2010), the NRSC had been undertaking vehicle inspections with respect to road worthiness, and vehicle/driver licensing and retaining the collected fines. Fines collected from the inspections paid for the cost of the enforcement operations (inspectors and administration costs) with any additional amount fed back into the NRSC for their road safety activities – in essence, a form of hypothecation (the principle of allocating resources such as from traffic fines for a specific purpose – in this case road safety).

³³ Transport Research Laboratory with Ross Silcock, Baktie Group. Review of Road Safety Management Practice. 2001. Prepared for Global Road Safety Partnership through UK Department for International Development.

In this instance, road users behaving in an inappropriate or illegal manner pay for their enforcement. As such, the approach resulted in no additional funding or resources from government, and thereby had no impact on the national budget. However, such action can also be seen as a revenue raising activity (rather than a road safety activity) – particularly given the low level of fines that are issued (due to the outdated legislation) which have ceased to act as a deterrent. Enforcement should be such as to encourage defective vehicles to be fixed – although there is very little evidence to show that this was occurring.

Notwithstanding that the Gazette Notice specifies a number of approved NRSC officers as Traffic Inspectors (albeit called Road Safety Inspectors in the Gazette Notice) and the statement that the 'written notice' referred to in Section 41(1) of the NRSC Act is to be known as a 'NRSC Traffic Infringement Notice', it should be noted that there has been some doubt as to the legitimacy of the vehicle inspection process carried out by the NRSC. In particular, concerns relate to the legal definition of a Traffic Inspector, as set out in the Motor Traffic Act which limits the position to commissioned Police officers and appointed Public Service officers – for instance, NRSC staff may not actually be public service officers even though they may be governed by public service conditions. Furthermore, the wording of Section 41 of the NRSC Act suggests that the retention of fines is more to do with offenders failing to 'furnish any return or information' that is required. As such, despite comment in the Gazette Notice that the Secretary of the Department of Finance has 'approved and authorised the NRSC to collect NRSC Traffic Infringement Notice fines for the purposes of road safety campaigns', the Treasury has questioned this element and had asked the NRSC to write to the Secretary for further advice on this matter given the lack of any recurrent budget funding to the NRSC. In addition, as identified in Section 4.6 of this Discussion Paper, 'on-the-spot' fines which have been collected as part of the NRSC Vehicle Inspections can only be collected by members of the Police force or a 'prescribed officer'. Unfortunately, a 'prescribed officer' for the collection of on-the-spot fines is not defined in the Motor Traffic Act or the Regulations, and therefore, on-the-spot fines can only be paid to the Police. Given these concerns, it is acknowledged that the Minister for Transport has directed the NRSC to halt vehicle inspection activities.

It should be also noted that there is little hard evidence that the vehicle inspections have been effective in terms of improving road safety - with no definition or measure of success being applied to the vehicle inspection process. Whilst data relating to the types and numbers of vehicle faults/licensing issues are collated and analysed, no record of the total number of vehicles inspected is kept, thereby making it impossible to determine if the overall percentage of un-roadworthy vehicles in the vehicle fleet is decreasing and therefore whether the inspections are helping reduce this issue. Furthermore, until crash data is fully entered into the system, it isn't possible to determine the extent to which vehicle faults are contributory causes to road accidents in PNG – although preliminary analysis indicates that it is in the order of 10% - not too dissimilar to other countries. In addition, it should be noted that such roadside inspections should ideally not be a sustainable method of accruing funds as an improvement in the vehicle fleet (which is the desired state) will result in less and less fines for un-roadworthy vehicles – making inspections no longer a financial viability.

Regardless of the above, the NRSC is aware of proposals as part of the *Institutional Arrangements for Regulation of Vehicles, Drivers and Transport Services* report prepared as input into the NTS to merge the NRSC with the Land Transport Division (LTD) of the DoT and the Land Transport Board to form a new Road Traffic Authority agency, with funding being primarily via a charge on motor vehicle registration and driver licensing.

Funding of General Road Safety Initiatives – Infrastructure and Enforcement

Engineering improvements (for example on national roads under the control of the DoW) and traffic law enforcement typically come from the recurrent budgets for the DoW and Police Force respectively. However, it is noted that no specific funding for road safety engineering measures is identified within the DoW budget nor sought as a separate item through the Development Budget - although scope does exist in some cases to re-direct funds towards safety projects, as intended as part of the improvements to the Poreporena Freeway through the NRA from their maintenance budget for the road.

Technical and financial resources are required in order to turn actions into words – as is intended with the recent Crash Reduction Study at Poreporena Freeway whereby NRA funding exists to improve the safety of the road at a specific identified hazardous. As such, at present, implementing agencies such as road controlling authorities need to choose to increase their safety responsibilities given the lack of current legal responsibility. As highlighted elsewhere, setting road controlling authorities with legal responsibilities may highlight their duty with respect to the safety of road users and hence may trigger some funding allocation, however minor.

Whilst it may be expected that road designs will be developed and constructed with safety in mind (including the use of road safety audits at various stages of the design and construction process), opportunity also exists to set aside some funding explicitly for road safety awareness and enforcement for that section of road as part of the project costing exercise – particularly for major road improvement projects. As such, any new road or road rehabilitation project costing over a specified amount could be subject to having funds set aside for road safety education/enforcement along the section of road being constructed/upgraded.

Recommendation:

20. Consider requiring future major road building/road improvement projects that will have a significant impact on local communities that the road passes through to set aside a small percentage of the total cost for road safety enforcement and/or awareness on the improved section of road, subject to monitoring and evaluation plus auditable records of activities and costs being kept.

Business Sector Participation

It is acknowledged and noted that road safety has, and does, receive commercial support. Indeed, a representative of the PNG Chamber of Commerce is on the NRSC Board.

Of particular note in terms of business sector participation is MVIL’s ‘Road Safety is not a Game’ publicity campaign (see section 4.7) whereby extensive funds (reported to be in excess of K6million) have been spent advertising a range of safer behavioural actions. MVIL also advertise road safety messages within the telephone directory and in newspapers. A key element of MVILs involvement is that their business and profits suffers due to payouts associated with motor vehicle insurance claims; and it is therefore in their interest to actively promote road safety. The activities that have been undertaken by MVIL however have not necessarily tied into other activities by road safety partners and scope potentially exists for MVIL to better target and work with others for future activities in order to maximise their investment in road safety.

In addition to the above, SP Breweries are also in the process of carrying out a ‘don’t drink and drive’ advertising campaign.

Other examples of commercial involvement include Digicel and AkzoNobel sponsoring a number of NRSC led poster campaigns, whilst in the past, it is known that AusAID has also sponsored some road safety posters in conjunction with the Police.

The lack of driving schools in PNG also indicates that a lack of commercial demand exists with respect to improved driver training. For instance, whilst three driving schools are listed in the telephone directory (all in Port Moresby), one has already closed down and the Central Province Transport Authority is reported to be closing down – despite claims that they were busy with a large number of learner drivers. It is encouraging however that a number of businesses have requested NRSC to give presentations relating to safe driving skills whilst the ExxonMobil LNG development is reported to be carrying out driver training for its employees using driver simulators.

Given the above, there is greater scope for business sector participation with specific sponsors for instance needing to be matched with different road safety initiatives. For example, Fiji's recent attempts to ban talking/texting on mobile phones whilst driving - given research indicating that such behaviour is extremely risky from a road safety perspective - was backed and supported by the major mobile telephone companies operating in Fiji. Obtaining additional sponsorship and coordinating sponsorship opportunities/advertising by others is an area that NRSC needs to focus on in the future in order to undertake more widespread road safety awareness campaigns.

Recommendation:

21. NRSC to continue seeking advertising sponsorship for their own campaigns and/or to help agencies/organisations wishing to carry out their own road safety promotion by coordinating activities and ensuring such promotions are targeted at issues identified as local issues in accordance with any future road safety strategy/plan.

4.5.2 Allocation of Resources Across Safety Programs

As indicated earlier, ideally there is a need for specific committed funding of identified road safety activities rather than such interventions being contained within other general funding allocations in various agencies – that are open to be used for a range of purposes. It should be noted that no specific line item exists within the DoW budget specifically for road safety measures and improvements. Whilst ideally this should be part of the recurrent budget allocation, development budget funding could and should also be sought. For example, in the future, following the substantial development and updating of the accident database, it should be possible for road safety programs to be developed for different road controlling authorities whereby in one year, hazardous locations (black spots) on an agency's road network are identified along with the contributing factors and mitigating measures and costs – the details and costs of which can then be included within the following year's budget request. In such a case, DoW for instance could seek Development Budget funding for a number of black spot treatments in a single application given that costs for such individual locations are typically relatively low and provide a calculated benefit cost ratio for the various treatments. Without such surety of funding however, it may be pointless undertaking crash reduction studies and road safety audits of existing roads as no actual treatment will eventuate.

Therefore, alternatively, a separate road safety program budget to cover all aspects of road safety (engineering improvements, enforcement, education and awareness) could be established. However, such an approach would need to be very carefully managed and

administered. Whilst this could be developed and managed in a number of ways, a general preference would be to separate out the funding administrator from the service provider or to use existing road fund management administration such as the NRA. Notwithstanding administrative arrangements around such an approach, the problem still exists that sustainable funding sources would still need to be identified and obtained – which would still be subject to annual government budget cuts.

It should also be noted that this Discussion Paper is aware of proposals within the *Institution Arrangements and Regulation of Vehicles, Drivers, Transport Services and Road Safety* report prepared as part of the NTS to restructure funding arrangements with funding for a new Road Transport Authority through charges on driver licensing as well as on motor vehicle registration and renewal. Subject to the amount collected through this, such an option could perhaps fund a limited road safety program (e.g. enforcement equipment and awareness campaigns rather than engineering measures which would need to be covered by each road controlling authority), rather than simply the RTA organisation and administration.

Recommendation:

22. *Ideally establish a separately funded road safety program, administered and audited by an appropriate government agency that does not have direct control of activities that the funds can be spent on (to provide separation of the funder and service providers). Alternatively, encourage the DoW and Police to seek specific funding for road safety in annual budget applications.*

4.6 Legislation

4.6.1 Legislative Framework

The current Motor Traffic Act (1950) and accompanying Motor Traffic Regulation (1967) are somewhat outdated. As such, it is acknowledged that it is the DoT's intention to carry out a review of these legal documents in the near future. This review is strongly supported and encouraged by NRSC. It is recognised that on its own however, legislation changes will have no impact unless those agencies tasked with enforcement are sufficiently enthused and appropriately trained and equipped to carry out their role, whilst publicity and promotional campaigns are needed in conjunction with enforcement to support and maximise potential success.

Recommendation:

23. *NRSC to support and assist the DoT to carry out their proposed review of the existing Motor Traffic Act and Regulations.*

4.6.2 Development and Updating of Legislation

At present, the NRSC does not have any in-house legal skills and relies on the support of the Department of Transport legal services team for any changes to the legislation, rather than being able to push for alterations directly.

Notwithstanding the above, the following areas have been examined and found to require new or altered legislation in order to improve road safety. Details relating to each aspect can be found in various sections of this Discussion Paper given that in many instances, legislation forms only one part of the intervention of the issue being addressed.

Traffic control/general safety-related

- Driving under the Influence of Alcohol and/or Drugs
- Excessive and inappropriate speed
- Use of mobile telephones when driving
- Use of seat belts

Highway-related

- Statutory responsibility for improving road safety for road controlling authorities
- Speed limit setting.
- Traffic signs and markings
- Mandatory road safety audits for new roads/rehabilitation/improvements over a certain cost.

Driver-related

- Registration of Driving Instructors and Schools.
- Professional drivers
- Driver testing standards and requirements

Vehicle-related

- Inspection of Vehicles.
- Roadworthiness Testing
- Public Service and Heavy Vehicle Licensing
- Condition/construction requirements

Fines/penalties-related

- Outdated level of fines and penalty system - it is understood that the current fine amounts for various offences have not been amended for many years and as such, no longer act as a genuine deterrent to inappropriate driver behaviour.

Recommendation:

24. *The review of legislation (including fines and penalties –see below) being carried out by the DoT should consider the above issues through the development of Working Party reports (similar to those prepared for PMVs by DoT).*

25. *Subject to funding, NRSC to consider the employment of a lawyer in due course to provide the necessary advice and drive to change legislation in the absence of a strong push from other areas such as DoT.*

4.6.3 Fines and Penalties

With respect to penalties, Section 34 and 34A of the Motor Traffic Act provides for both ‘on-the-spot’ fines and Traffic Infringement Summons’. Whilst Inspectors of Motor Traffic (including the Police) are able to issue Summons’ under Section 155A of the Motor Traffic Regulations, Section 155 of the Regulations does not specifically identify Motor Traffic Inspectors as being a ‘prescribed officer’ able to issue on-the-spot fines. As such, only Police officers are able to issue such fines, with payment being made to the Officer Commanding the Police Office as specified in the notice – which presumably in theory, should then get included within the consolidated general fund rather than being kept by the Police. In practice, particularly with respect to those Traffic Infringement Notices previously issued by the NRSC vehicle inspectors (see Section 4.5.1), the above legal process was not followed.

It should be noted that on-the-spot fines and Traffic Infringement Summons' can be issued for a wide range of offences with the exception of driving under the influence of alcohol or drugs, whereby offenders can be arrested by the Police.

4.7 Promotion

The promotion of road safety at a management system level needs to extend beyond that traditionally considered in terms of awareness campaigns, publicity and child/community education. As such, for the purposes of this document, promotion also encompasses championing road safety with politicians and the public to demand an appropriate level of safety as well as with other agencies to develop multi-sectoral interventions and shared responsibility. It is noted that to date in PNG, road safety promotion has typically revolved around simple awareness campaigns rather than any targeted attempt to raise public demand for improvements, notwithstanding various newspaper articles and editorials (on average 10 per month).

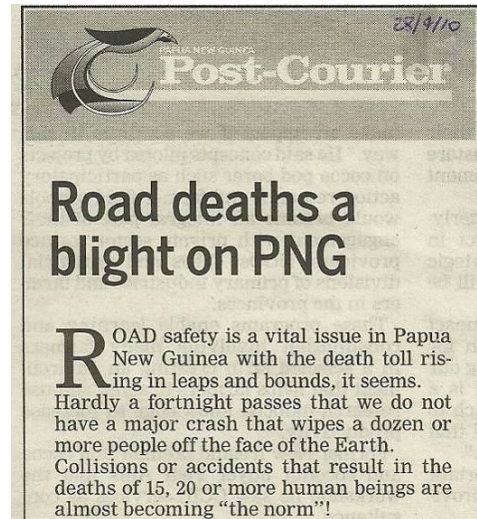


Figure 4.3 Lead editorial in the Post Courier indicating wider road safety concerns

4.7.1 National Advertising and Encouraging Promotion at the Local Level

As indicated previously, the NRSC Act specifically requires the NRSC to undertake road safety 'education' - which presumably also includes publicity as a form of education and raising awareness. Notwithstanding this role, the *WHO World Report on Traffic Injury Prevention* notes the following with respect to the role of education, publicity and information in terms of raising road safety awareness:

"Public health sector campaigns in the field of road injury prevention have encompassed a wide range of measures, but education has always featured as the mainstay of prevention. In the light of ongoing research and experience of the systems approach to road injury prevention, many professionals in the field have re-examined the role that education plays in prevention. It is clear that informing and educating road users can improve knowledge about the rules of the road and about such matters as purchasing safer vehicles and equipment. Basic skills on how to control vehicles can be taught. Education can help to bring about a climate of concern and develop sympathetic attitudes towards effective interventions... When used in support of legislation and law enforcement, publicity and information can create shared social norms for safety. However, when used in isolation, education, information and publicity do not generally deliver tangible and sustained reductions in deaths and serious injuries. Historically, considerable emphasis has been placed on efforts to reduce road user error through traffic safety education – for example, in pedestrian and cycle education for school children, and in advanced and remedial driver training schemes. Although such efforts can be effective in changing behaviour, there is no evidence that they have been effective in reducing rates of road traffic crashes."

Given the above, it is of particular concern to note that to date, education and publicity campaigns have almost entirely been in isolation without supporting enforcement. Indeed, comments made by MVIL with respect to their recent 'Road Safety is not a Game' campaign have repeatedly noted in the press that there is no real enforcement to back up the advertising - and yet, the campaign has still pressed ahead. Whilst it is acknowledged that broad awareness raising has to begin at some point in the process of improving road safety, the approach adopted in this instance would perhaps suggest that resources and funds could have been better spent in order to achieve more effective road safety outcomes. Similarly, given that no evaluation of the effectiveness of road safety campaigns carried out by the NRSC have been conducted in the past, the impact of such general NRSC community awareness campaigns is unknown – but can also be expected to be of limited value in terms of actually changing behaviour and improving road safety outcomes.

Where advertising is to be carried out, research is needed to determine what factors will help result in the desired behavioural changes. For instance, the 1990 TRL study on road safety research in PNG included funding for some market research on the public's attitude to alcohol and drink driving. Such approaches may again be required in order to better understand how publicity can be better used and targeted in order to encourage and promote a change in behaviour. This approach mirrors general good advertising guidance in terms of 'knowing your audience' and what motivates a particular behaviour and/or sought after change in behaviour.

As such, successful publicity campaigns require the identification of a problem to be addressed as well as the campaign to be fully planned in terms of target behaviour and audience, audience motivation, message content and media selection plus campaign timing and evaluation of the campaign. This detailed approach however also requires committed funding and a budget, particularly with respect to the actual advertising itself. More importantly however is the need for the education campaign to support a particular targeted enforcement campaign. This in itself requires the Police to take a lead and work with other agencies such as the NRSC to decide on specific risks on which to target their enforcement at different times throughout the year, rather than simply relying on vehicle inspections to catch general vehicle defect and licensing offenders. Using advertising on its own is unlikely to result in the desired road safety outcomes and such publicity should be only one part of a wider approach to improving safety e.g. involving enforcement etc. It is noted that to date, the NRSC for example have not planned any major awareness campaign based on the above good practice publicity campaign requirements in anticipation of receiving funding and should commence such activity.

Recommendation:

26. The Police, through the NRSC Board, and with NRSC Secretariat support to develop enforcement plans targeting various particular behaviour throughout the year, with NRSC to try and raise funding to develop supporting advertising campaigns. Coordinated awareness and enforcement campaigns must be carried out – with those agencies wishing to undertake major road safety promotional activities (e.g. MVIL) encouraged to work through the NRSC Board. As part of the above, a road safety calendar indicating enforcement and supporting advertising initiatives throughout the year should be developed to guide annual activities thereby also giving NRSC time to plan specific advertising campaigns based on good practice.

4.7.2 Specific Interventions/Target Groups

Examples and details of specific awareness campaigns that have recently been carried out in PNG are set down in Section 5.2.

4.8 Monitoring and Evaluation

Measuring progress towards set targets and desired results, for instance as set down in a national road safety strategy can take many forms. The World Bank guideline³⁴ notes that “good practice countries set quantitative outcome and intermediate outcome targets to achieve their desired results focus. They can also set related quantitative output targets in line with the targeted outcomes.”

Details of potential outcomes and outputs for future consideration are discussed below.

4.8.1 Final Outcomes – Crash and Casualty Data

Final outcomes relate to a reduction in the number of road deaths and injuries, which are primarily recorded by the Police.

As indicated previously, the NRSC are currently collating the Police reported crashes to allow final outcomes to be monitored on an annual basis.

Unfortunately, as highlighted earlier, success can be heavily impacted upon by Police reporting rates, as well as exposure. As such, efforts to improve reporting rates coupled with the expected high increase in motorisation may result in official crash and casualty numbers being reported to increase, despite funds being spent and interventions being carried out to actually address road safety. It should be noted that such ‘results’ often do not sit well with politicians given the perception that funds are being expended only to result in an increase in reported crashes. As such, this aspect needs to be carefully managed with respect to expectations. As part of this process, work is required to try and match police and hospital/health data to better understand how under-reporting may be impacting on the official casualty data results. Indeed, other countries actually consider hospital/Ministry of Health data as part of the monitoring of the final outcomes to better understand progress given the under-reporting rates of the police data.

Recommendation:

27. A future national road safety strategy to be developed incorporating final outcome targets.

4.8.2 Intermediate Outcomes

Intermediate safety outcomes are typically directly linked to changes in the final outcomes, for instance with respect to vehicle speeds at monitored sites, the percentage of drunk drivers in crashes or stopped at check points, and/or the percentage of vehicle occupants wearing seatbelts. Similarly, changes to community attitudes to road safety (similar to the survey commissioned by MVIL prior to the ‘Road safety is not a game’ campaign) and/or recall of advertising using interview surveys can also provide intermediate outcomes and indicate progress.

As well as such behavioural changes, it is possible to assess and survey other elements such as the overall safety of the road infrastructure and vehicle defects - the latter being based on

³⁴ Implementing the Recommendations of the World Report on Traffic Injury Prevention. 2009.

the number of faults found per the total number of vehicles stopped at a checkpoint (based on either all vehicles passing through the checkpoint being stopped or a truly random sample rather than likely looking faulty vehicles).

With respect to road infrastructure, it is noted that DoW already currently assesses the condition of their roads and rate them accordingly based on surface condition. In a similar manner, a technique has been developed overseas to provide a safety rating of roads. The International Road Assessment Program (iRAP) allows road networks to be 'rated' with respect to how well road users are protected from death or injury for common types of crashes and should be considered for the national road network.

Recommendation:

28. *A future national road safety strategy to be developed incorporating intermediate outcome targets which will define those targets to be monitored and provide funding for undertaking such survey work. Such monitoring may include vehicle defects – subject to suitable checking processes and data collection being adopted by those agencies charged with inspections as well as consideration by the DoW/NRA to fund an iRAP study of their network to establish the current road safety condition.*

4.8.3 Quantitative Outputs and Interventions

Outputs reflect the actual physical task that has been carried out or the deliverables as a form of performance measure. Examples of intervention outputs can include the number of safety intervention studies carried out and/or implemented, police hours spent and/or tickets issued for a specific targeted enforcement initiative (e.g. speeding or drink-driving) or the number of vehicles inspected. To date, no such easily measurable output related directly to road safety exists with the possible exception of the number of school based education visits carried out by NRSC/Police.

Such performance monitoring outputs are tasks and elements that need to be carried out by the individual stakeholders to demonstrate their actions to improve road safety. Internal processes to collect and collate such data are therefore needed within those organisations contributing to road safety.

Recommendation:

29. *Outputs to be monitored to be agreed by way of an MOU between the NRSC Board and the various implementing agencies.*

4.9 Research and Development/Knowledge Transfer

An effective road safety research program requires an accident database as a basis for any study given the need to understand problems, and to allow comparisons to be made with respect to evaluating and assessing the impact of any measures that have been introduced to improve road safety. As the ADB Guidelines³⁵ note, *"measures that have been successful in developed countries may not always be as successful in the developing world because of the different social culture and economic circumstances in developing countries. It is, therefore, necessary to carry out country specific research to identify measures that may be useful in the developing world."*

³⁵ ADB Guidelines for Improving Road Safety in Asia Pacific Region

Carrying out research and/or helping coordinate research by appropriate bodies such as universities and/or in the case of PNG, the National Research Institute is specifically noted as a NRSC task in their Act. As such, opportunities exist for the NRSC to undertake the analysis of accident data, undertake survey work and to carry out research. Furthermore, where appropriate, funding permitted, scope exists to encourage and commission appropriate research institutions to carry out additional research work with the NRSC helping to coordinate activities to ensure research is directed at appropriate topics and specific areas of concern/interest.

4.9.1 Road Safety Research Organisations

Whilst a National Research Institute and a number of Universities exist (including two Universities on the current NRSC Board), no formal road safety research program or strategy exists. Notwithstanding this, it is noted that some adhoc research has been carried out – for instance by the Emergency Department of Port Moresby General Hospital in 2010 with respect to fatal and seriously injured road accident casualties over a seven month period in 2009, as well as older research carried out in the 1980s/1990s by TRL with respect to the Highlands Highway (see Section 5 of this Discussion Paper). A number of academics have also published papers relating to road safety in the PNG Medical Journal in the past.

4.9.2 Training and Professional Exchange – Developing Capacity

Discussions with a range of organisations that are or should be involved in road safety suggests a general lack of local capability or awareness with respect to road safety good practice – from both a management and technical perspective. Whilst individuals in some organisations may have some knowledge of road safety issues and their role to play in making a difference, to date little serious action has taken place. Whilst part of this may be due to a lack of funding, for instance the lack of vehicles and equipment for the Police, it also stems from a lack of basic knowledge of road safety activities. Examples of this are shown by the fact that the crash reduction study carried out recently at a known hazardous location in NCD following the arrival of the AusAID TSSP Road Safety Adviser was a new process to those that took part in the exercise. Similarly, it is still possible for the Police to enforce speeding vehicles without ‘speed guns’ by carrying out very basic measurements of the time a vehicle takes to travel between two known fixed points using a stop watch – and then calculating average speed in terms distance divided by time (see Section 5). Such activity however is not carried out.

Given both funding and knowledge constraints, there is a strong need to establish good practice guidelines and to work with the various organisations responsible for implementing road safety interventions. In line with the World Bank guidelines³⁶, this can best be achieved by ‘learning by doing’ with support through technical assistance. The World Bank guideline notes that *“in situations where road safety management capacity is weak, strong reliance will be placed on recruiting external technical assistance support to help guide project implementation...emphasis should be placed on providing a more process orientated style of technical assistance where external experts work alongside local staff to help accelerate knowledge transfer and engender institutional capacity strengthening of a more sustainable nature.”*

³⁶ Implementing the Recommendations of the World Report on Road Traffic Injuries

The focussing of road safety activities and interventions along routes of particular concern i.e. where crashes are known to occur and hence where interventions will have the biggest impact, and using these as demonstration projects utilising all road safety agencies and a range of techniques can help develop sustainable local skills and confidence.

Recommendation:

30. *Subject to implementing agencies receiving sufficient funding, consider setting up a demonstration project involving engineering, enforcement and awareness road safety activities for a specific length of road. This for instance, could be part of the ADB funded Highlands Region Road Improvement Investment Program.*

4.9.3 Dissemination of Data

Whilst accident data up to 2001 has been provided on the NRSC website based on the Police collated data, no further accident information has been made widely available. The recent Government of PNG Development Budget funded accident database project however will allow more detailed and recent accident information to be made more widely available – for instance through annual data reports as well as in reports setting out the road safety issues for the country (as well as different provinces). Such information can be easily made available on an updated NRSC website as well as directly to relevant organisations and agencies.

Although not provided to date, the NRSC website also allows scope for a great deal of other information to be provided, for instance the details contained in the Motor Traffic Handbook, links to other relevant road safety sites, as well as education and awareness tips.

In due course, scope may also exist to hold annual conferences involving PNG stakeholders to report back on their road safety activities in order to help better share information amongst interested parties, with an aim of demonstrating impact and adherence to actions identified in any future national road safety strategy.

Recommendation:

31. *NRSC to ensure accident data is updated and available on its website as and when data is available, along with hard copies being made printed and sent to relevant agencies/authorities. NRSC to also ensure suitable road safety advice is set out on its website.*

5. Road Safety Interventions

As shown in Table 5.1, road safety interventions can be targeted at all three elements that can contribute to a crash: the road user (human), vehicle and road environment. Furthermore, interventions within each of these broad elements can have an impact in reducing the number and/or severity of an accident during the three phases of a crash: prior to, during and post crash. Sections 5.1 to 5.4 are intended to provide comment on the extent to which various road safety interventions are applied and implemented in PNG with a focus on how aspects can be improved and enhanced. Where appropriate, further details on specific issues that have been identified as likely factors in crashes in PNG have been provided.

Element	Interventions		
	Before Crash	In Crash	After Crash
Human	Training Education Behaviour Attitude Conspicuous clothing for pedestrians/cyclists	Seatbelts/restraints	Emergency medical services
Vehicle	Primary safety – e.g. brakes, roadworthiness, visibility, lights Speed Exposure	Secondary safety – impact protection (airbags)	Salvage
Road	Delineation Road geometry Surface condition Visibility Safety Audit	Roadside safety (e.g. clear zones, frangible posts) Road safety barriers	Restore road/traffic devices

Table 5.1 Haddon Matrix³⁷

Research from a number of developed countries indicates that road user behaviour is a key element in way crashes occur (see Figure 5.1). The extent to which this same breakdown of crash causes is true for PNG is debatable, particularly given the local perception that vehicle defects are more common than perhaps elsewhere. However, a preliminary assessment of reported accident data for 2007 suggests that approximately 10% of crashes involved a defective vehicle – not too dis-similar to that shown in Figure 5.1.

³⁷ Ogden KW. Traffic Engineering and Management

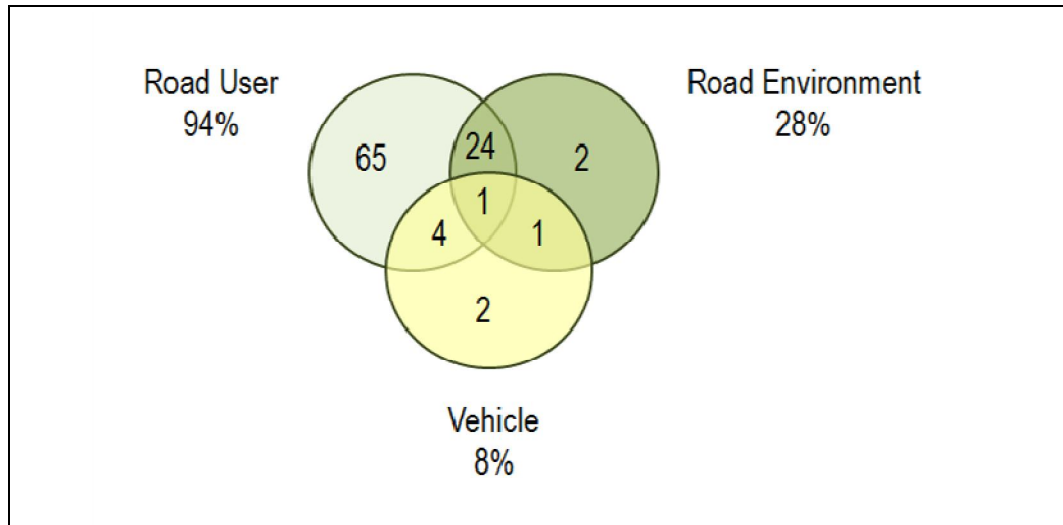


Figure 5.1 Percentage Share of Crash Causes³⁸

A key element to note, however, is that simply identifying key factors in a crash does not necessarily equate to the most appropriate cost-effective and immediate solution to the problem. For instance, whilst road user behaviour is a major factor in crashes compared to the road environment, the appropriate design of the road can strongly influence road user behaviour, and therefore has a major impact on road safety. As such, engineering improvements are often cheaper, simpler, more immediate and sustainable in reducing crashes than driver training or using education, legislation and enforcement to alter road user behaviour. This of course does not discount the need for interventions outside of engineering improvements and many interventions work best when all three aspects of enforcement, education and engineering are brought together and applied at the same time to complement each other.

5.1 Planning, Design and Maintenance of the Road Network

The design, management and maintenance of the road network is the responsibility of the various road controlling authorities that control that particular section of road (e.g. DoW, NRA, NCDC etc.). Subject to funding, they have the executive power to directly control and influence the infrastructure that is provided and hence ensure (or not) that a safe road environment exists. As indicated previously in Chapter 4, observations to date have typically indicated a lack of genuine consideration and focus on safety issues by road controlling authorities. Whilst part of this may be due to a lack of in-house skills or funding, generally little attempt has been sought to address safety problems through external means and/or to obtain specific funding to improve road safety. For example, no specific funds are set aside (or have been sought by DoW through the development budget process) for road safety treatments to address black spots.

Similarly, whilst the NRA is noted as taking over responsibility for a number of roads from DoW following the roads being brought up to a 'good' standard, there seems to be no formally agreed understanding on whether this simply refers to the surface condition or whether it

³⁸ Ogden KW. Traffic Engineering and Management

deemed as being in a safe condition – for instance through having had a road safety audit conducted with identified deficiencies addressed prior to hand over.

The lack of existing capability in terms of skills and experience with respect to road safety engineering in PNG within many road controlling authorities is noted and acknowledged. There is therefore a need to develop knowledge and capacity in this particular specialism as well as the basics of designing a road and the pavement structure.

5.1.1 Road Design Standards and Rules

Geometric Design

It is noted that the draft Roads (Classification and Standards) Regulation 2010 to be made under the NRA Act allows for the NRA to set a hierarchy of roads and to specify the necessary standard to which they must be designed, constructed and maintained to. At present, a number of different design guides are used by various road controlling authorities such as DoW (Queensland Main Roads standards as well as DoWs own internal Road Design Manual) and NCDC (Austroads Traffic Guidelines). A single set of standards for road design based on route hierarchy as proposed in the draft Regulations is supported by the NRSC as a way to help ensure roads are appropriately designed based on intended road users (including pedestrians) and to provide a consistent level of expectation for those road users, thereby helping ensure roads are fit for purpose. Road design is critical to safety given that appropriately designed roads can strongly influence driver behaviour.

It should be noted however that simply taking standards from overseas may not always be appropriate for PNG. For instance, research reported in Highway Design Note 2/01: Horizontal Curves³⁹ makes the recommendation that design standards that include transition curves – favoured in many developed countries, should not be used as they encourage higher approach speeds.

Recommendation:

32. *Following the passing into law of the Roads (Classification and Standards) Regulations 2010, broad consultation will be needed to develop and agree a single set of design standards for use in PNG. It is presumed that NRA will take the lead on this matter given that the Regulations fall under the NRA Act.*

Traffic Signs and Pavement Markings

Part XI of the Motor Traffic Regulations sets out the design and layout of a number of authorised traffic signs and road markings. These ‘regulatory’ signs and markings are traffic control devices that must be obeyed by road users and are legally enforceable. It should be noted that not all signs need to have a regulatory basis in terms of enforcement and fines. However, the Motor Traffic Regulations makes no direct consideration of such ‘warning’ and ‘guide’ types of signs – other than noting that the Superintendent of Traffic may authorise the use of signs contained in PNG Standard PNGS1151 (see below). Fines of up to K100 can be imposed for failing to obey traffic signs and up to K50 for not obeying road markings (with the exception of a ‘stop’ line where a fine of up to K100 can be imposed).

³⁹ TRL/DfID Cost and Safety Efficient (CaSE) Design for rural highways in developing countries. Highway Design Note 2/01: Horizontal Curves.

As indicated above, the Regulation makes reference to a PNG Standard – PNGS1151 Manual of Uniform Traffic Control Devices and notes that the Superintendent of Traffic may authorise the approval to use signs set out in the Standard. It should be noted that the above standard is actually Australian Standard AS1742 – i.e. there is no actual separate PNG Standard. It is suspected that in many cases, the Superintendent's approval to use non-authorised signs is not sought, especially given the broad array of signs that are observed alongside the road network coupled with the limited number of authorised signs.

A review of the traffic signs prescribed in the Regulations indicates a mix of styles compared to standard practice elsewhere overseas. Typically, sign shapes and colours are used to indicate the type of sign being used: regulatory, warning, guide types etc with a generally consistent set of shapes and colours used for each type of sign. At present however, the defined sign shapes and colours used for some of the regulatory signs typically reflect those that are used for warning signs (a yellow diamond shape) overseas e.g. in Australia and New Zealand. Given the existing mix of sign shapes/colours to denote regulatory signs, the use of signs from the Australian Standard has the potential to confuse road users further with respect to which signs are mandatory and which are advisory.

In addition to the above, some of the specifications set out in the Regulations are inconsistent (e.g. permitting the use of a 'stop' line but not a give way line) or may limit the effectiveness of the signs and markings – for instance by simply defining a single set sign size (rather than a minimum size) given that larger signs which are typically used in higher speed locations are not automatically approved for use. Furthermore, no set specifications regarding the type of material to be used on road signs and/or for road markings exist (e.g. in terms of reflectivity), although it is understood that signs are often imported from Australia and are ordered to the same minimum material specification as used in Australia.

The Motor Traffic Regulations also note that only the Superintendent of Traffic, or a person with delegated responsibility, can install (or remove) a traffic sign or road marking. As such, unless appropriate delegation has been given - for instance to each road controlling authority (e.g. NRA, DoW, NCDC etc), the Superintendent must approve each individual sign and marking installed on the road. It is unclear whether such delegation to other people within the Department of Transport or to relevant positions within road controlling authorities has ever been given. This is clearly an anomaly that needs changing as part of any review of the signs and marking section of the Motor Traffic Regulations.

Notwithstanding the above issues, it is not clear as to the extent to which traffic signs and road markings are understood in PNG. Preliminary survey work carried out by the NRSC has indicated a poor level of understanding of the meaning of various signs. It should be noted that the present Motor Traffic Handbook provides examples of only a limited number of signs, and in many cases, doesn't explain the significance/meaning of the sign e.g. a regulatory 'hospital' sign (using a yellow diamond warning shape) simply signifies that a driver should not make any unnecessary noise. As such, greater road user awareness and understanding of the meaning of signs and markings may be necessary prior to simply installing such additional traffic controlling devices in the hope of reducing the number of crashes. TRL⁴⁰ research from the Highlands Highway however does note how effective some signing (that doesn't require a particular message to be understood but which intuitively provides guidance on how the road

⁴⁰ Hills B, Baguley C and Kirk S. Cost and Safety Efficient Design Study of Rural Roads in Developing Countries. TRL

alignment changes) can be. The research indicates a 50% reduction in head-on, sideswipe, overturn and run-off road type crashes following the installation of reflectorised chevron boards at a series of bends on a steep descent on a section of the road between Goroka and Kamilika Creek in the 1980s and 1990s.

It is also noted that no single consistent set of guidance exists with respect to the installation and use of traffic signs and road markings. For instance, whilst the Regulations refer to the PNG Standard (Australian Standard), NCDC noted that they used the Austroads Traffic Guidelines. Differences also exist between the Australian Standard and actual signing and marking requirements of some of the States in Australia. As such, any standards used by DoW based on the Queensland Main Roads design standards may differ slightly from those set out in AS1742. Furthermore, observations of differences in design standard and actual installation has been made – with both single and double barrier lines to denote no-overtaking sections being used on various parts of the Hiritano Highway.

Recommendation:

33. *Undertake a complete overhaul of the traffic signs and markings in the Motor Traffic Regulations and provide suitable guidance to designers on the use of such traffic control devices – for instance by reference to a single standard such as AS1742 including reference to material specifications.*

5.1.2 Improvement of Hazardous Locations (black spots)

The lack of an operational accident database in which to interrogate crash data has been just one of many limiting factors that have prevented the identification of hazardous locations (black spots) throughout PNG. Whilst some adhoc attempts to identify crash locations and their common causes have occurred (e.g. the Okuk Highway: Wau Junction – Kainantu Road Crash Study in 2003 by the University of Technology and NRSC; and the Poreporena Freeway Crash Reduction Study in 2010 led by the NRSC), no serious attempt by road controlling authorities has been made to develop and implement an annual program aimed at providing low cost engineering improvements at known accident sites or routes. Similarly, road maintenance projects currently take little account of accidents that may have occurred over the length of road being repaired/rehabilitated, despite the fact that such data may help re-prioritise treatments and/or allow for additional minor treatments to be included and costed as part of the road improvement work.

The current development and updating of the accident database should allow road controlling authorities in the future to identify hazardous locations on the road networks under their control, as well as to identify common contributory factors in the crash. Crash reduction studies at such hazardous locations (black spots) on the road network are common elsewhere in the world and should be similarly carried out in PNG. This approach however requires a commitment from road controlling authorities in particular to address road safety issues and to set funds aside to improve dangerous sections of road once problems have been established and mitigating treatments have been identified and recommended.

Recommendation:

34. *Following the set up of the accident database to allow the past 3 - 5 years worth of crash data to be analysed, NRSC to identify the top 25-50 hazardous locations on the road network. Following this, NRSC should approach relevant road controlling authorities with a view to undertaking crash reduction studies (in conjunction with local engineers, the*

Police and other interested parties) to identify contributory factors and possible solutions for the road controlling authority to implement. It is imperative that a range of people and organisations be involved in the process in order to maximise awareness and increase local capability through hands-on experience, and that the road controlling authorities ensure funds are available to implement identified treatments.

5.1.3 Safe Planning and Design of Roads

A safety conscious approach to the planning and design of roads, taking PNGs current road user behaviour into account, is essential in order to reduce the number and severity of crashes. Whilst road user behaviour is typically the main contributory factor in the majority of crashes (see Figure 5.1) the appropriate design of roads has a major role to play by influencing driver behaviour. Indeed, appropriate road designs can be “cheaper and easier to effect than training the driver to the necessary degree of skill”⁴¹.

Of course, the need to balance safety with cost is fully acknowledged. As part of this, it is noted that the DoW internal Road Design Manual contains a section on incremental cost benefit analysis – although it is doubted that such a tool is currently used. Accordingly, there is a need for road designers to carefully consider all aspects of their design and to consider all road users.

Planning Issues

Planning can assist in minimising conflicts between different types of road users (e.g. motorised traffic and pedestrians) and different types of movements/trip purposes (e.g. long distance through traffic mixing with local traffic). Safe planning can be assisted through the use of an agreed road hierarchy with associated design principles/standards, land use zoning considerations and access control (i.e. preventing direct access onto major roads). It is acknowledged that whilst some controls do exist, their effectiveness and the extent to which they are enforced is haphazard.

It should be noted that the draft Roads (Classification and Standards) Regulation 2010 being put forward under the NRA Act intends to try and allow roads to be classified into a simple hierarchy of national, provincial and local level roads along with associated design standards. The passing of the above Regulation and the subsequent work in developing a road hierarchy and standards in conjunction with other road controlling authorities should assist in safer network planning, subject to those controls being followed and obeyed.

Opportunity also exists for those existing and proposed roads forming the economic corridors set down in the Development Strategic Plan to be appropriately developed to take account of safe planning issues, for instance the suitable design of roads through small communities to cater for reduced vehicle speeds and/or preventing unplanned accesses onto the road from being formed.

At present however, a number of examples of poor road planning i.e. without due consideration of all road user requirements, exist - resulting in a less safe environment for all road users. For example, the design of the Poreporena Freeway is such that it cuts across a number of strong pedestrian desire lines, such as in the vicinity of Wards Road - resulting in high speed

⁴¹ Ogden KW. Traffic Engineering and Management. 1996.

eastbound vehicles heading down the hill from Burns Peak coming into potential conflict with crossing pedestrians given the lack of any type of appropriate pedestrian facility. It can be expected that similar issues also exist throughout the country.

Design Issues

Road design elements that impact on safety include:

- Cross-section
- Sight distance
- Curves/superelevation-
- Speed limits
- Road signs/markings
- Drainage
- Road side obstacles
- Safety barriers
- Lighting
- Bus stops/lay bys
- Intersection design
- Pedestrian (and cycle) facilities
- Traffic Management including speed control

It is noted that at present, design standards from different overseas sources are used. These however may not be specifically relevant to PNG, for instance due to differences in levels and types of traffic, driver training, awareness and enforcement. Notwithstanding this, research in a number of developing countries, including PNG has already been carried out with respect to those aspects of road planning and design where safety can be incorporated at minimal additional cost⁴². As part of this, a number of Cost and Safety Efficient (CaSE) design notes have been prepared by TRL specifically relating to drainage channels, horizontal curvature, vulnerable road users and roadside/village/ribbon development. It is suspected however that few road controlling authorities and/or road designers in PNG are aware of such documents.

Of particular interest from the above CaSE notes (as well as the original TRL study report that they are based on) are the references to PNG and road safety remedial work on the Highlands Highway in the past. Comments and recommendations made within the study report and subsequent design notes include the following relevant guidance:

- The existence of an isolated single sharp (i.e. 90 degree) bend along a road section with a narrow shoulder is the strongest geometric predictor of accidents and is a major factor in overturn, head on and sideswipe type crashes. Where it is necessary to construct or retain such bends, warning devices (e.g. signs) 'should be radically over designed to alert the driver.'
- 'Overturn' accident rates were found to fall with increasing shoulder widths up to approximately 1.5m. However, accident rates increase with further increases in shoulder width above 1.5m – this is primarily related to widened shoulders on the approach to urban areas and/or where the road runs through small communities with overturn

⁴² Hills B, Baguley C and Kirk S. Cost and Safety Efficient Design Study of Rural Roads in Developing Countries. TRL. 2002

crashes in such locations being due to a manoeuvre to avoid another vehicle; whereas speed or loss of control type accidents occurred on rural sections. As such, care is needed with respect to the design of shoulders on the approaches to towns/village centres to ensure widened shoulders aren't used as a third traffic lane.

- Where sufficient pedestrian activity warrants it in rural areas, the construction of 1.5m wide segregated footpaths would be highly cost-effective – indeed, research from the Highlands Highway notes that simply providing wider shoulders showed no evidence of any benefit for pedestrians (although improved safety records were recorded for such facilities such as in Tanzania). The construction of a 10km section of segregated footpath on the Highlands (Okuk) Highway indicated that pedestrian casualties were significantly lower than on those sections without a footpath, with a 400% to 1000% first year rate of return (FYRR) based on accident cost savings/annum/km.
- Where shoulders are provided and intended for pedestrian use, sealed shoulders should ideally be a different colour from that used for the running surface and well maintained solid edge lines should be used at the edge of the running surface given the research indicates that the wider the shoulder width, the greater the pedestrian accident rate – presumably due to drivers perceiving the road to be wider with a corresponding increase in speed.
- The sealing of 15km of unsealed road on the Highlands Highway caused a rise in the number of fatal and hospitalised accidents from 3 in 7 years (0.43 per year) to 10 in four years (2.5 per year). This is particularly relevant at present given the maintenance and rehabilitation work being carried out throughout the country without due consideration of the impact that such work will have in terms of increasing vehicle operating speeds.
- The installation of a chevron boards on bends on a section of Highlands Highway with a large number of single vehicle night time crashes helped reduce accidents by over 40% and had a high cost benefit return.
- Painting yellow bar patterns on the approaches to single lane bridges (which are often preceded by a sharp bend) on the Highlands Highway reduced accidents by at least 25%.

Recommendation:

35. *Lessons learnt previously need to be more widely distributed to road controlling authorities and their designers, with road designs/rehabilitation work being subject to road safety audits – see below.*

Road Safety Audits

Austrroads⁴³ guidelines describe a road safety audit as *"a formal examination of a future road or traffic project or an existing road, in which an independent, qualified team reports on the project's crash potential and safety performance."*

In other words, proposed designs of new or rehabilitated roads should be reviewed with specific regard for safety issues, with potential problems identified and recommendations made for the

⁴³ Austrroads. Road Safety Audit. 2nd Edition. 2002.

designer to consider prior to construction. Designs can be reviewed at a number of stages during the design process: feasibility, preliminary, detail and pre-opening. Similarly, existing roads can be assessed for potential safety problems - that may or may not have identified through crash data. Such approaches are pro-active attempts to prevent accidents from occurring. To assist audit teams, road safety audit procedures with checklists identifying the design elements that need to be considered have been developed in a number of countries and are available for use. However, it is inappropriate to simply rely on the checklists; auditors should be properly trained and be experienced in road safety engineering.

Few, if any, road safety audits are currently being carried out in PNG although the NRA Act does stipulate that road improvement and rehabilitation projects should be safety audited. A recent meeting with NRA indicated their intention to engage a consultant to undertake an audit of the final design of the Lea to Nadzeb road improvement project. In addition to the above, recent discussions between DoW and NRSC have identified the possibility of including a standard clause in future design contracts relating to the responsibility of the design consultant to organise and undertake an independent road safety audit of the design. As such, this approach has been adopted as part of a recent design tender for a section of the Enga Highway between Wapenamanda and Wabag. The use of formal road safety audits is strongly supported by NRSC.

Road safety audits have been shown to be an effective and cost efficient way of improving road safety – in New Zealand, they have been estimated to have a cost benefit ratio of 1:20. As such, the mandatory use of road safety audits, for instance them being a requirement of government funding or road controlling authority policy, exists in a number of countries. The mandatory requirement for undertaking safety audits in the NRA Act in PNG is noted and supported. However, a lack of qualified and/or experienced auditors can be expected to exist in PNG - suggesting that such work may need to be carried out by overseas companies (or overseas offices of international consulting organisations already based in PNG) in the first instance. Where this occurs in the future, opportunity should be taken to involve local staff from various organisations (e.g. DoW, NRSC, NCDC) in order to expand our local skill-sets and understanding as well as to gain hands-on experience.

Recommendation:

36. *DoW to develop and implement a policy requiring all road projects (including maintenance and rehabilitation) over a certain amount to be road safety audited.*
37. *Road Controlling Authorities such as NRA, DoW and NCDC, when employing auditors, to ensure local staff from other organisations are involved in the process to gain experience/increase exposure.*
38. *Consideration should be given to requiring all road projects with government funding over a certain amount to be road safety audited at appropriate stages of design, taking account of the complexity and cost of the project.*

5.1.4 Maintenance

A regular 'safety inspection' of the road network by road controlling authorities is essential in order to help ensure that minimum safety standards exist. Such inspections should not just relate to the condition of the road surface/pavement drop off, but should also consider the condition and appropriateness of the following elements that help make up a safer road:

- Traffic signs and road markings
- Lighting
- Road safety barriers
- Other 'Traffic Control Devices' (e.g. raised traffic islands)
- Vegetation
- Drainage

As part of such inspections, it is vital that road controlling authorities such as NRA and DoW etc. have an inventory of all their traffic control devices such as signs and markings, indicating their location, type, size, year of manufacture/installation so that missing devices can be easily identified and an appropriate replacement installed. At present, the DoW do not have such an inventory, although the road condition video survey of the network that is currently being tendered on should allow the location (and potentially the condition) of existing devices to be captured. It may not however be possible to easily identify where traffic control devices should be provided but currently aren't.



Figure 5.2 Poorly maintained yellow bar markings on the Hiritano Highway

It is noted that NCDC have indicated that they have started to develop an inventory of their signs and markings, however, the extent and progress to which this has been carried out to date is unknown.

It should be noted that safety inspections, and the subsequent upgrading of identified problems do not currently appear to be a regular occurrence on the wider road network in general.

Recommendation:

39. Road controlling authorities through their asset maintenance activities broaden their consideration beyond simply reviewing the road surface and take safety into account in future road inspections. This in turn requires assets and their condition to be documented in an asset inventory.

5.2 Road User Behaviour and Compliance with Rules

5.2.1 Speed Management

Research⁴⁴ indicates a significant relationship between mean speed and the risk of a crash, with an increase in the severity of a crash as vehicle speeds increase. Excess and inappropriate speed contributes to 30% of fatal crashes in highly motorised countries, whilst research indicates that pedestrians have a 90% chance of surviving a crash when hit at 30km/h but less than a 50% chance when hit at 45km/h or above. At 60km/h, the current legal speed limit in urban areas in PNG, the probability of a pedestrian being killed when hit by a vehicle is over 90%.

⁴⁴ Source: WHO World Report on Traffic Injury Prevention

Extent of the Problem and Background Data

Crash data analysed between 1987 and 1994 for PNG indicates that 17% of all accidents, and 22% of fatal, hospitalisation and injury accidents (i.e. excluding damage only) involved excessive or inappropriate driver speed. Preliminary results for 2007 indicate a similar proportional split albeit with speed being reported as a factor in 29% of fatal accidents. (It should be noted that this data is based on Police reported crashes and the individual Officer's opinion on whether speeding was a factor in the crash. As highlighted previously, Police officers are generally poorly trained with respect to traffic and safety, and as such, the data should be treated with caution.) The 2009 study of road crash casualties at the Port Moresby General Hospital Emergency Department suggests that over 60% of crashes were a result of high speeds – based on comments by casualties and witnesses.

The extent to which drivers obey speed limits in urban and/or rural situations is unknown due to a lack of any speed survey data on roads around the country. Observations and anecdotal evidence however suggest that on many main roads, set speed limits are poorly observed and often exceeded. As discussed below however, this may be a result of poorly set speed limits without due consideration of the surrounding road environment and a lack of repeater (or reminder) speed limit signs alongside the road as well as a lack of any enforcement.

Legislation and Enforcement

The Motor Traffic Act 1950 indicates that both inappropriate (too fast for conditions, but within the speed limit) and excessive (in excess of the speed limit) speeding is an offence.

Specifically, Section 17(1) of the Motor Traffic Act states that '*a person who drives a motor vehicle on a public street negligently, furiously or recklessly, or at a speed or in a manner that is dangerous to the public, is guilty of an offence*' with a fine of between K15 and K200 and/or up to 6 months imprisonment with an automatic disqualification of the drivers licence of up to 3 months for a first offence and 12 months for subsequent offences. (It should be noted however that the legislation requires any offence committed under the above Section has to be considered in light of the '*nature, condition and use of the street*' as well as the amount of traffic using, or likely to be using, the street on which the offence occurred.)

In addition, Section 29(2) of the Motor Traffic Act states that '*a person that drives a motor vehicle on a public street or a part of a public street, or in an area, specified in a notice under Subsection (1) at a speed greater than the speed permitted by the notice is guilty of an offence.*' Subsection (1) referred to above indicates that the Minister may set speed limits by notice in the National Gazette. The maximum fine for exceeding the gazetted speed limit is K500.

Furthermore, Part XII, Section 133 of the Motor Traffic Regulations 1967 stipulates that unless signed otherwise, the maximum permitted speed of travel '*in a town*' is 60km/h and 75km/h '*outside a town*'. The maximum fine for exceeding these speed limits is K100. As such, legislation indicates that standard speed limits in urban and rural areas exist with only the Minister, rather than say the road controlling authority, able to set alternatives. Whilst simply changing the speed limit, including the signs (without accompanying measures) has little impact on changing actual operating speeds, the opportunity for reducing speed limits as part of an overall network approach to speed management is therefore cumbersome and reliant on Ministerial approval. As such, it is noted that speed limits other than the default 60km/h and 75km/h are rarely used. For example, the speed limit on the Poreporena Freeway is 60km/h

despite this being originally designed and used as a major arterial road connecting built up areas within Port Moresby. The lack of adjacent roadside development along with current operating speeds would perhaps suggest that the current speed limit lacks credibility, making it difficult to enforce, and that a higher speed limit along this section of road may actually be more appropriate when taking both efficiency and safety into account.

The Regulations also stipulates that drivers should not approach or travel through an intersection at a speed greater than 25km/h (Section 134 of the Regulations). This speed limit applies to both urban and rural locations. Similarly, the maximum speed limit past a school or school/children's playground when children are entering/leaving the school or playground is 25km/h provided that the school or playground is adequately signed in order to provide sufficient warning to approaching drivers (Section 135 of the Regulations). The maximum fine for exceeding the above speed limits is K50.

Section 129(j) of the Regulations also notes that a person that drives a motor vehicle on a public street in excess of the speed limit indicated on a speed limit sign is guilty of an offence. Sections 129(k) and 129(m) also note that the maximum speed at a pedestrian crossing and/or a children's crossing (that is appropriately signed) is 25km/h. The maximum fine for exceeding the above speed limits is K100.

Whilst the above range of speed limits tries to take account of roads passing through high risk areas in terms of pedestrian/children activity, it can be expected that knowledge of such speed limits is typically unknown by drivers. Furthermore, speed limit signs are generally not located at such locations to help reinforce the lower speed limit. With respect to the reduced speed limits through intersections, whilst in theory this a safe practice as the reduced speeds minimise the severity of intersection crashes, the reality is that drivers do not and will not obey this rule – even if it was known about and enforced, given that its highly impractical. The setting of speed limits is typically a balance between safety and mobility and as such, this approach of setting speed limits through intersections perhaps demonstrates over-regulation of speed management given the impracticality of such a legal requirement.

Notwithstanding the relatively low speed limits in rural areas, no different maximum speed limit for heavy vehicles or learner drivers for example exists. It should be noted for completeness though that emergency services carrying out an urgent duty are exempt from speed limits subject to appropriate warning being given to enable other vehicles to make way for the emergency vehicle.

In the recent response to the 2008 Global Status Report on Road Safety organised by the WHO, speed enforcement effectiveness was rated as being 1 out of 10 (where 0 was 'not effective' and 10 was 'highly effective') by PNG representatives – which included the Police.

In terms of sanctions against speeding drivers, as well as fines being extremely low, the current penalty system does not take into account the amount over the speed limit that the driver is travelling. It is also suggested that the number of different fine levels set within the Regulation also makes prosecution (if this ever occurred) overly complex.

Section 46 of the Motor Traffic Act notes that prescribed speed or time-measuring devices that have been accurately calibrated may be used as speed enforcement equipment without question (*prima facie*). As such, Section 136 of the Regulation makes specific reference to only

two types of measuring device. It is understood that the Police originally had speed guns, but these have fallen into disrepair and are no longer maintained/calibrated due to the lack of a trained technician. Unfortunately, the two types of speed measuring devices noted in the Regulation are no longer manufactured and as such there is a need to update the Regulation to better reflect more recent technology on the basis that it is hoped that such equipment will be purchased in due course⁴⁵. As such, the NRSC is currently in the process of identifying suitable equipment that could be included in a revision to the Regulation for future consultation with the Police and the DoT.

Notwithstanding the naming of two prescribed speed measuring devices, the legislation does not prevent other methods of speed enforcement as long as a trail of evidence to support any prosecution is provided. Given current funding constraints noted by the Police, the cheapest and most simple method of measuring average speeds is to use a stop watch to record the time for a vehicle to travel between two fixed points that are at a known distance apart. Indeed, this simple and cheap method of speed enforcement was recently recommended as one of the outcomes from the crash reduction study for the Poreporena Freeway given the lack of other equipment. To date however, the Police have not taken up such a suggestion.

Engineering Measures

In addition to legislative and enforcement issues associated with speed management, other tools to influence speed include engineering and promotion/community awareness. Engineering treatments (traffic management/calming devices) can be particularly effective, for instance on the approach to, and through villages along rural highways, as well as within major urban areas - for example with high pedestrian activity.

Of particular concern to note is that in some instances, traffic calming devices have been installed by local villagers rather than by the road controlling authority engineers. Whilst this should give an indication to those road controlling authorities that the local community perceives speed to be an issue, little genuine attention to the problem is given. As a result, communities can be expected to continue to act in the current way – resulting in potential problems such as unsigned road humps which pose a particular problem to the unwary driver, particularly at night, and/or a trench dug in the road having a major impact on road pavement foundations.

It should be noted that concerns do exist with respect to using some traffic calming devices in PNG due to the security issues as such measures can assist with hold-ups. Careful thought and application is therefore needed when engineering solutions are being proposed to speed related issues.

Promotion

Whilst social marketing and public education of the effect and impact that speeding has is important, the GRSP document, Speed Management: a road safety manual for decision makers and practitioners notes that *“research and evaluation studies present mixed findings about links between extensive public education and the risks associated with speeding, and subsequent changes in driver speed behaviour. The general conclusion is that mass media road safety campaigns can change knowledge and attitudes but there is limited evidence that*

⁴⁵ The cost of a standard hand held radar speed gun is in the order of AU\$2,500 (excluding GST) whilst ongoing annual calibration can be arranged in Australia for AU\$250 per speed gun. Source: email between Britax Automotive Equipment and NRSC September 2010.

they change behaviour in the absence of accompanying enforcement.” It is noted that one of the recent MVIL ‘Road Safety is Not a Game’ themes relating to speeding is not backed up with any credible enforcement and as such, it is unlikely that driver behaviour as a result of the campaign will be altered.

Given the above, the importance of effective and targeted enforcement campaigns cannot be overstated. This in turn clearly highlights the need for police to be appropriately equipped and trained. As indicated in the above GRSP document, *“without substantial, and often expensive, traffic calming works, it is necessary to recognize that speed limits without enforcement and enforcement without suitable sanctions usually result in ineffective speed management. Consequently, speed enforcement and sanctions will generally always be needed to ensure compliance with speed limits.”*

Recommendation:

40. *The existing legislation with respect to the setting of speed limits and its enforcement needs to be updated and consolidated with respect to the legal responsibility for setting and denoting speed limits, defining sanctions for those that break the speed limit and equipment specifications for enforcement. Such a review should also consider the maximum default speed limits – for instance the potential to reduce urban speed limits to 50km/h whilst allowing for other higher speed limits to be set along specific urban routes and corridors.*
41. *Re-equip and train the Traffic Police to use speed measuring equipment for enforcement purposes. Equipment should be hand held/vehicle mounted rather than static cameras given the high potential for vandalism/theft of such equipment. Technicians also need to be trained to ensure calibration can occur – potentially through the National Institute of Standards and Industrial Technology or alternatives such as in Australia.*
42. *TSCMIC to consider seeking and endorsing specialist technical advice to the Traffic Police as part of any law and order development and capacity building program.*
43. *Establish a speeding Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out survey of existing beliefs/public knowledge and carry out speed surveys), develop and implement a speeding program and undertake monitoring.*

5.2.2 Alcohol Management

Research⁴⁶ from around the world has clearly found that drinking and driving increases the risk of a crash occurring, with an increasing level of risk associated with higher levels of blood alcohol concentration (BAC). Research also suggests that alcohol impaired driving may also increase the severity and consequence of the crash.

Extent of the Problem and Background Data

Crash data from 1987 to 1994 indicated that 17% of all accidents in PNG were ‘alcohol suspected’ or tested positive, increasing to 24% for those on a Friday or Saturday. Preliminary

⁴⁶ Source: WHO World Report on Traffic Injury Prevention

2007 data indicates similar results to the above and also suggests that over 30% of fatal crashes on a Friday or Saturday involved alcohol as a factor.

A study by TRL in 1996 on drink driving in Port Moresby identified that almost a quarter of drivers (24%) surveyed at a weekend between 10pm and 2am had a BAC in excess of 0.08g/100ml i.e. 0.08 grams of alcohol per 100 millilitres of blood⁴⁷. This percentage compared with 1.7% and 4% of drivers in the UK and Adelaide, Australia respectively having a BAC in excess of 0.08g/100ml at the time.

Furthermore, a hospital survey (albeit with a low data set) as part of the same TRL study found that 8 out of 10 drivers admitted to hospital as a result of a crash had a blood alcohol content of over 0.08g/100ml and 50% of all road crash casualties had a blood alcohol content in excess of 0.08g/100ml. This compares with a 2009 study at the Port Moresby General Hospital Emergency Department where 10 out of the 14 drivers were reported to have consumed alcohol – although no formal test was undertaken.

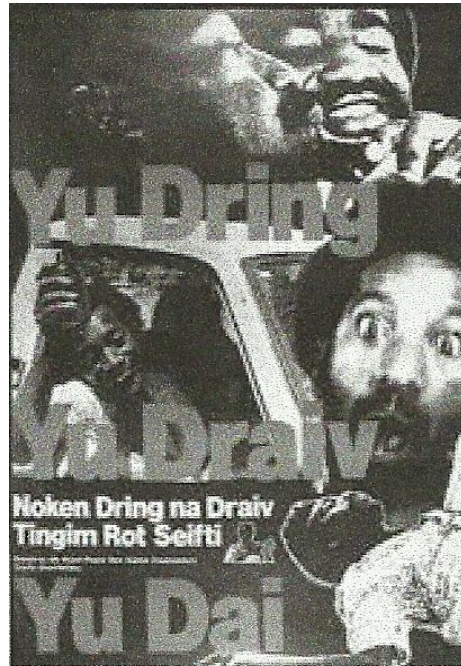


Figure 5.3 Old PNG Drink-Drive Poster

Research carried out back in 1987 by the Department of Transport and the Department of Health on 'Awareness of Alcohol Abuse in PNG' with reference to drink-driving attitudes (as reported in TRLs 'Road Safety Research in Papua New Guinea' paper in 1990) with the aim of assisting the design of marketing material for future road safety and anti-drink campaigns concluded that:

- Females were more concerned and motivated to prevent alcohol abuse than men.
- Males were more susceptible to habitual drinking and have social pressures to drink compared with females.
- Females were influential in changing behaviour, particularly with the family.
- Younger people were more aware and had greater fear of the consequences of alcohol abuse than older people.
- Almost all people that drank and could also drive had, to various extents, driven whilst drunk.
- There was a general consensus that drink driving could be fatal with far reaching consequences.
- There was a general consensus that the breathalyser should be introduced in PNG.
- There was little or no perception of safe drink driving limits.
- There was a very distorted perception on how much alcohol it takes to get drunk.

It is noted that despite the above research being over 20 years old, breathalysers and associated legislation relating to BAC has still not been implemented in PNG.

⁴⁷ Note: 0.08g/100ml is the UK legal drink drive level; in Australia, the legal level is 0.05g/100ml.

Legislation and Enforcement

Section 18 of the Motor Traffic Act notes that it is an offence to drive (or attempt to put a vehicle in motion whilst sitting in the driving seat) whilst under the influence of 'intoxicating liquor or a drug' (where drugs are defined as a dangerous substance as defined in the Dangerous Drugs Act). Fines for drink/drug driving range from K50 to K300 and/or 3 months to 12 months imprisonment for first offences. These increase up to a K400⁴⁸ fine and/or 6 months to 12 months imprisonment for subsequent offences. Furthermore, Section 35 of the Motor Traffic Act notes that drivers convicted of being under the influence of alcohol or drugs will have their licence automatically suspended for a minimum of 6 and 12 months for first and subsequent offences respectively

Accordingly, whilst drink driving is therefore an illegal activity, the Act does not attempt to quantify or specifically define drink driving in terms of a Blood Alcohol Concentration (BAC) in order to assist the Police with enforcement and the judiciary with sentencing. Notwithstanding this lack of quantification within the law, drivers stopped by Police of driving whilst under the influence of alcohol or drugs can request an examination by a medical practitioner.

Given the above, the Police have indicated that drink driving is typically checked through the presence of alcohol in the vehicle, alcohol being smelled on a driver's breath or by testing the coordination of the driver. Breathalysers and/or blood tests are not currently used to determine the level of alcohol intoxication. Enforcement is typically carried out as part of Police organised standard Check Points/Road Blocks rather than random breath-testing specifically targeting drink driving.

Despite the lack of equipment for the Police to confidently check for drivers being under the influence of alcohol or drugs, and no specific enforcement/education campaign targeting such drivers using the above (albeit dated) TRL research information, in the recent response to the 2008 Global Status Report on Road Safety organised by the WHO, the effectiveness of drink drive enforcement was rated as being 5 out of 10 (where 0 is not effective and 10 is highly effective) by the PNG representatives. As such, this rating would appear high.

In order to better address road safety problems caused by drinking and driving, there is a strong need to update legislation based on BAC levels. Whilst BAC can be measured in a hospital laboratory, more typically it is estimated from Breath Alcohol Concentrations (BrAC) obtained via a breathalyser – which converts the reading to a BAC using known relationships between BAC and BrAC. To minimise potential problems in terms of administration, time, funds and health issues (e.g. clean needles to extract blood etc), BrAC is typically measured for enforcement purposes – although it is noted, that in some cases, it may occasionally be necessary to obtain blood readings, for instance from severely and fatally injured road users. As such, it will be necessary to define what devices can be used to provide evidential BAC levels in legislation in due course as part of any upgrade of the legislation.

It is also suggested that lower drink/drive limits also be set for young and/or inexperienced drivers. Best practice as set out in the WHO World Health Report on Traffic Injury Prevention indicates an upper limit of 0.05g/100ml for the general driving public and 0.02g/100ml for novice drivers. In more developed countries with extensive health and safety at work policies, drivers of commercial vehicles such as buses are typically not permitted to work if they have

⁴⁸ Due to an amendment to the Act, the fines for second and subsequent offences are actually noted as 'not less than K400 and not exceeding K300'.

any alcohol in their system. It is noted that in PNG, PMV drivers are typically self operated businesses which are unlikely to set such policies. As such, consideration should also be given to having a zero limit for drivers of commercial vehicles such as PMVs, taxis and heavy vehicles/trucks.

Promotion

The setting of BAC limits for enforcement will need extensive public consultation and in due course, public awareness campaigns as few people will be able to determine how many drinks will put them at risk of offending. Furthermore, the setting of BAC limits will be ineffective without adequate enforcement. The availability and use of breathalysers will be critical to ensure enforcement occurs along with the tactics used by the Police to carry out alcohol enforcement.

It is also noted that there is no reference to drink-driving within the Motor Traffic Code. Whilst the extent of the use of the Motor Traffic Code document is unknown, as a minimum, information and direction on the effect of driving under the influence of alcohol and/or drugs should be contained in the sole guidance document available to drivers in PNG.

- Recommendation:*
44. *Revise existing legislation to quantify the extent to which a driver is deemed to be under the influence of alcohol through the use of Breath Alcohol Concentrations with due consideration given to different types of drivers and levels of experience.*
 45. *Equip and train the Traffic Police to use breathalysers. As part of this, specialist overseas advice to the Police should be sought or provided downstream as part of the current AusAID Transport Sector Support Program.*
 46. *Establish a drink-drive Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out an updated survey of existing beliefs/public knowledge), develop and implement a drink-drive program and undertake monitoring.*
 47. *Update the Motor Traffic Code and include a section on driving under the influence of alcohol/drugs (see Section 5.2.6 for further comment on the Motor Traffic Code).*

5.2.3 Safety Belt Management

Whilst seat belts do not prevent a crash from occurring, research has shown that the failure to use a seat belt can have a major impact on increasing the severity of an injury resulting from a road accident, in particular, frontal impact and run-off the road type of crashes where occupants may be 'ejected' from the vehicle.

Extent of the Problem and Background Data

PNG's response to the WHO 2008 Global Status Report on Road Safety estimated that 80% of vehicle occupants wore their seatbelt – it is assumed that this refers to only those vehicles with seats and seatbelts fitted, rather than including the numerous examples of people sitting in the rear tray of utility vehicles and/or in PMVs without any harness or restraint. This compares with the 2009 study at the Port Moresby General Hospital Emergency Department which indicated that 57% of the fatal and seriously injured drivers examined had not worn a seatbelt. It should

be noted however that the true extent of seatbelt wearing in different parts of PNG for front and/or rear seats is not known given the lack of any survey data relating to this topic.

Traffic Infringement Notice (TIN) data from a series of vehicle inspections over Christmas and the New Year in 2007/2008 indicates that for NCD and Central Province, failure to wear a seat belt was the most common offence, making up almost 20% of all offences recorded. Unfortunately, data relating to the number of passengers, or even vehicles stopped was not recorded and hence wearing rates cannot be determined. Similarly, seat wearing rates at other regional centres in Madang, Mount Hagen and Morobe cannot be calculated although the number of seat belt wearing offences as a proportion of the total number of offences was much lower than recorded in the NCD over the same period.

Legislation and Enforcement

Section 136A of the Motor Traffic Regulation 1967 specifically notes that seat belt wearing laws relate only to Class 1 motor cars (capable of carrying less than 8 persons but not used for hire or reward e.g. taxis) and trucks weighing 2 tonnes un-laden. As such, there is no legal requirement for drivers of other classes of vehicles to wear a seatbelt.

For occupants of Class 1 vehicles, Section 136B of the Regulation states that seatbelts must be worn and securely fastened if they have been provided; and that occupants should sit in a position with a seat belt fitted first of all prior to sitting in a location without a seatbelt, unless the person is in the rear compartment of the vehicle which has no seatbelts fitted. Children between one and 14 years of age may only travel in the front passenger seat of a car if a seat belt is available and worn. Notwithstanding the above, a number of exemptions apply, for instance with respect to reversing a vehicle, for medical reasons and/or the occupant is involved in work requiring constant alighting and re-entering the vehicle.

Drivers and passengers (including children) of motor cars caught not wearing a seat belt face a fine of between K50 and K100.

Vehicles registered in PNG post the original gazette date are required to have front and rear seatbelts fitted – as such, all recent imports should have seatbelts that meet PNGs standard fitted prior to their registration. It is noted that reference to PNGs seat belt standards (PNGS 1316) are contained in the Regulations whilst discussions with the National Institute of Standards and Industrial Technology have indicated that these standards actually relate to a 1988 British Standard (BS3254).

PNGs response to the WHO 2008 Global Status Report on Road Safety rated the effectiveness of seat belt wearing enforcement as 6 out of 10. It is suggested that it seems unlikely that for such a low level of effective enforcement, wearing rates would be in the order of the estimated 80% - as indicated earlier, especially as little targeted publicity on this topic exists.

It is noted that there is no requirement for child seats/child restraints in PNG. Whilst such restraints undoubtedly reduce the risk of injury compared to simply using an adult type of seatbelt, child restraints require parents to purchase the different types of seats associated with these restraints (which also vary in design according to child age) and also need to correctly fit the seat in the vehicle. The cost of purchasing such equipment if their mandatory use was required would obviously have a major impact on many people in PNG, and it is unlikely at this

stage that high compliance would be achieved, particularly given the current allowance to let passengers travel in the rear tray of utility vehicles (see below).

Crash data for PNG from the original 1987 TRL study and preliminary results from the 2007 data show that occupants of utility vehicles form a high proportion of the total number of road accident casualties. It is believed that this is due to a large number of unrestrained passengers sitting in the rear tray of such vehicles. In the event of an accident, for instance where a vehicle rolls over, no protection is provided at all for those passengers in the rear tray, potentially resulting in higher severity injuries and/or death.

As noted previously, only Class 1 vehicles are required to have seatbelts fitted meaning that occupants of heavy vehicles and PMVs are not required to wear seatbelts. Crash data from 1987 to 1994 indicates that 23% of all casualties were passengers on either HGVs (typically travelling in the rear tray/portion of the truck) or buses. Whilst not all of these fatalities and casualties may have been able to be saved or prevented by the use of seatbelts, in some instances, particularly for PMVs, the mandatory fitting and subsequent wearing of a seatbelt may well have reduced the severity of some injuries. Section 5.2.7 provides further comment on this particular issue.

Recommendation:

48. *Include the need for all occupants of all vehicles to wear seatbelts (where fitted) in a review of legislation – not just Class 1 vehicles. Given difficulties with retrofitting the fitting of seatbelts to some vehicles such as PMVs, it may be necessary to stage the implementation with a requirement of all future imported vehicles (including PMVs) to have fitted seatbelts that meet PNG standards.*
49. *Establish a seat belt wearing Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Best Practice Guidelines on Planning and Managing a Seat Belt Program and the implementation of Interventions through enforcement of seatbelt wearing and supporting promotional activities. As part of this, carry out seatbelt wearing surveys to help determine the effectiveness of campaigns and to assist with the refinement of future campaigns.*

5.2.4 Motorcycle Helmet Wearing

Less than 2% of vehicles in PNG are believed to be motor cycles, with a correspondingly very low level of involvement in reported crashes (less than 1% in 2007). Whilst this is a particular problem elsewhere in the Western Pacific Region, at present, the wearing of motorcycle helmets is not a priority issue in PNG and as such is not discussed further. For the sake of completeness however, it should be noted that under Section 150 of the Motor Traffic Regulations 1967, a helmet of a type approved by the Superintendent of Traffic must be worn by motorcyclists and any passenger. Only one passenger per motorcycle is permitted.

5.2.5 Raising Road Safety Awareness

Further to Section 4.7 of the Discussion Paper relating to the promotion of road safety as a management function, a general overview of current road safety awareness activities (including examples of specific campaigns) is set out below.

Child/School Based Education

Child road safety education is currently typically limited to ad-hoc (but planned) single visits to schools in the NCD only. These visits are carried out by the NRSC, often in conjunction with the Police. As with many such attempts to undertake road safety education throughout the world, little or zero analysis of the impact and/or the success of such work on changing behaviour has been carried out. Indeed, unfortunately, experience⁴⁹ has shown *“that one-off talks by visiting speakers to schools (e.g. the Police or other groups) are not particularly effective unless they are part of ongoing work in the school through a structured program of road safety education.”*

As such, scope exists to better focus some of the education activities of the NRSC. Effective child road safety education can best be achieved through its inclusion in the school curriculum - which requires teacher training along with guidance documents and teaching aids to be developed. At present, road user behaviour is currently included solely as an indicator to some learning outcomes in the Community Life and/or Personal Development subjects. Whilst the NRSC is charged with responsibility for conducting road safety education, its involvement can best be maximised by using its resources and influence to work with the Ministry of Education and schools in a pro-active manner. Given the above, the NRSC has recently approached the Ministry of Education with the aim of working with them to develop appropriate teaching aids and materials for use in schools and by teachers. Whilst such materials can be developed, it will be necessary for funding and sponsorship of printing the teaching aids and its subsequent distribution to be secured.

It should be noted however that whilst such education and improved awareness may improve children's road safety knowledge, it may not necessarily result in the long term improvement of road safety. Research set out in the WHO World Report on Road Traffic Injuries notes that *“Knowledge of pedestrian safety in children can translate into changed attitudes and even into appropriate forms of behaviour, but there is uncertainty about the extent to which the observed behavioural changes persist over time. There is no evidence that observed behaviour is causally related to the risk of occurrence of pedestrian injury. If it is, though, there is no reliable information about the size of the effect of pedestrian behaviour on the frequency of pedestrian injuries. Reliable scientific information on the effectiveness of educational approaches to pedestrian safety in low-income and middle-income countries is lacking.”*

Notwithstanding the above, whilst it is acknowledged that road safety education is a crucial and vital part of equipping children with the knowledge to use the road network in a safer manner, such skills are developed over a period of time with experience. Furthermore, on their own, such skills are also of limited benefit without changes to the design of the road environment and vehicles to take account of a child's judgment and capabilities within the traffic environment. Given this, and the need to reduce casualty numbers quickly rather than over many generations simply through education, it would appear sensible to have a greater focus on engineering or enforcement improvements rather than solely trying to improve road safety by changing behaviour through education.

Recommendation:

50. NRSC to continue to try and work with the Department of Education with the aim of preparing suitable teaching material and aids for a range of ages with an aim of distributing the developed material to schools across PNG – see also Rec 14.

⁴⁹ ADB Road Safety Guidelines for Asia and Pacific Region

Community Awareness

Broader community awareness campaigns have been carried out through the NRSC and more recently (2010), by the MVIL and their national 'Road Safety – it's not a Game' campaign. SP Brewery have also very recently commenced a 'don't drink and drive' campaign in recognition of their social responsibility related to alcohol abuse.

The MVIL campaign has targeted PMV drivers/users as well as driver speed and pedestrian behaviour (walking alongside the road and crossing the road) using television advertising along with more general adverts, for instance on the rear of PMVs and in newspapers.



Figure 5.5 Newspaper adverts from the MVIL 'Road Safety is not a Game' campaign

The MVIL campaign has been based around the population's general appreciation and support of the Australian National Rugby League (NRL) competition and as such, has used a number of high profile players and commentators in order to try and convey road safety messages. The campaign included a competition whereby drivers not caught or not actually committing two traffic offences such as overloading, speeding and drink driving had the chance to attend the 2010 NRL Grand Final in Sydney. An MVIL 'task force' was set up to 'police' PMV drivers – although they were not able to issue TINs or impound vehicles. As such, the campaign has acted as an incentive (or 'carrot') for better driver behaviour without any real supporting targeted enforcement ('stick').

The MVIL campaign has drawn a reasonable amount of discussion, and even criticism in some quarters within the media and/or from Police, with respect to whether the road safety message is understood by the local population. The lack of enforcement has also been acknowledged by MVIL as an issue, with them correctly publically noting that the enforcement of the Motor Traffic Act and Regulations is not their responsibility.

Given earlier comments in Section 4.7 that education and promotion campaigns are ineffective if they are not supporting an specific engineering or enforcement initiatives, it can be expected that little long term behavioural change and more importantly, any improvement in road safety and a corresponding reduction in the number of crashes/casualties will occur. As such, better coordination with the Police may have made this a more effective campaign in terms of longer term behavioural change.

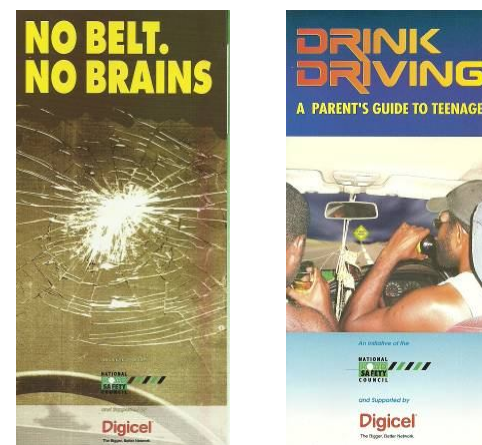


Figure 5.4 NRSC leaflets with Digicel sponsorship

NRSC community road safety activity is again primarily limited to locations within and

around the NCD given the lack of a presence in the Provinces. Reported actions and activities typically include radio chat-shows, community meetings, and visits/presentations to business organisations. Such activities partly reflect the level of funding received by the NRSC for carrying out such tasks (for instance compared to the MVIL and the recent television adverts), although sponsorship has been obtained in the past for the production of a range of posters and leaflets - for instance with respect to driver licensing, pedestrian crossing types, road signs and general safety measures in vehicles.

Again, the effectiveness in changing behaviour and/or resulting in a reduction in crashes is not known and without enforcement initiatives, they are unlikely to have made any significant impact.

Recommendation:

51. *There is a strong need to align community awareness campaigns (regardless of who instigates them) with better enforcement to ensure a coordinated approach. NRSC should take a more proactive role in assisting with this coordination to maximise benefits.*

5.2.6 Driver Training and Testing

Vehicle Classes relating to Driver Licenses

Seven classes of vehicle have been set down in the Motor Traffic Regulations, which in turn, relate back to driver licences:

- Class 1 - Motor cars with seating for less than 8 adult occupants (including the driver), except vehicles that carry passengers for hire (i.e. not taxis); and motor trucks less than 2 tonnes unladen.
- Class 2 - All Class 1 vehicles and motor cars with seating for less than 8 adult occupants (including the driver) that carry passengers for hire (i.e. taxis).
- Class 3 - All Class 1 vehicles and motor trucks of any weight except articulated vehicles and large trailer combinations.
- Class 4 - All Class 1 vehicles and all motor trucks including articulated vehicles and large trailer combinations.
- Class 5 - Motor cycles
- Class 6 - Motor omnibuses and all other motor vehicles except motor cycles, articulated vehicles and large trailer combinations.
- Class 7 - Motor tractors and prescribed vehicles.

Driver Licensing Regime

Part III of the Motor Traffic Act 1950 and Part II of the Motor Traffic Regulation 1967 covers driver licensing requirements. Through the Act and Regulation, learner and provisional driving licences can be issued by the Superintendent of Traffic and/or by delegated Inspectors of Motor Traffic.

Learner driving permits for Class 1 vehicles can be issued to road users aged 16 years and 9 months and are valid for a period of 3 months - which seems particularly short for a driver to learn and gain confidence in driving in order to graduate to a provisional license. Learner permits for other types of vehicle classes can be issued for drivers aged over 21 years with more than one years' worth of driving experience. Learner drivers are always required to drive whilst accompanied by a person with a full current licence, a police officer or a driving testing

officer authorised by the Superintendent of Traffic. Learner drivers are required to display a black 'L' shape on a yellow background whilst driving.

Provisional licences are issued to drivers who have not previously held a drivers licence provided that they satisfy the Superintendent (or delegated Inspector of Motor Traffic) that they can drive the class of vehicle specified in the licence safely, and are aged 17 years and above for class 1 vehicles and motorcycles, and/or 21 years and above for other vehicle classes. Provisional licence holders are required to display a red 'P' shape on a white background whilst driving. Whilst provisional licences may be cancelled for a number of different types of offences, no other specific restrictions on drivers exist, for instance in terms of the number of passengers that can be carried or on night-time driving.

Full licenses can be issued subject to the person being able to demonstrate they are capable of driving safely for the class of vehicle on the licence and has previously held a driving licence (including a provisional licence) for a period of not less than 12 months, and are aged 17 years and above for class 1 vehicles and motorcycles, and/or 21 years and above for other vehicle classes. Depending upon the place of issue, driver licences are issued for a period of one or three years - although the reason for this difference is not known. Three years for a license is also considered a relatively short period of time for a license and this could be extended as appropriate. In road safety terms, there is little benefit in requiring drivers to continually re-register up until a set age whereby risks indicate older drivers to be a potential road safety problem.

Despite there being no provision in the Motor Traffic Act or Regulation, driver licensing has been delegated, or at least taken on, by MVIL for the NCD, and to provincial governments outside of NCD. No statistical information on driver licensing is available given the lack of any returns or collection of data to a central registry.

Recommendation:

- 52. Review the 3 month time limit for learner licenses and consider extending.
- 53. Consider implementing restrictions on Provisional License holders.
- 54. Clarify rationale for different license time period lengths and if appropriate, simplify and provide one consistent time period of issue.

Driver Training

A small number of driving schools currently exist in PNG – typically in Port Moresby (e.g. Muruk Driving School and the Salvation Army in Boroko or the Central Province Transport Authority Driving School) to help learner drivers gain experience in basic driving skills. Discussions with operators of driving schools indicate that training is generally carried out by discussing theory issues such as driver behaviour, general vehicle maintenance and other requirements as set down in the Motor Traffic Handbook. Following on from this, off-road training is carried out – generally on a



Figure 5.6 Off-road driver training in Port Moresby

public field, followed by on-road training.

It should be noted that there is no legal requirement for formal driver training, for instance by authorised instructors. As highlighted in the Driver Testing section (see below), if licenses are relatively easy to obtain, it is unsurprising that few people seek specialised assistance - which in turns results in a low demand for such services. Requiring learner drivers to undergo formal training has a financial impact on an individual or a family with no guarantee of passing a test. By making the test itself more robust and difficult, there is a better chance that potential drivers will opt to choose to have driving lessons, rather than being forced by legislation to do so. Either way, it is suspected that fraudulently obtaining a license will continue to occur without on-going and improved vigilance by relevant authorities.

The Central Province Transport Authority (CTPA) Driving School notes that they typically recommend/carry out 10 hours of training over a two week period, which then culminates with an in-house theory and on-road driving test. The cost for this training is K50 per hour (i.e. K500 for the full training). It is noted that their in-house theory test comes in two parts dealing with the road code and more general driving skills. Given illiteracy issues with many attendees, the theory test is dealt with by an examiner asking the questions and then noting down the answers given. Learners need to obtain 80% or more correct in order to pass the in-house theory tests. While the theory and on-road tests conducted by the driving schools do not replace the official police test, it was suggested by the CPTA Driving School Instructor that the training test probably exceeded that carried out by the Police. Notwithstanding this training, no specific commercial training for heavy vehicles or other types of vehicles is available from the School.

Whilst the CPTA Driving School for instance suggests a 10 hour course, it should be noted that in reality, no set amount of hours can be recommended as driver skills and ability depend on a number of elements. Driver training should be based on a standardised and set syllabus related not only to road regulations, but also a thorough understanding of a driver's responsibilities.⁵⁰ As such, this relates not only to driver skills, but also to their attitude.

ADB Guidelines note that driving instructors should be authorised by a relevant body, with approval given only after they have successfully completed a training course. Driving instructors need additional skills rather than simply being a 'good' driver given that they need to impart knowledge and skills to the public. Any approving authority would need to keep a register of approved driving instructors and to regularly review performance.

Whilst advice on road user behaviour, skills and general information is also contained in the Motor Traffic Handbook, the Handbook is not automatically provided when drivers pay their application fee for a learner licence. As such, the additional cost (4 kina) of getting this basis information may discourage some learner drivers from purchasing it (also see comments below and in 'Driving Tests' with respect to the Motor Traffic Handbook).

Recommendation:

55. *Develop a system whereby driving instructors can be trained and approved to provide official driver training based on a set curriculum.*
56. *Ensure drivers seeking learner licenses receive a copy of the Motor Traffic Code as part of their learner fee.*

⁵⁰ Road Safety Guidelines for the Asian and Pacific Region. ADB

Motor Traffic Handbook

It is understood that only an English language version of the Motor Traffic Handbook currently exists, thereby potentially minimising the number of people that can use the Handbook. It is understood that the booklet was originally available in Tok Pisin and Motu as well as English, however, such versions no longer exist.

A review of the contents of the Handbook indicates that an update should be carried out given that only limited information about key elements is provided. For example, no discouragement of drink driving is provided in the Handbook, whilst only a very limited number of traffic signs and their meaning are shown in the Handbook – for instance not all Regulatory signs listed in the Motor Traffic Regulations are set out in the Handbook.

It should be noted that the preliminary results of a trial survey of driver comprehension of traffic signs that was carried out by the NRSC as part of their vehicle inspections indicated very poor understanding of traffic signs by drivers. In addition, many similar documents elsewhere overseas include information and guidance on basic first aid to allow other road users to assist victims in the case of a crash occurring.

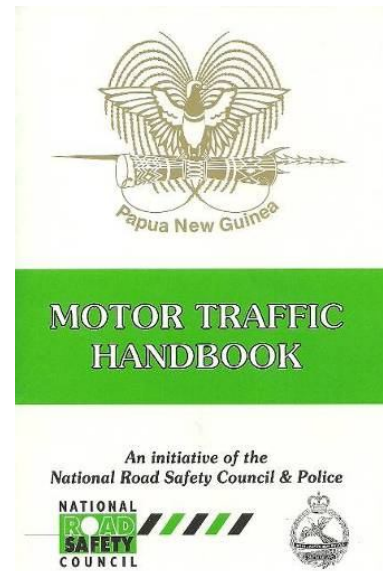


Figure 5.7 Motor Traffic Handbook

Recommendation 4:

57. NRSC in conjunction with partners to revise and update the Motor Traffic Handbook to incorporate additional information and to be printed in both English and Tok Pisin. Sponsorship will also need to be sought to support its re-printing and wider distribution.

Driving Tests

Section 7 of the Regulations notes that in order to obtain a 'Certificate of Competency', a driver must pass a series of tests and have no apparent physical disability. The Certificates are completed (i.e. the test is conducted) by the Police, with the Regulations noting that they 'must' be completed for provisional licences and 'may' be required for a full licence. In theory, the following five steps are taken by learner drivers with the Police testers as part of the process to obtain a drivers licence:

- Oral Test
- Written Test
- Eye sight check
- Parallel parking check
- General driving skills test – including hill starts

Unfortunately however, discussions with NCD police have indicated that there is no standard formal testing procedure and tests are undertaken based on each examiner's own personal

experience – rather than based on a standard manual. Discussions with NCD police also indicated concern that no tests at all may be carried out in some Provinces.

It was noted that the Motor Traffic Handbook is used as the basis for the oral and written parts of the test. Naturally, this poses a potential problem given the level of illiteracy in PNG (approximately 60%) in terms of candidates being unable to read the Handbook, especially given that it exists only in English rather than in Pidgin, and being unable to write answers as part of a formal written test. As such, it was acknowledged that these components of the test are rarely currently carried out in any meaningful manner. The need for standard verbal questions taking account of the urban and rural elements of PNGs network was acknowledged during discussions with the Police (as was the need for the Motor Traffic Book to be made widely and freely available in Pidgin).

The Police also noted that no particular additional specific driver skills or training is carried out prior to drivers seeking a Class 6 PMV licence and then passing the subsequent driving test. Whilst a separate test is carried out for drivers of heavy vehicles, the NCD Police for example have no particular experience or skills in testing drivers of such vehicles, with tests typically simply carried out in a trucking organisation's own yard and without actually venturing on-street.

A review of driving test results for the first six months of 2010 at the NCDC Traffic Police headquarters indicated that of those attending and taking the test as a learner driver, more than half (57% of the 49 tests carried out with a pass/fail noted against them) failed the test – which is a relatively high failure rate and perhaps reflects the lack of formal driver training undertaken and/or available. Notwithstanding the driving test issues, numerous examples exist of fake driver licences have been examined and confiscated as part of the vehicle inspection process previously carried out by NRSC, indicating that the system is already being circumvented. This issue is acknowledged by Police.

It is noted in the *Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services* report prepared as part of the NTS the suggestion that driver training and testing should become a private sector function (overseen by an appropriate body) to be provided on a 'client responsive, cost recovery basis.' Regardless of the body carrying out tests, it is essential that the test be standardised and that testers be appropriately trained, be given sufficient time to undertake the test, testers only examine drivers of those vehicle classes for which they have been trained and be subject to frequent checks to ensure requirements are being met. Given the geography of PNG and rural nature of a large part of the population, it may be necessary to have a 'mobile' testing unit to ensure potential drivers are given the opportunity to sit and take their test.

Recommendation:

58. Prepare a new standardised driver testing procedure including a formal oral test with set questions to be asked covering traffic regulations, vehicle handling, vehicle manoeuvre procedures, hazard perception and the effect of weather and road conditions on vehicle handling.⁵¹
59. Require PMV drivers to sit an additional practical driving test given their role moving large numbers of the general public.

⁵¹ Road Safety Guidelines for the Asian and Pacific Region. ADB

60. *Develop specialist driver testers with respect to heavy vehicles.*
61. *Investigate the potential to transfer driver testing to the private sector through the use of approved/authorised testers, including heavy vehicles given the potential for demand to make such an activity financially viable.*

5.2.7 General Traffic Law Enforcement

The WHO World Report on Road Traffic Injury Prevention with respect to enforcement notes that:

- *“It is critical that the deterrent be meaningful for the traffic law enforcement to be successful;*
- *Enforcement levels need to be high and maintained over a period of time so as to ensure that the perceived risk of being caught remains high;*
- *Once offenders are caught, their penalties should be dealt with swiftly and efficiently.*
- *Using selective enforcement strategies to target particular risk behaviours and choosing specific locations both improve the effectiveness of enforcement...*
- *Publicity supporting enforcement measures increases their effectiveness; used on its own, publicity has a negligible effect on road user behaviour.”*

Specific issues related to the enforcement of speed, drink driving and seatbelt wearing have already been highlighted in Sections 5.2.1 to 5.2.3 respectively as well as general comment relating to the low levels of fines and penalties in Section 4.6.3. It should be noted however that road user’s also have a number of other legal requirements that they need to observe in terms of road safety – see below.

Legislation

Part XIII of the Motor Traffic Regulation sets out a number of general traffic rules that are relevant to road safety - for instance with respect to overtaking (and keeping left when potentially obstructing an overtaking vehicle); turning at intersections; and parking – for instance not within 6m of a pedestrian crossing or an intersection due to the restriction in sight lines. Fines for offences against these general rules amount to K50.

Whilst guidance on many of the issues identified in Part XIII of the Regulations is contained in the Motor Traffic Handbook, observations indicate a general lack of awareness of such rules. Whilst there is a need to establish the extent to which such actions result in accidents in PNG, and hence prioritise future education and enforcement campaigns, general traffic enforcement in particular should seek to address some of these issues.

- Recommendation:*
62. *Traffic Police to undertake visible mobile enforcement of all motor traffic legislation through patrols rather than primarily relying on road blocks aimed primarily at vehicle compliance. Such enforcement should be planned – for instance high levels of enforcement over specific routes/areas targeting particular behaviours at different times of the year.*

5.2.8 Managing Exposure to Risk

The development and implementation of strategies and interventions based on reducing a road user's exposure to risk automatically seek to limit those behaviours and actions that potentially cause harm. At its very simplest, those people that don't venture onto the road are unlikely to be involved in a road accident. Whilst such an option is unavailable to the majority of people, particularly in urban areas, actions can be taken to at least try to reduce exposure. Such actions include measures by provincial and local planners with respect to better town planning to reduce the need to travel excessive distances, reduce the need to travel by motor vehicle (i.e. reducing the number of vehicles) and/or placing restrictions on certain types and mixes of road users. Where possible, road users should also be encouraged to better manage their risk through choosing not to take unsafe modes of travel.

Choice of unsafe travel modes

Notwithstanding the roadworthiness of vehicles with respect to current local legal requirements and standards, a number of permitted vehicle arrangements for carrying passengers, such as in the rear tray of utility vehicles or in open sided/backed trucks such as 'rural' type PMVs (with seats along the side of the truck) is a major cause for concern from a road safety perspective. In such vehicles, the lack of any kind of occupant restraint to stop passengers from being ejected from the vehicle, or any protection in the event of the vehicle turning over in a crash will result in much more severe crashes occurring. As indicated previously, occupants of heavy goods vehicles and passengers in the rear of utes figure highly in casualty statistics.

Work carried out to date by the DoT relating to PMVs and Taxi's and the proposed legal changes to the regulatory system is a good start to the process of improving the safety of these modes of transport. However, in order to help minimise the high casualty numbers and associated fatal and severe injuries sustained by the occupants of such vehicles, in due course, consideration must also be given to preventing the use of such vehicles for transporting people in the manner that currently occurs given that PMV review does not touch on the restraint of passengers.

The need to transport people (and goods) coupled with the lack of any other viable alternative at present is acknowledged as part of this process and hence there is a need to phase in any such changes over a period of time. For instance, the opportunity exists in the future to only grant PMV operating licences to those vehicles designed and purpose built to carry passengers rather than simply providing seats in the rear tray of a truck designed to carry produce - as currently occurs.



Figure 5.8 Rural PMV with unprotected and unsecured passengers



Figure 5.9 Unsecured passengers in the rear tray of a utility vehicle

Whilst this may not address all cases of this kind of transport being used, it would be an incremental start to a longer term process - which admittedly would not be a popular move given the number of people that currently use such unsafe modes of transport. Similarly, banning people from travelling in the rear tray of a vehicle will not be a popular stance and a great deal of care will be required in terms of getting the public to understand the associated risks. Success in this matter will only therefore be achieved through a change in attitude – which will only happen after a longer and concerted effort to raise awareness. The level of road safety risk compared to mobility is recognised as a delicate choice and one that may ultimately be a political decision.

Recommendation:

63. *Whilst restrictions (and enforcement) on the ability to travel unsecured in the rear tray of a vehicle (e.g. without a roll bar) would greatly improve road safety, such a measure would have huge implications on personal travel. As such, it is suggested that such a move would not be generally supported by the public/politicians at this time but wider education/promotion of the risks associated with such travel behaviour should be carried out to start the awareness process.*

Reducing Motor Vehicle Travel

Reducing the need for travel is a technique that can not only improve safety, but also address congestion and environmental issues. As highlighted previously, PNG is currently seeking to enhance economic growth, which will be accompanied by increased levels of motorisation. To address such traffic growth, rather than simply provide additional road capacity, many nations are now seeking to manage growth through a number of travel demand management interventions. Simply providing additional road space is not a sustainable option given that such extra capacity is quickly taken up by more vehicles using that road – and hence provides no long lasting benefit.

Better land use planning, coupled with the incorporation of safety assessments of land use plans; improved public transport during peak periods; and vehicle parking restrictions are all measures that can assist in reducing private individual motor travel. It is of interest to note in the DSP 2010-2030 the economic corridor models and the indicative land use plans for a range of areas. It is essential that as and when land use plans are developed by provincial and local government, the process takes the needs of transport, and road safety in particular, into account.

Recommendation:

64. *NRSC to work with relevant Government Departments to ensure road safety is considered in future provincial plans as a by- product of other planning initiatives.*

5.3 Entry and Exit of Vehicles to and from the Road Network

Vehicle design and maintenance can have an impact on both the risk of a crash as well as the resultant crash severity. As such, vehicle standards, and the associated enforcement of those rules are required. As highlighted at the start of this Chapter, it should be noted that research from high income countries indicate that vehicle factors (alone or in combination with road user and/or the road environment) only typically contribute to approximately 8% of road crashes. Whilst vehicle defects may be more common in PNG than perhaps other countries (for instance

worn tyres or faulty brakes), a vehicle defect does not automatically equate to that vehicle having a crash – for instance, broken headlights during daytime driving.

Crash data from 1987 to 1994 indicates that a vehicle defect was identified by the Police in 10% of all reported crashes - increasing to 15% in fatal crashes. The preliminary analysis of the 2007 data suggests a similar proportion of crashes involving vehicle defects occurring in more recent times.

5.3.1 Vehicle Construction and Equipment

PNG does not have any internal vehicle manufacturers, relying entirely on both new and second hand imports from overseas to satisfy demand. It is understood that whilst the Customs Act allows for prohibition of imports for various reasons, there is currently no barrier to the importation of motor vehicles and parts⁵². As such, restrictions on the importation and use of vehicles and spare parts that are unsuitable or unsafe for PNG roads can only be achieved through the current vehicle inspection and registration process.

Section 125J of the Motor Traffic Regulation 1967 states that it is an offence to operate a vehicle that is in such a condition (or so loaded) that it is likely to result in injury to a person or damage to a property. As such, Parts VIII and X of the Regulation sets out necessary equipment and specifications for motor vehicles that impact on safety with respect to:

- Headlamps
- Forward facing side lamps
- Side marker lamps
- Rearward facing lamps
- Brake lights
- Rear reflectors
- Indicators
- Brakes
- Mudguards
- Rear vision mirrors
- Steering gear
- Doors
- Sun visors
- Tyres
- Warning devices (horn)
- Front windscreen and other glazing
- Windscreen wipers

A detailed review of each element of the equipment in terms of current best practice needs to be undertaken to ensure the appropriateness of the current standards. However, it is acknowledged that the most important basic elements of vehicle standards are at least covered in the above list, notwithstanding the need to only install seatbelts in private motor cars (as highlighted in Section 5.2) and that there is also no requirement for a clear rear windscreen. Whilst many requirements set down in the Regulation appear reasonable, scope for improvement does exist. For example, tyres are required to have a “clearly visible tread pattern

⁵² Kinnaird A. Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services. ADB TA 7214 (PNG) Report to Government of PNG Department of Transport. Final Report. 2010.

on all surfaces that normally come into contact with the road surface⁵³ rather than having a stated minimum tread depth (e.g. 1.5mm) as stipulated in countries elsewhere.

In addition to the above elements, additional requirements relating to the construction of motor vehicles, including specifications for vehicles carrying more than eight passengers, are set in Part XA of the Regulation whilst rules relating to maximum weights and measurements (e.g. length, width, height, forward projections/rear overhang, weight and load) are contained in Part IX.

No standards or requirements relating to frontal and side impact protection (e.g. the installation of airbags), exist, nor unsurprisingly are there any requirements relating to safer vehicle fronts to better protect pedestrians and other vulnerable road users that may be hit by a vehicle. Given that all vehicles are imported into PNG, there is an opportunity to limit imports based on set minimum safety standards – rather than age for example.

Recommendation:

65. Undertake a detailed review of existing motor vehicle standards with reference to good practice and consider setting minimum importation standards for imported vehicles with the intention of being re-sold. It is noted that this approach requires vehicles to be inspected to ensure they meet the stated standards (either at the country of origin and/or at arrival in PNG) and runs the risk of forcing vehicle prices up - which may have an impact on access given a reduction in the availability of reasonably priced vehicles.

5.3.2 Periodic Vehicle Inspections and Authorised Inspection Stations

Part IIIA of the Motor Traffic Regulation 1967 stipulates that vehicles must be examined and tested at government approved Authorised Inspection Stations with respect to Parts VIII, IX and X of the Regulation. For those vehicles passing the test, a certificate of roadworthiness (and associated 'safety sticker') valid for six months is issued. Legally, this periodic six monthly inspection must be carried out on all vehicles regardless of age, meaning that a brand new small car is tested at the same frequency as an aging heavy vehicle or PMV. A fine of between K25 and K100 can be issued for not displaying a current safety sticker.

Under Part IIIA of the Regulations, specific requirements are also set down to regulate Authorised Inspection Stations in terms of a satisfactory examination of staff and equipment prior to being approved, the need to ensure a close supervision of staff undertaking inspections and the maintenance of records. As such, it is an offence to issue Certificates of Roadworthiness without examining the vehicle or to 'pass' a vehicle which does not meet the required standard with a penalty of not more than K100 and/or imprisonment for up to three months.

Despite such action being an offence, a commonly expressed concern exists with respect to Authorised Inspection Stations not carrying out a full inspection and/or issuing un-roadworthy vehicles with Certificates of Roadworthiness and Safety Stickers⁵³. It is noted that there are 144 Authorised Inspection Stations in PNG⁵⁴, 45 of which are in NCD. It is also understood that

⁵³ PMV Working Party Report to Secretary Parakei. Department of Transport. October 2008.

⁵⁴ Land Transport Division presentation at National Transport Strategy Workshop. February 2010.

the Land Transport Division of the DoT has now ceased granting approval for new Authorised Testing Stations and that some Inspection Stations have had their authorisation withdrawn⁵⁵.

The Land Transport Division of the DoT note that the large number of Authorised Inspection Stations, particularly in the NCD, makes auditing and checking of performance standards difficult. As part of this, a recent DoT initiative has been to consider reviewing the existing licensing arrangements of Authorised Inspection Stations in NCD with a view to reducing the number of such Stations, particularly for PMVs and heavy vehicles.

Notwithstanding the above, although periodic inspections do occur in many countries, the WHO report on World Traffic Injury Prevention notes that *“while there is in general no evidence that periodic motor vehicle inspections reduce crash rates, the exception is in the field of commercial vehicles, where defective brakes on large trucks have been shown to be a risk factor.”* A number of reasons may exist for the lack of a link between formal periodic inspections and a reduction in crashes, particularly in locations where inspections may not be properly carried out. Indeed, where owners and operators can fraudulently obtain Certificates of Roadworthiness, any improvement in the safety performance of the vehicle fleet is highly unlikely to occur without other incentives such as random vehicle inspections existing. Similarly, such periodic inspections are simply a ‘snap-shot’ at one particular moment in time with owners/operators, for instance, ensuring a vehicle has appropriate tyres for the inspection and then replacing them with their normal day-to-day tyres after the test to ensure an inspection pass.

It should also be noted that vehicles maintained to the ‘minimum acceptable standard’ simply for the purpose of passing an inspection are unlikely to be safe and roadworthy for the majority of the time that they operate on the road.

Recommendation:

- 66. LTD to undertake rigorous audits on Authorised Inspection Stations and consider rationalising the number of Authorised Inspection Stations taking account of quality/performance of such stations and the number required in order to service the wider population.*
- 67. Ensure Authorised Inspection Stations are capable of inspecting all vehicles to which they are permitted to do so, including heavy vehicles.*

5.3.3 Vehicle Inspections

All commissioned police officers and specifically appointed Public Service officers (that have been named as such in the National Gazette) are considered to be Inspectors of Motor Traffic. Such Inspectors have specified or delegated responsibility for a number of aspects of the Motor Traffic Act and Regulation and are able to issue Traffic Infringement Summons’ for a wide range of offences.

In particular, Section 125X of the Motor Traffic Regulations relating to the ‘Examination and Testing of Certain Vehicles’ allows Inspectors to require vehicles they have reasonable cause to suspect as not complying with any aspect of the Motor Traffic Act or Regulation to be

⁵⁵ Kinnaird A. Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services. ADB TA 7214 (PNG) Report to Government of PNG Department of Transport. Final Report. 2010.

handed over for testing. This, however, does not permit random vehicle inspections or inspections of every vehicle passing through a checkpoint (as had been occurring under the previous vehicle inspection process) given the need to have 'reasonable cause' to suspect a defect. Similarly, Inspectors may enter land or premises to search for vehicles to test that they have reasonable cause to suspect of being in an accident, having been stolen or driven in a reckless manner. Section 125Y of the Regulations also permits Inspectors to issue 'Defect Notices and Labels' to unsafe vehicles and/or those not complying with the Regulation. Such Notices direct the owner or person in charge of the vehicle to not drive the vehicle nor have it stood on a public street until the defects have been fixed and then inspected at an Authorised Inspection Station.

Notwithstanding the above, the Motor Traffic Act and/or Regulation do not explicitly give Inspectors the power to stop vehicles at check points. It is understood that through Section 44 of the Motor Traffic Act, the Police however do have such power in order to '*ensure the safe and efficient regulation of the traffic on the street*' – although again, no explicit provision for stopping vehicles is stated, simply that they can direct road users to undertake certain actions.

Given the lack of focussed and dedicated action by those that are deemed legally able to carry out vehicle inspections, up until September 2010, the NRSC had taken on the role of carrying out such inspections in order to help reduce the number of un-roadworthy vehicles on the road; and in doing so, to raise additional revenue for the NRSC to invest back into road safety activities. As indicated previously, whilst a Gazette Notice was issued in 2006 by the then Chairman of the NRSC setting out Operation Instructions relating to such inspections as part of a road safety awareness campaign, the legality of NRSC staff undertaking such inspection activities was questionable, particularly without Police attendance to stop vehicles. As such, the DoT and Police are now formally responsible for undertaking such inspections following direction from the Minister of Transport to the NRSC to cease such activities.

Regardless of the legality of previous vehicle inspections, a review of the main types of defects found during vehicle inspection operations in 2007/2008 in NCD/Central Province. Lae, Mount Hagen and Madang found that tyres without sufficient tread were the primary vehicle defect, followed to a lesser extent by non-working brake lights. During vehicle inspections, large numbers of defects along with fake driving licenses and registrations were typically identified.

It should be noted that the previous vehicle inspection process did not record the total number of vehicles inspected – which would have assisted with being able to establish the percentage of the motor vehicle fleet that was deemed defective (assuming all vehicles passing through an inspection point were stopped; or the vehicle check was totally random and not selective based on the look of on-coming vehicles). Such data would have assisted with monitoring and evaluation of campaigns aimed at improving the quality of the vehicle fleet. In addition, whilst data on vehicle faults has been collected by the NRSC whilst they were undertaking vehicle inspections, little use of that data was actually made – for instance with respect to the sharing of the information with other agencies who may have been able to affect change through targeted enforcement.

Recommendation:

68. *Given that there is undoubtedly a need for vehicle inspections, consideration should be given to changing legislation to allow gazetted persons (not just public servants) to carry out vehicle inspections. (The NRSC notes and confirms that it has ceased undertaking*

inspections in accordance with the Minister's direction. Should any change to this occur in the future, it should be noted that in order for the NRSC to undertake such work legally, consideration would also need to be given to either Government directly funding the NRSC to carry out such inspections (with fines being given to the Treasury) or legislation being changed to allow collected fines to be retained by the NRSC – for the purposes of its road safety awareness activities.)

5.4 Post Crash Recovery and Support

The WHO World Report on Road Traffic Injury Prevention notes that for low and middle income countries, a high proportion of deaths occur prior to the road accident victim reaching the hospital, with the probability of dying increasing as the socio-economic level of the victim decreased. Whilst a number of these deaths may occur within a few minutes of the crash, pre-hospital care in the form of bystanders conducting first aid and/or emergency services transporting the injured to hospital in a timely manner can have a major impact on mortality rates. It should be noted that the 2010 study by the Emergency Department of the Port Moresby General Hospital of fatal and seriously injured road accident casualties found that *'the majority of the mortalities occurred at the accident scene or whilst en-route to the hospital.'*

5.4.1 Emergency Services

Universal Access Telephone Number

In theory, a national '111' telephone number for an emergency ambulance service already exists, which is partly managed by the St John Ambulance Service. St John however report technical problems associated with the number with the result that the 111 service sometimes does not operate or operates poorly.

Ambulance Services

The lack of transport services for the sick and injured is acknowledged in the 2011-2020 National Health Plan, which notes a strategy to *"increase the number of facilities in rural areas and urban settlements that have essential equipment available in accordance with the National Health Standards, including functioning cold chain, communications, and transport"* (Key Result Area 1: Improve Service Delivery - Objective 1.2: Rehabilitated and Strengthened Primary Health Care Infrastructure and Equipment).

With respect to existing ambulance services, St John provides a service in the NCD through a contractual arrangement to the Ministry of Health; and also has two additional bases in Central Province and three in Wewak, Madang and Popondetta. As such, St John is the only authorised ambulance service in the NCD with the exception of private hospitals - which operate their own vehicles albeit with minimum regulation in terms of the standard of service provided. In areas where St John does not operate, either no service or alternatively an 'ambulance' associated with the local medical centre/hospital, particularly in some rural areas, may exist. The quality of such a service with respect to equipment and the skill levels of ambulance crews, however, is unknown.

St John charges no fees for picking up road crash victims although this poses a financial challenge to them. In addition, the existence of 'scoop and run' whereby a passerby takes a crash victim to hospital was acknowledged – with the result that in many cases, ambulances are called out to the crash, but arrive to find no victims at the crash scene. As such, a formal and 'informal' system of transporting crash victims to hospital exists in PNG. St John

Ambulance service estimate that victims have left the scene of the crash (or the call out is cancelled) in approximately 15% of their 200 or so call outs a year in NCD. It should be noted that this number of calls well exceeds the typical number of reported hospitalisation rated crashes reported by the Police in the NCD, further highlighting the issue of under-reporting to and by the Police.

At present in the NCD, St John has seven to eight ambulances available although typically, only three are run at any one time given the need for operational flexibility. St John noted that up-skilling of their ambulance crew is currently underway with the intention to have all ambulance staff fully competent to basic Australian Certificate 4 in health care/ambulance skills – this is less than currently expected by Australian paramedics, but is considered more than an adequate level for current needs.

The St John ambulance service is also in the process of developing/implementing safer driver policies on the back of a number of accidents involving ambulances. As such, they have their own trainer/tester whom is responsible for up-skilling (defensive and offence driving skills) ambulance drivers.

With respect to passers-by providing assistance (see earlier comment concerning ‘scoop and run’ actions), whilst it is understood that the Red Cross carry out first aid training (e.g. to corporate organisations at a cost), no national general first aid information training is conducted in PNG in order to provide basic information to the public on simple techniques that may help save lives – this is particularly important in the case where a scoop and run technique is primarily used to transport victims to a hospital. Similarly, no basic first aid training is provided as part of driver training or included within the Motor Traffic Handbook. It should be noted that whilst the Red Cross is lobbying for drivers to have attended first aid training course as a pre-requirement to obtaining a driving license⁵⁶, there is no legal requirement to assist road accident victims.

Recommendation:

69. NRSC to support Department of Health in their attempts to improve emergency services including any improvement to the 111 system.

70. Include first aid treatment in a revised Motor Traffic Handbook and support attempts by the Red Cross to make basic first aid awareness a requirement of driver training/testing.

5.4.2 Hospital and Long Term Care

As indicated in Section 4.3, the recently released 2011 – 2020 National Health Plan acknowledges that there is little information on the causes of general injuries and little focus on them at present in the health system. As such, it is welcoming to note that the National Health Plan recognises the need to improve trauma facilities for road accident victims.

At present, there are limited human resources and equipment available within health care facilities in PNG with the National Health Plan 2011-2020 noting that there are 0.06 doctors and 0.56 nurses per 1000 population⁵⁷ – the lowest for comparable countries in the Western Pacific. St John Ambulance Service also note opportunity for improvement at the accident and

⁵⁶ The National. Friday 10 September 2010

⁵⁷ National Health Plan 2011-2020.

emergency wards for receiving road accident where, despite advance warning/communication with hospitals such as POM General (through mobile phones – POM General no longer has a radio system) the Accident and Emergency Department is often not ready for the incoming crash victim.

It is also noted that fees are charged at public hospitals for treatment and/or beds and as such, the cost of medical attention may in some cases discourage road crash victims from receiving appropriate treatment that may reduce their suffering or the potential for any long term illness or disability.

Recommendation:

- 71. NRSC to try and work in conjunction with the Department of Health to promote healthy lifestyles where cross-sector issues exist such as alcohol abuse – and its impact on drink-driving and/or drunk pedestrians.*

6. Summary of Opportunities for Improvement

6.1 Prioritisation and Investment Strategy

As highlighted in the previous Chapters, all aspects of road safety in PNG need to be improved. Given the scale and extent of the identified issues, it is not feasible or practical to implement all the recommendations immediately. Accordingly, there is a clear need to prioritise the proposed recommendations. As part of this, being able to demonstrate some positive outcomes in the short term as a result of implemented measures will help gain support and buy-in from the public and politicians.

Immediate term results can best be achieved by targeting direct interventions at the most dangerous roads/routes in the country, rather than adopting a 'generalist' sector wide approach. Data on such roads will soon be available via the NRSC accident database – noting that such information is reliant on the Police reporting accidents, whilst the International Road Assessment Program (iRAP) approach of assessing routes for safety, based on their design, could also assist with this. As such, it is paramount that road safety engineering, enforcement and promotion actions should initially concentrate on those roads and areas with the highest number of crashes and casualties. Furthermore, as part of this, opportunity exists in the future to tie road safety improvements in with the proposed improvements to economic corridors as set out in the DSP.

The key to the successful implementation of initiatives aimed at demonstrating immediate results is to ensure that the actions are not carried out in isolation - but are coordinated with each partner playing their role and being accountable for their actions. For instance, research discussed in the preceding Chapters clearly note that carrying out road safety awareness campaigns without them being forcibly backed up by the Police targeting those same issues are ineffective. Despite the 'feel-good' factor of such campaigns, money spent on such activities could be better utilised elsewhere. It is therefore critical to target scarce funding and resources at those measures which can be shown to be effective, particularly in the short term as PNG endeavours to meaningfully and systematically improve road safety.

In parallel to such direct and visible short term improvements, institutional, policy and legal reforms also need to occur whilst those actions that have longer term outcomes, such as influencing and changing road user behaviour through education and training, also need to be set up and delivered. There is therefore a broad mix of actions to undertake. As such, Appendix D sets out each of the recommendations identified in the previous Chapters of this Discussion Paper broken down by priority (High, Medium and Low) for the following generic categories:

- Technical Capabilities.
- Institutional Arrangements.
- Road Safety Strategy.
- Lead Agency Coordination.
- Data Systems, Monitoring and Evaluation.
- Road Safety Initiatives.
- Funding and Social Costs.

For ease of reference for the identified responsible implementing organisations, Appendix E sets out all of the recommendations arranged by agency and priority.

It is strongly recommended however that any final agreed list of actions and priorities should be incorporated into a national road safety strategy/plan that has been widely consulted upon, has had further input into by all stakeholders and which, most importantly, takes available funding into account.

6.2 Technical Capabilities

At present, despite the existence of the NRSC, there exists no local individual or individuals with detailed specialist knowledge in all aspects of road safety. Nor has there been any extensive recent research or study undertaken to determine the major problems and how they should be addressed. If Government is serious about addressing the pain and trauma as well as economic losses associated with road crashes, there is a strong need to develop this capability, experience and interest in relevant organisations in order to allow data based decisions to be made. The NRSC acknowledge the support provided through the AusAID Transport Sector Support Program by way of a Road Safety Adviser and the current focus of the Adviser's work. In the future however, there will be a need to directly strengthen those agencies that can have a direct influence on road safety behaviour, for instance through enforcement and/or engineering treatments on the nation's roads.

It is important to develop specialist local skills more broadly within PNG both in the public and private sector (rather than solely in the NRSC) in order to help broaden professional awareness. It is suspected however that for the time being, there will be a strong dependence on the staff at the NRSC with respect to providing specialist advice, particularly to those provincial governments and road controlling authorities with no or little road safety engineering capability.

6.3 Institutional Arrangements

As part of this Discussion Paper, the proposed recommendations contained within the Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services report prepared as part of the National Transport Strategy are acknowledged, including the recommended merging of the NRSC secretariat, the Land Transport Board and the Land Transport Division of the DoT to form a Road Traffic Authority. Indeed, as part of this, the clarification of roles, responsibilities and accountabilities is welcomed and supported. It is important however that a focus on road safety is not lost in any amended institutional arrangements.

As such, there is a strong need to define responsibilities (including clarifying roles), specifically identifying a road controlling authority's duties with respect to ensuring the safety of road users on roads under their control e.g. to monitor and improve road safety on their network. This in turn then puts the onus onto road controlling authorities to develop safety management systems and has the potential to make road safety considerations and activities (such as accident investigation and prevention; and safety auditing) more mainstream within their daily activities. This should also tie in with their Corporate Plans and their actions within this area should therefore also be linked to reporting requirements. Agencies such as the DoW and/or NRA may find it appropriate to identify 'road safety champions' within their organisations to give safety a greater profile and for them in turn to work with the NRSC and others in coordinating their activities.

Regardless of the above, it is imperative that the NRSC Board be re-established and that it reviews its own mandate in terms of the wider Board membership and expected activities in order to make it an effective entity able to influence all aspects of road safety.

6.4 Road Safety Strategy

Future actions and interventions need to be guided by a national road safety strategy or plan, setting out activities to be carried out with due consideration of funding. Such a strategy or plan needs input and commitment from a range of partners, rather than it being perceived as an NRSC document. As such, whilst this Discussion Paper acts as a valuable resource and provides a certain amount of guidance as to those aspects of road safety that need improvement, stronger buy-in and ownership from the NRSCs partners from the start of the process is needed for a future strategy or plan.

Recommendations set out in the Review of Road Safety Management Practices⁵⁸ report note that where new work is being introduced and the resources and capabilities are largely unknown, shorter strategies are preferable in order to demonstrate success and have manageable targets. Of utmost importance is that any strategy must be realistic about funding for the implementation of the identified actions, with work programs needing input from those professionals actually undertaking the work to ensure achievability. Casualty reduction targets therefore need to reflect possible implementation levels and funding, which in turn reflects the Government's view with respect to the priority accorded to road safety in PNG.

As part of the development of the road safety strategy/plan, agreement will need to be gained on the approach to be taken. For example whether it should focus on strengthening and delivering on each of the different sectors such as education, publicity/awareness, driver training/testing, vehicle standards, legislation, safe planning/design of roads etc; or alternatively, whether it should primarily focus on specific identified road safety issues such as drink-driving, speeding, public transport passengers and pedestrians in order to maximise road safety benefits. A third alternative is to simply focus on safety along specific identified and agreed key routes and to primarily invest in road safety only along those routes with appropriate mentoring of local personnel in road safety engineering, enforcement and education in order to encourage 'learning by doing'. Regardless of the approach taken, a step by step approach to enhance local specialist skills and capabilities is required and any such Road Safety Strategy or Plan needs to acknowledge this issue.

6.5 Lead Agency Coordination

It is clear that at present little or no coordination and collaboration currently takes places on any formal basis between agencies involved in road safety. The lack of focussed Police traffic enforcement associated with the recent MVIL 'Road Safety is not a Game' campaign is testament to this. As highlighted in Section 6.2, there is therefore a strong need and requirement to re-establish the NRSC Board, with or without those non ex-officio members in the first instance – although a concerted effort is still required to try and involve them. The re-established Board, supported by a technically sound Secretariat, must take the lead in ensuring that the activities of the various agencies are coordinated and that agencies responsible for agreeing to undertake actions are held accountable for them. As part of this, the NRSC should assist and encourage those organisations wishing to undertake road safety promotion activities

⁵⁸ TRL and Ross Silcock, Babbie Group. Review of Road Safety Management Practice. DfID report for GRSP. 2001.

through their coordination role to ensure campaigns are consistent with the Road Safety Strategy or Plan.

6.6 Data Systems, Monitoring and Evaluation

The NRSC is currently in the process of updating the accident database, which is a vital step in improving road safety in a cost effective manner in PNG through better understanding of current issues and hazardous locations. It is acknowledged that room for improvement in the current system exists such as improving the speed of data entry and minimising the current double-handling of the raw data. Similarly, it is vital that the quality of accident reporting be improved and the level of under-reporting be better understood – a task that the Police and the NRSC will need to work closely on in the future. This data is critical in order to better demonstrate to politicians and the public alike the extent of the problem in PNG and to help with identifying mitigating policies and interventions.

There is also a need to better survey and monitor intermediate outcomes and outputs as well as the above final outcomes relating to casualty data. It is noted that an opportunity exists to raise the profile of road safety in terms of national reporting for instance through the Development Strategic Plan and its reference to 100% of roads in 'good condition'. Such an approach will need not only the road surface condition to be surveyed, as currently occurs, but also an evaluation on safety, such as through the international Road Assessment Program (iRAP).

6.7 Road Safety Initiatives

6.7.1 Planning and Engineering

At the simplest level, improved planning can help ensure road safety problems are not introduced into a transport or road project (using road safety audits) whilst a review of the existing road network – using crash data and/or experience of unsafe features (such as through iRAP and/or road safety audits of existing roads) can help fix known problems, typically using low cost countermeasures. As a minimum, all road designs should be subject to a road safety audit (in NRAs case, this is already a legal requirement within their Act) whilst DoW should consider developing their own policy on this matter. Furthermore, following the upgrade of the NRSC database, NRSC should seek to work with all relevant road controlling authorities to identify hazardous locations (black spots) with the subsequent aim of agreeing low cost engineering improvements that they can budget for in the following year.

6.7.2 Legislation and Enforcement

As highlighted throughout the Discussion Paper, there is a strong need to update enabling legislation in a range of areas to better reflect good practice. It should be noted however that such legislation is of limited value if appropriate enforcement isn't carried out. In order for this to happen, strong leadership throughout the Police hierarchy is required along with funding for the provision of suitable equipment and its maintenance. As part of any change to the legislation, the current level of penalties and fines (as well as who can issue them) needs to be reviewed in order to ensure that they actually act as a deterrent. It should be noted that the prime reason for visible policing of traffic is to act as a deterrent rather than to simply catch offenders.

6.7.3 Education and Publicity

Based on research findings from elsewhere, the current approach to child road safety education adopted by the NRSC can be expected to have little long lasting impact on behaviour. It is therefore important that road safety education is included within the school curriculum with the Department of Education and NRSC working together to develop appropriate teaching aids and material.

Future NRSC led awareness campaigns should be systematically planned based on surveys and research – rather than say simply handing out leaflets or posters without appreciating whether the message is understood and appropriate. Similarly, future road safety awareness campaigns by NRSCs partners should be carried out in collaboration with the NRSC as well as the Police and targeted at specific issues throughout the year. Targeted issues should be in line with those concerns identified and agreed with as part of a national road safety strategy/plan. As part of this, funding for road safety campaigns along sections of road being rehabilitated, for instance by DoW, should be considered as part of any future contracts being administered and awarded.

6.7.4 Driver Training and Testing

The current system of driver testing lacks any real consistent process or procedures that are adhered to, with the result that many drivers seeking their license are often poorly (if at all) trained. Whilst some driving schools exist, for instance in Port Moresby, there is little real incentive for potential drivers to have lessons and pay for their tuition given the relative ease in which licenses are reportedly obtained. A stricter and more consistent approach to the testing of drivers, including drivers of different types of vehicle, is required which in itself may generate a greater demand for driving tuition. As part of this, driving instructors should be regulated and approved by a central body that checks and ensures that appropriate driving instructor standards are being maintained. The existing concerns relating to fake driver licenses is acknowledged and future initiatives may need to be undertaken to reduce this, particularly if driving tests become more controlled and obtaining a driving license fraudulently becomes a more attractive proposition. Unfortunately, the current extent of this problem is not known.

Notwithstanding the above, given the existing driving skills observed to date, it can be expected that new drivers may be reduced to the behaviour of those around them. As such, even with changes to testing and training, it is expected to take many generations before driver behaviour noticeably improves from the current prevailing level - as each new set of drivers need to slowly raise the overall general performance of on-road behaviour.

6.7.5 Vehicle Safety Standards

The true extent to which vehicle defects cause crashes in PNG and/or the success (or otherwise) of vehicle inspections in terms of reducing the number of un-roadworthy vehicles on the road and their involvement in subsequent crashes is unknown. Despite this, it would appear that a great deal more enforcement attention is given to vehicle inspections than any other activity. Whilst there may be various reasons for this given that different agencies are all involved in undertaking such enforcement, and the acknowledgement that there is a need to start controlling the quality of (new and second-hand) vehicles entering PNG in terms of safety standards, there is a need to better understand the extent of the problem before investing large sums of money on this issue, particularly given the need to quantify the benefits of such a focus on vehicle standards.

Notwithstanding the above, as highlighted in Section 6.8, there is a need to clarify those agencies that are able to undertake such vehicle inspections and what happens to the collected fines.

There is, however, a need at a point in the future to consciously make a decision with respect to the current situation of allowing passengers to travel in the rear of utility vehicles and/or in open sided/backed heavy good vehicles which act as passenger transport without any kind of restraint and/or protection. The lack of protection provided to passengers travelling in such vehicles make it almost inevitable that fatal and severe injuries are likely to be sustained by passengers in the event of a crash. The current role and importance of the transport system (and the way people use it) in the economic development of the country is fully appreciated – however, from a road safety perspective, the current practice of allowing passengers to travel in such a manner is unacceptable and consideration needs to be given to phasing out such practices over the coming years.

6.7.6 Post Crash Care

Speedy access to a hospital coupled with appropriate trauma care can be an effective way in either saving a road crash victim's life or reducing the severity of an injury so that no long term disablement occurs. Measures and actions set out in the National Health Plan 2011-2020 should be supported whilst scope exists to work alongside and build upon general Department of Health promotions to raise awareness of specific road safety concerns.

6.8 Funding and Social Costs

As highlighted previously, the only specific 'guaranteed' funding of road safety activities is for the NRSC - through the existing minimum 5% levy on 3rd party insurance; and for the accident investigation, traffic management and road safety section of the Police Department at their head quarters. These funds, which tend to cover staff costs and overheads result in limited actual implementation. As such, the funding of visible road safety initiatives is extremely limited with no real committed funding from government for actual interventions, particularly engineering measures. Whilst road controlling authorities such as DoW can apply for funding to improve hazardous road sections through the Development Budget, in reality this doesn't occur with the focus primarily being on maintenance and rehabilitation. There is therefore a need to raise the profile of road safety and in particular, to provide specific streams of funding such as for road safety engineering treatments and or police enforcement equipment.

As part of any road safety funding for engineering improvements, it is important for road controlling authorities to develop a program to prioritise black spot sites for improvement – typically based on a cost benefit analysis. This in turn requires an understanding of the social cost of road crashes by severity in order that crash cost savings can be determined for input into the cost benefit analysis.

As indicated previously, where considered appropriate, scope may also exist to set aside some funding explicitly for road safety awareness and enforcement on sections of road that are being rehabilitated as part of the project contract, whilst increasing the minimum 5% levy on compulsory third party insurance would greatly assist in providing funds for a national road safety campaign and/or funding enforcement equipment for the Police. Proposed funding arrangements for any new agency caused by the merging of the NRSC, LTB and LTD of the

DoT as recommended in the Institutional Arrangements report prepared as input into the National Transport Strategy⁵⁹, are also acknowledged and noted.

⁵⁹ Allan Kennaird Consulting Ltd. Preparation of the National Transport Strategy and Medium Term Transport Plan: Land Transport – Institutional Arrangements and Regulation of Vehicles, Drivers, and Transport Services. September 2010.

7. Conclusions

As highlighted throughout the Discussion Paper, at present, PNG has no real understanding of the extent of the road safety problem with the result that there is little pro-active buy in from politicians, the general public and key agencies to help ensure safety is taken into account in their everyday activities.

Without being able to acknowledge the scale of road safety issues, there will be little reason for politicians and the public to demand change through greater investment, and just as importantly, for relevant agencies to focus their attention on how improvements can be attained. As such, there is a strong need for the NRSC to work with the Police to improve reporting rates and the quality of accident reports (as well as to determine current under-reporting) to ensure better quality data is at hand and available for all stakeholders to use. Combined with this is the need to establish the social cost of road accidents in order to provide decision makers with economic evidence relating to the benefits associated with investing in road safety.

A wide range of improvements and recommendations across the road safety sector have been identified. Whilst these include long term initiatives such as education and driver training to help address road user behaviour, there is a need to act immediately to help reduce the number of road casualties in the short term. This can best be achieved by focussing on complimentary initiatives incorporating engineering, targeted enforcement and community awareness on the worst sections of the road network – for instance through demonstration projects. Ensuring sufficient funding exists to design and construct roads safely along with ensuring the Police have equipment, vehicles and fuel for enforcement is essential for any promotional activities to be even remotely effective. Simply focussing on a single activity will not achieve the desired road safety improvements. Moving forward, a national road safety strategy or plan with Government support and funding will be required to provide the direction of future road safety activities.

In order to bring about the improvements that the NRSC believe are necessary and possible, it is vital that all stakeholders buy-in and contribute to the solutions with an agreed national direction established through a road safety strategy/plan. This will require commitment by our partner agencies to include road safety within their organisation's actions and activities as well as through cross-sector coordination to ensure the outcome of each agency's actions exceed their individual input. The re-establishment of the NRSC Board is critical to this process.

Appendix A – Police Accident Report Form

Examples of Accident Report Forms along with the additional pedestrian casualty form, completed by the Police are shown overleaf. These examples indicate the extent of the data collected by the Police and are typical of the quality and standard of the information recorded.

1. REPORT NUMBER GIG/02		2. YEAR 19		3. PROVINCE N.C.D		ROYAL PAPUA NEW GUINEA CONSTABULARY		5. POLICE STATION 34 4 MILE	
4. NAME OF TOWN PORT Moresby		4. NAME OF TOWN		4. NAME OF TOWN		ROAD ACCIDENT REPORT		NAME OF ROAD / STREET / OTHER POKORORONA AVENUE	
6. No. of vehicles involved 1		7. No. of vehicles damaged 1		14. DATE 15 07 2002		16. DAY OF WEEK Monday		21. WEATHER / VISIBILITY 1 clear	
8. No. of vehicles involved		9. No. of vehicles damaged		10. No. of vehicles damaged		11. No. of vehicles damaged		12. No. of vehicles damaged	
13. ROAD DESCRIPTION 1. straight and flat		25. ROAD SEPERATION 1 median		28. SHOULDER 1 paved		31. LOCATION TYPE 1. not at junction		32. TRAFFIC CONTROL 1. none	
17. 18 TIME 14:15 AM		20. ACCIDENT SEVERITY 1. Fatal		30. SURFACE CONDITION 1. dry		33. HIT & RUN 1. not hit & run		34. COLLISION TYPE 1. head on	
22. LIGHT CONDITIONS 1. day		23. ROAD SEPERATION		24. TRAFFIC MOVEMENT 1. one way		26. ROADWORKS 1. not at roadworks		36. ACCIDENT ATTENDED 1. attended by police	
27. ROAD WIDTH 8 metres		28. SHOULDER WIDTH 1 metres		29. SURFACE CONDITION		30. SURFACE CONDITION		37. MAJOR OFFENDER veh. registration no BAH 383	
38. MAKE SUZUKI		40. YEAR 1999		41. PROVINCE OF REGISTRATION N.C.D		42. VEHICLE TYPE 5		43. OWNERSHIP / USAGE 2. company	
44. VEHICLE MANOEUVRE 5. merging		45. VEHICLE DAMAGE 2. damage to vehicle 1		46. NOSE TO TAIL 1. no		47. LOADING 1. OK legal		48. LIGHTING DEFECTS 1. none	
49. OTHER DEFECTS 1. none		50. SEX M		51. AGE 17		52. RACE M		53. DRIVER INJURY 1. fatal	
54. INJURY TYPE 1. fatal		55. LICENCE NO B084768		56. PLACE OF ISSUE P.M.		57. LICENCE STATUS 1. FULL LICENCE		58. DRIVING EXPERIENCE 1 years	
59. DRINK/DRIVING 1. not suspected		60. DRIVER ERROR 1. none		61. OFFENCES COMMITTED (IF ANY) FOR HQ OFFICE USE ONLY		62. OFFENCES COMMITTED (IF ANY) FOR HQ OFFICE USE ONLY		63. OFFENCES COMMITTED (IF ANY) FOR HQ OFFICE USE ONLY	

NAMES AND ADDRESSES		PASSENGER CASUALTIES										INJURY SEVERITY			TYPE OF INJURY																						
PASSENGERS		VEH NO	SEX	AGE	SEVERITY	TYPE	POSIT	LIQUIDR	ACTION	1 Fatal			1																								
PEDESTRIANS		64	65	66	67	68	69	70	71	2 Hospitalised			2																								
											3 Injured but not hospitalised			3																							
											4			4																							
											5			5																							
											6			6																							
											7			7																							
											8			8																							
TO 480UDR		74 PASSENGER ACTION				76 PEDESTRIAN ACTION				77 PEDESTRIAN LOCATION				78 SCHOOL PUPILS																							
1 Not suspected		1 boarding				1 none				1 on pedestr. crossing				1 not school pupil																							
2 suspected		2 alighting/unloading				2 walking along road				2 within 50m of pedestr crossing				2 pupil on school journey																							
3 unknown		3 falling from vehicle				3 walking along edge				3 on central refuge				3 pupil not on school journey																							
		4 other				4 walking along edge				4 in road-centre				4 unknown																							
		5 unknown				5 playing on road				5 on footpath/verge																											
		6 unknown				6 on footpath				6 unknown																											
		7 unknown				7 unknown				7 unknown																											
FOR NO OFFICE USE ONLY		79 LOC 1		80 LOC 2		81 LOC 3		82 TYPE		83 TOWN/VILL		84 km POST		85 100m		86 MAP SER		87 MAP CODE																			
		88 X CO-ORDINATE		89 Y CO-ORDINATE		90 MAJOR RD		91 MINOR ROAD		92 NODE 1		93 NODE 2		94 DIRECTION																							
NAMES ADDRESSES PHONES																		WITNESSES		INDEPENDENT WITNESS ?		<input type="checkbox"/> YES		<input type="checkbox"/> NO													
																				INDEPENDENT WITNESS ?		<input type="checkbox"/> YES		<input type="checkbox"/> NO													
																				INDEPENDENT WITNESS ?		<input type="checkbox"/> YES		<input type="checkbox"/> NO													
																				INDEPENDENT WITNESS ?		<input type="checkbox"/> YES		<input type="checkbox"/> NO													
																				INDEPENDENT WITNESS ?		<input type="checkbox"/> YES		<input type="checkbox"/> NO													
WHAT CAUSED THE ACCIDENT?																																					
DRIVER 1 SAID I was travelling down the poreporena H/Way when approaching the New Anderson Supermarket, the vehicle suddenly swirled and overturned.																																					
DRIVER 2 SAID																																					
SAID																																					
SKETCH OF ACCIDENT SCENE: MARK ROAD NAMES, DIRECTIONS, VEHICLE POSITION, SIGNS, SIGNALS, STREET LIGHTS ETC										POLICE DESCRIPTION OF ACCIDENT:																											
										<p>The said vehicle was heading down the Poreporena H/Way from Burn's Peak. As it approached the corner near the new Anderson's Supermarket, the vehicle suddenly ran off onto the median destroying cemented flower pots and overturned on the centre of the opposite lane of the road where damage was caused to the vehicle.</p> <p>Driver was believed to be drunk and was speeding down the mountain therefore caused the accident.</p>																											
SITE LOCATION SKETCH																																					
INVESTIGATING OFFICER'S NAME				RANK		NUMBER		ACTION PROPOSED				SECTION				BREACH NO																					
N. GEORGE				CST		12654		Driver will be arrested & charged for: Negligent driving ESCAPED TO AUSTRIA soon after accident. Sent 19 (D) in T.A																													
DATE SUBMITTED				RANK		NUMBER		CONFIRMED / VARIO																													
1-8-02				CPT		3173		25 above																													
REVIEWING OFFICER'S NAME				RANK		NUMBER																															
G. D. D. D.				CPT		3173																															
DATE																																					
1-8-02																																					

PEDESTRIAN CASUALTY FORM SISSHOUU OUV SIWVA
(PNG)

INDICATE ACCIDENT DETAILS BY DRAWING A CIRCLE ROUND THE APPROPRIATE NUMBER, OR BY WRITING ON THE DOTTED LINES.

Province: NCD Police Station: 4 MILE POLICE STATION

Date Month Year Hour - at time of accident. Accident Number

1 5 0 9 0 2 0 8 0 0 24 hour clock. 8 6 5 / 0 2

Q1. Sex of pedestrian?

1. Male.
 2. Female.

Q2. Age of pedestrian? 33 years.

Q3. What was the pedestrian doing just before the accident?

1. Walking across the road.
 2. Running across the road.
 3. Walking along the road.
 4. Running along the road.
 5. Playing in the road.
 6. Standing in the road.
 7. Getting on/off a vehicle.
 8. Other. EXPLAIN. STANDING ON THE ROAD SIDE ABOUT 7 METRES FROM DRIVEWAY.

Q4. Where was the pedestrian just before the accident?

1. On footpath or track.
 2. On the shoulder of the road.
 3. On the edge of the road.
 4. In the road.
 5. Other. EXPLAIN.....

Q5. IF THE PEDESTRIAN WAS WALKING OR RUNNING ALONG (NOT CROSSING) THE ROAD, WAS THE PEDESTRIAN:

1. Moving against (facing) the traffic.
 2. Moving with (back to) the traffic.
 3. Other. EXPLAIN. STANDING ON THE SIDE OF THE ROAD.
 4. Other. EXPLAIN.....

Q6. Was the pedestrian suspected of being under the influence of:

1. Alcohol.
 2. Beetle.
 3. Drugs.
 4. Other. EXPLAIN. NO.

PLEASE TAKE PARTICULAR CARE WHEN COMPLETING QUESTION 7, 8, AND 9. IF NECESSARY, OBTAIN THE REQUIRED INFORMATION FROM THE CASUALTY'S FRIENDS/RELATIVES OR WITNESSES TO THE ACCIDENT.

Q7. What was the approximate walking distance between the accident site and the pedestrian's home/residence?

1. Up to 100 metres.
 2. 101m to 400 metres.
 3. 401m to 1 kilometre.
 4. Over 1 km to 10 kilometre.
 5. Over 10 kilometre.

Q8. Who was with the pedestrian just before the accident?

1. No one.
 2. Adult(s) over 14 years old.
 3. Child/children under 15 years old.
 4. Adults and child/children.
 5. Other. EXPLAIN.....

Q9. Where was the pedestrian walking TO and FROM just before the accident?

WALKING TO:	WALKING FROM:
1. Home	<input checked="" type="radio"/> 1. Home
<input checked="" type="radio"/> 2. Shop/market	2. Shop/market
3. School	3. School
4. Tavern/bar	4. Tavern/bar
5. Club	5. Club
6. Friend/relative's house	6. Friend/relative's house
7. Nowhere in particular	7. Nowhere in particular
8. Other. EXPLAIN	8. Other. EXPLAIN

<p>Q10. What footpath facilities were there at the accident site?</p> <ol style="list-style-type: none"> 1. None, pedestrian had to walk in the road. 2. Grass/dirt/unpaved footpath. 3. Paved footpath. 4. Other. EXPLAIN..... 	<p>Q13. FOR NIGHTTIME ACCIDENTS ONLY.</p> <p>What were the street lighting conditions at the time of the accident?</p> <ol style="list-style-type: none"> 1. No street light facilities. 2. Street lights lit. 3. Street lights not lit. 4. Other. EXPLAIN..... <p>..... IT WAS ON THE DAY TIME</p>
<p>Q11. How near were any pedestrian crossing facilities to the accident site?</p> <ol style="list-style-type: none"> 1. No facilities within 50 metres. 2. Facilities within 50 metres but were not at the accident site. 3. Accident took place on crossing facility. 4. Other. EXPLAIN..... <p>IF 2 OR 3 ANSWERED, What type of crossing facility was available?</p> <ol style="list-style-type: none"> 1. Uncontrolled crossing. 2. Signal controlled crossing. 3. Signal controlled junction. 4. School patrolled crossing. 5. Subway/Footbridge. 6. Other. EXPLAIN..... 	<p>ANY OTHER COMMENTS.</p> <p>VEHICLE RAN OFF THE ROAD ONTO THE MEDIAN THEN OFF THE ROAD HITTING THE FENCE, CAUSING THE FENCE TO HIT THE VICTIM. SHE SUSTAIN INJURIES TO HER RIGHT ANKLE.</p>
<p>Q12. Was the accident at or within 50 metres of:</p> <ol style="list-style-type: none"> 1. a shop or market. 2. a school. 3. a tavern/bar/club. 4. a factory. 5. an office. 6. a bus stop. 7. Other. EXPLAIN..... 	<p>PLEASE ATTACH THIS FORM TO THE ASSOCIATED TAR 1. AND RETURN TO:</p> <p>DIRECTOR TRAFFIC POLICE HEADQUARTERS P O BOX 85 KONEDOBU</p>

February, 1991

Appendix B – NRSC Act 1997

B.1 Functions

Section 4 of the NRSC Act (the Act) specifically states the following as functions of the NRSC:

- (a) *to determine the goals and objectives in the promotion of road safety in Papua New Guinea; and*
- (b) *to advise the National Government on all matters relating to road safety which the Council may from time to time consider desirable or which the National Government may refer to the Council; and*
- (c) *to recommend to appropriate authorities the adoption of precautionary measures of all kinds calculated to prevent accidents involving the use of motor vehicles; and*
- (d) *to foster, promote and conduct educational campaigns designed to stimulate compliance with acceptable and proven principles of road safety; and*
- (e) *to enlist the aid of all agencies and individuals who in the opinion of the Council are able to promote any acceptable and proven principles of road safety; and*
- (f) *to procure sufficient personnel and finance for purposes of the Council and to co-ordinate and control their use; and*
- (g) *to foster and promote road safety research; and*
- (h) *to determine measures which will lead to the improvement of road safety in Papua New Guinea and to control and co-ordinate the planning and implementation of such measures; and*
- (i) *to monitor and evaluate the effectiveness of programs and strategies of organisations involved in the promotion of road safety; and*
- (j) *to formulate, monitor and update an appropriate long term national programme for the improvement of road safety in Papua New Guinea and to supervise its implementation; and*
- (k) *to consider and implement any other aspects of road safety as may be referred to it from time to time; and*
- (l) *to perform such other functions as are given to it under this Act or any other law; and*
- (m) *to advise the Minister and the National Executive Council on all or any of its functions specified in this section; and*
- (n) *generally, to do all such things as may be incidental or consequential upon the exercise of its powers and the performance of its functions.*

B.2 Funding

The primary named source of funding is through a levy on third party insurance. Specifically, the Act indicates that different rates of levy may be fixed for different types of motor vehicle issued with third party insurance cover (as determined from time to time by the Minister for Transport in consultation with the Minister responsible for finance and planning matters and the insurance Commissioner), but in any event the levy shall not be less than 5% of every third party insurance premium paid.

In addition, funding may also consist of:

- *such monies as are appropriated for the purposes of carrying out and giving effect to the Act;*

- *such monies as may be appropriated annually by Parliament for the purposes of the Act;*
- *monies received by the Council by way of grants and subscriptions;*
- *monies received by the Council for services provided by the Council;*
- *monies earned or arising from any investments; and*
- *all other monies received by the Council in accordance with the Act and in the exercise and performance of its powers, functions and duties.*

B.3 Membership of the NRSC, Meetings and Reporting

The Act sets out membership of the NRSC as follows:

- *the Departmental Head of the Department of Transport and Works, or his nominee;*
- *the Departmental Head of the Department of Finance and Planning, or his nominee;*
- *the Departmental Head of the Department of Health, or his nominee;*
- *the Departmental Head of the Department of Education, or his nominee;*
- *the Departmental Head of the Department of Provincial and Local Government Affairs, or his nominee;*
- *the Departmental Head of the Department of Lands and Physical Planning, or his nominee;*
- *the Commissioner for Police, or his nominee; and*
- *the Executive Director.*

In addition to the above, six other members may make up the NRSC of whom:

- *one member should represent the National Capital District Commission, nominated by that Commission;*
- *one member should represent the Motor Vehicles Insurance Trust, nominated by that Trust;*
- *one member should represent the PNG Chamber of Commerce and Industry, nominated by that Chamber or its equivalent;*
- *one member should represent the National Broadcasting Corporation, nominated by that Commission;*
- *one member should represent the University of Papua New Guinea, nominated by that University; and*
- *one shall represent the Papua New Guinea University of Technology, nominated by that University.*

In relation to subsection (m) of Section 4 of the Act with respect to advising the Minister and National Executive Council on its functions, the NRSC is required to:

- *prepare a Corporate Plan (including a work programme and budget) for approval by the Minister for each year; and*
- *prepare a report detailing progress and the performance of the NRSC.*

Appendix C – Persons Consulted

The following list of people and agencies have been met in order to help prepare this Discussion Paper:

Agency/Organisation	Name	Position	Date
National Capital District Commission	Patrick Ali	A/Senior Asset Engineer	5 May 2010
Department of Transport	Au Morea	Assistant Secretary – Road Safety and Traffic Management	13 May 2010
	Tony Lawson	Legal Adviser - TSSP	17 May 2010
	Tony Minjihau	Lawyer	17 May 2010
Motor Vehicle Insurance Limited	William Penias	Oi/c Vehicle Registration	18 May 2010
Department of Education	Dr Eliakim Apelis	Assistant Secretary – Curriculum Development and Assessment Division	01 June 2010
Royal PNG Constabulary – Traffic Police Directorate	Chief Inspector Michael Kanguma	OIC Traffic - NCD	4 June 2010
	Silas Wayargure	2IC Traffic - NCD	4 June 2010
	Chief Superintendant Winni Henad	Director of Traffic	8 June 2010
St John Ambulance Service	Tim Wieland	Chief Officer	25 June 2010
Central Province Transport Authority	Lavi Kiso	Driving School Instructor	5 August 2010
National Roads Authority	Roy Mumu	Chief Executive	20 August 2010
National Department of Health	Joseph Bitas	Principal Policy Adviser	27 August 2010
Department of Works	Laleo Erasi	First Assistant Secretary	30 August 2010
Port Moresby General Hospital	Dr Sam Yockopua	Director of Accident and Emergency Dept	26 October 2010

Appendix D – Recommendations (by category)

The following list of recommendations is taken from the main body of the Discussion Paper which have been broken down by the categories shown in Section 6 as well as by implementation period. The recommendations should not be read in isolation but should be reviewed in context with the relevant Section of the Discussion Paper.

No	Recommendation	Responsible Implementing Agency	Priority Low/Med/High
TECHNICAL CAPABILITIES			
2	<i>There is a need to carry out extensive training with Traffic Officers of the Police Force to explain the Accident Report Form questions, as well as to clarify its purpose and the importance of completing the Forms and returning them to Police HQ.</i>	Police/NRSC	H
8	<i>TSCMIC to endorse its support of appropriate donor provided technical assistance for capacity building in road safety to ensure a sustainable level of local knowledge and capability.</i>	TSCMIC	H
13	<i>Additional funding and training of dedicated Traffic Police in each of the Provinces is a necessity along with improved specialist training during Police college and the provision of enforcement equipment.</i>	Police	H
42	<i>TSCMIC to consider seeking and endorsing specialist technical advice to the Traffic Police as part of any law and order development and capacity building program.</i>	TSCMIC	H
INSTITUTIONAL ARRANGEMENTS			
9	<i>Review and clarify the roles and responsibilities of the LTD to ensure duplication with NRSC doesn't occur, <u>or</u> implement the recommendations set out in the Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services report (prepared as input to the National Transport Strategy) with respect to the establishment of a Road Traffic Authority (RTA).</i>	DoT	H
10	<i>Ensure road controlling authorities are legally responsible for monitoring and improving road safety on their network.</i>	DoT/NRSC	H
11	<i>Identify a 'road safety champion' within DoW with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	DoW	H
12	<i>Identify a 'road safety champion' within NRA with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	NRA	H
ROAD SAFETY STRATEGY			
7	<i>Develop a national road safety strategy in conjunction with stakeholders and partners to help guide future long term road safety activity and establish an action plan and committed funding to deliver the plan with appropriate monitoring tools used to measure its effectiveness.</i>	NRSC/DoT	H

27	<i>A future national road safety strategy to be developed incorporating final outcome targets.</i>	NRSC	H
28	<i>A future national road safety strategy to be developed incorporating intermediate outcome targets which will define those targets to be monitored and provide funding for undertaking such survey work. Such monitoring should include vehicle defects through changes to the collation of data as well as consideration by the DoW/NRA to fund an iRAP study of their network to establish the current road safety condition.</i>	NRSC	H

LEAD AGENCY COORDINATION			
15	<i>Re-establish the NRSC Board as quickly as possible (with or without the full complement of members) to ensure some level of high level discussion and coordination can occur.</i>	NRSC	H
16	<i>Review Board representation to ensure only relevant agencies that can directly influence road safety are represented. Non relevant (or interested) agencies should be removed from the Board and the only most pertinent organisations included.</i>	NRSC	H
26	<i>The Police, through the NRSC Board, and with NRSC Secretariat support to develop enforcement plans targeting various particular behaviour throughout the year, with NRSC to try and raise funding to develop supporting advertising campaigns. Coordinated awareness and enforcement campaigns must be carried out – with those agencies wishing to undertake major road safety promotional activities (e.g. MVIL) encouraged to work through the NRSC Board. As part of the above, a road safety calendar indicating enforcement and supporting advertising initiatives throughout the year should be developed to guide annual activities thereby also giving NRSC time to plan specific advertising campaigns based on good practice.</i>	Police/NRSC	H
29	<i>Outputs to be monitored to be agreed by way of an MOU between the NRSC Board and the various implementing agencies.</i>	NRSC	H
17	<i>Subject to funding and/or the merging of institutions, establish Provincial Road Safety Committees serviced by provincial offices of the NRSC. Such offices however should carry out the full roles of the NRSC rather than simply focus on vehicle inspections. As part of this, training of staff will be an essential component.</i>	NRSC	M
18	<i>Formalise MOUs between agencies where mutually beneficial activities occur in order to help strengthen and build relationships.</i>	All	M
64	<i>NRSC to work with relevant Government Departments to ensure road safety is considered in future provincial plans as a by- product of other planning initiatives.</i>	NRSC	M
69	<i>NRSC to support Department of Health in their attempts to improve emergency services including any improvement to the 111 system.</i>	NRSC/DoH	M
71	<i>NRSC to try and work in conjunction with the Department of Health to promote healthy lifestyles where cross-sector</i>	NRSC/DoH	M

	<i>issues exist such as alcohol abuse – and its impact on drink-driving and/or drunk pedestrians.</i>		
25	<i>Subject to funding, NRSC to consider the employment of a lawyer in due course to provide the necessary advice and drive to change legislation in the absence of a strong push from other areas such as DoT.</i>	NRSC	L

DATA SYSTEMS, MONITORING AND EVALUATION			
1	<i>DoW and NRA to consider including safety as a monitoring criteria for their roads with respect to 'good' condition rather than simply surface condition/operating speed – see Section 4.8.2 with respect to the international Road Assessment Program (iRAP).</i>	DoW/NRA	M
3	<i>In due course, there is a need to review and possibly further refine the Police Road Accident Report Form with respect to the questions that are asked, including making the Form into A4 size and/or allowing for carbon copies to be made so that the NRSC, as part of its task of updating the accident database, can more easily obtain a copy.</i>	Police/NRSC	M
4	<i>An MOU between the Police, NRSC and Dept of Statistics is required defining a road accident fatality. Whilst this would ideally be over a 30 day period, practicalities may prevent this from happening and consensus on the matter should be reached.</i>	Police/NRSC	M
5	<i>An MOU between the Police and NRSC detailing agreed actions and responsibilities for the sharing of information is required, including an agreement with respect allowing direct accident data entry into MAAP rather than the current double-handling approach e.g. either placing computers in Police HQ or using carbon copy police report forms as part of any re-vamp of the accident report forms.</i>	Police/NRSC	M
31	<i>NRSC to ensure accident data is updated and available on its website as and when data is available, along with hard copies being made printed and sent to relevant agencies/authorities. NRSC to also ensure suitable road safety advice is set out on its website.</i>	NRSC	M

ROAD SAFETY INITIATIVES			
21	<i>NRSC to continue seeking advertising sponsorship for their own campaigns and/or to help agencies/ organisations wishing to carry out their own road safety promotion by coordinating activities and ensuring such promotions are targeted at issues identified as local issues in accordance with any future road safety strategy/plan.</i>	NRSC	H
23	<i>NRSC to support and assist the DoT to carry out their proposed review of the existing Motor Traffic Act and Regulations.</i>	DoT/NRSC	H
24	<i>The review of legislation (including fines and penalties) being carried out by the DoT should consider all issues relating to road safety through the development of Working Party reports.</i>	DoT/NRSC	H
30	<i>Subject to implementing agencies receiving sufficient funding, consider setting up a demonstration project involving</i>	NRSC/All	H

	<i>engineering, enforcement and awareness road safety activities for a specific length of road.</i>		
34	<i>Following the set up of the accident database to allow the past 3 - 5 years worth of crash data to be analysed, NRSC to identify the top 25-50 hazardous locations on the road network. Following this, NRSC should approach relevant road controlling authorities with a view to undertaking crash reduction studies (in conjunction with local engineers, the Police and other interested parties) to identify contributory factors and possible solutions for the road controlling authority to implement. It is imperative that a range of people and organisations be involved in the process in order to maximise awareness and increase local capability through hands-on experience, and that the road controlling authorities ensure funds are available to implement identified treatments.</i>	NRSC	H
35	<i>Lessons learnt previously need to be more widely distributed to road controlling authorities and their designers, with road designs/rehabilitation work being subject to road safety audits.</i>	DoT/NRSC	H
36	<i>DoW to develop and implement a policy requiring all road projects (including maintenance and rehabilitation) over a certain amount to be road safety audited.</i>	DoW	H
37	<i>Road Controlling Authorities (RCASs) such as NRA, DoW and NCDC, when employing auditors, to ensure local staff from other organisations are involved in the process to gain experience/increase exposure.</i>	RCAs	H
38	<i>Consideration should be given to requiring all road projects with government funding over a certain amount to be road safety audited at appropriate stages of design, taking account of the complexity and cost of the project.</i>	DoT	H
39	<i>Road controlling authorities through their asset maintenance activities broaden their consideration beyond simply reviewing the road surface and take safety into account in future road inspections. This in turn requires assets and their condition to be documented in an asset inventory.</i>	RCAs	H
40	<i>The existing legislation with respect to the setting of speed limits and its enforcement needs to be updated and consolidated with respect to the legal responsibility for setting and denoting speed limits, defining sanctions for those that break the speed limit and equipment specifications for enforcement. Such a review should also consider the maximum default speed limits – for instance the potential to reduce urban speed limits to 50km/h whilst allowing for other higher speed limits to be set along specific urban routes and corridors.</i>	DoT/NRSC	H
41	<i>Re-equip and train the Traffic Police to use speed measuring equipment for enforcement purposes. Equipment should be hand held/vehicle mounted rather than static cameras given the high potential for vandalism/theft of such equipment. Technicians also need to be trained to ensure calibration can occur – potentially through the National Institute of Standards and Industrial Technology or alternatives such as in Australia.</i>	Police	H
43	<i>Establish a speeding Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out survey of existing beliefs/public knowledge and carry out speed surveys), develop and implement a speeding program and undertake</i>	NRSC	H

	<i>monitoring.</i>		
44	<i>Revise existing legislation to quantify the extent to which a driver is deemed to be under the influence of alcohol through the use of Breath Alcohol Concentrations with due consideration given to different types of drivers and levels of experience.</i>	DoT/NRSC	H
45	<i>Equip and train the Traffic Police to use breathalysers. As part of this, specialist overseas advice to the Police should be sought or provided downstream as part of the current AusAID Transport Sector Support Program.</i>	Police	H
46	<i>Establish a drink-drive Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out an updated survey of existing beliefs/public knowledge), develop and implement a drink-drive program and undertake monitoring.</i>	NRSC	H
48	<i>Include the need for all occupants of all vehicles to wear seatbelts (where fitted) in a review of legislation – not just Class 1 vehicles. Given difficulties with retrofitting the fitting of seatbelts to some vehicles such as PMVs, it may be necessary to stage the implementation with a requirement of all future imported vehicles (including PMVs) to have fitted seatbelts that meet PNG standards.</i>	DoT/NRSC	H
49	<i>Establish a seat belt wearing Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Best Practice Guidelines on Planning and Managing a Seat Belt Program and the implementation of Interventions through enforcement of seatbelt wearing and supporting promotional activities. As part of this, carry out seatbelt wearing surveys to help determine the effectiveness of campaigns and to assist with the refinement of future campaigns.</i>	NRSC	H
51	<i>There is a strong need to align community awareness campaigns (regardless of who instigates them) with better enforcement to ensure a coordinated approach. NRSC should take a more proactive role in assisting with this coordination to maximise benefits.</i>	NRSC	H
59	<i>Require PMV drivers to sit an additional practical driving test given their role moving large numbers of the general public.</i>	DoT/Police	H
62	<i>Traffic Police to undertake visible mobile enforcement of all motor traffic legislation through patrols rather than primarily relying on road blocks aimed primarily at vehicle compliance. Such enforcement should be planned – for instance high levels of enforcement over specific routes/areas targeting particular behaviours at different times of the year.</i>	Police	H
63	<i>Whilst restrictions (and enforcement) on the ability to travel unsecured in the rear tray of a vehicle (e.g. without a roll bar) would greatly improve road safety, such a measure would have huge implications on personal travel. As such, it is suggested that such a move would not be generally supported by the public/politicians at this time but wider education/promotion of the risks associated with such travel behaviour should be carried out to start the awareness process.</i>	DoT/NRSC	H

68	<i>Given that there is undoubtedly a need for vehicle inspections, consideration should be given to changing legislation to allow gazetted persons (not just public servants) to carry out vehicle inspections.</i>	DoT/NRSC	H
60	<i>Develop specialist driver testers with respect to heavy vehicles.</i>	NRSC/Police	M/H
14	<i>NRSC to continue chasing up the Department of Education with the aim of preparing appropriate resources for inclusion in the school curriculum for different age ranges. In due course, there will be a need to identify and obtain appropriate sponsorship to help print and distribute the material.</i>	NRSC/Dept of Education	M
32	<i>Following the passing into law of the Roads (Classification and Standards) Regulations 2010, broad consultation will be needed to develop and agree a single set of design standards for use in PNG. It is presumed that NRA will take the lead on this matter given that the Regulations fall under the NRA Act.</i>	NRA	M
33	<i>Undertake a complete overhaul of the traffic signs and markings in the Motor Traffic Regulations and provide suitable guidance to designers on the use of such traffic control devices – for instance by reference to a single standard such as AS1742, including reference to material specifications.</i>	DoT/NRSC	M
47	<i>Update the Motor Traffic Code and include a section on driving under the influence of alcohol/drugs - see also Recommendation 57</i>	NRSC/Police	M
50	<i>NRSC to continue to try and work with the Department of Education with the aim of preparing suitable teaching material and aids for a range of ages with an aim of distributing the developed material to schools across PNG – see also Recommendation 14.</i>	NRSC/Min of Education	M
53	<i>Consider implementing restrictions on Provisional License holders.</i>	DoT	M
57	<i>NRSC in conjunction with partners to revise and update the Motor Traffic Handbook to incorporate additional information and to be printed in both English and Pidgin. Sponsorship will also need to be sought to support its re-printing and wider distribution.</i>	NRSC/Police	M
58	<i>Prepare a new standardised driver testing procedure including a formal oral test with set questions to be asked covering traffic regulations, vehicle handling, vehicle manoeuvre procedures, hazard perception and the effect of weather and road conditions on vehicle handling.</i>	NRSC/Police	M
61	<i>Investigate the potential to transfer driver testing to the private sector through the use of approved/authorised testers, including heavy vehicles given the potential for demand to make such an activity financially viable.</i>	DoT	M
66	<i>LTD to undertake rigorous audits on AIS and consider rationalising the number of AIS taking account of quality/performance of such stations and the number required in order to service the wider population.</i>	DoT	M
67	<i>Ensure Authorised Inspection Stations are capable of inspecting all vehicles to which they are permitted to do so, including heavy vehicles.</i>	DoT	M
70	<i>Include first aid treatment in a revised Motor Traffic Handbook and support attempts by the Red Cross to make first aid</i>	NRSC	M

	<i>training a pre-requirement of obtaining a driving license.</i>		
55	<i>Develop a system whereby driving instructors can be trained and approved to provide official driver training based on a set curriculum.</i>	DoT/NRSC	L/M
65	<i>Undertake a detailed review of existing motor vehicle standards with reference to good practice and consider setting minimum importation standards for imported vehicles with the intention of being re-sold. It is noted that this approach requires vehicles to be inspected to ensure they meet the stated standards (either at the country of origin and/or at arrival in PNG) and runs the risk of forcing vehicle prices up, which may have an impact on access given a reduction in the availability of reasonably priced vehicles.</i>	DoT	L/M
52	<i>Review the 3 month time limit for learner licenses and consider extending.</i>	DoT	L
54	<i>Clarify rationale for different license time period lengths and if appropriate, simplify and provide one consistent time period of issue.</i>	DoT	L
56	<i>Ensure drivers seeking learner licenses receive a copy of the Motor Traffic Code as part of their learner fee.</i>	Various	L

FUNDING AND SOCIAL COSTS			
6	<i>NRSC (possibly in conjunction with National Research Institute for example), to undertake a study to determine the social costs of accidents by severity. In the absence of available funding, finance to be sought through the 2012 Development Budget process.</i>	NRSC	H
19	<i>Increase the existing minimum 5% levy on 3rd party insurance to at least 10% (and/or more for those vehicle types at greatest risk) to better fund NRSC activities and functions e.g. awareness campaigns and carrying out those management activities identified previously.</i>	Govt	H
22	<i>Ideally establish a separately funded road safety program, administered and audited by an appropriate government agency that does not have direct control of activities that the funds can be spent on (to provide separation of the funder and service providers). Alternatively, encourage the DoW and Police to seek specific funding for road safety in annual budget applications.</i>	All	H
20	<i>Consider requiring future major road building/road improvement projects that will have a significant impact on local communities that the road passes through to set aside a small percentage of the total cost for road safety enforcement and/or awareness on the improved section of road, subject to monitoring and evaluation plus auditable records of activities and costs being kept.</i>	DoW/NRA	M

Appendix E – Recommendations (by agency)

The following list of recommendations is taken from the main body of the Discussion Paper, which have been broken down by the proposed implementing agency as well as by implementation period. The recommendations should not be read in isolation but should be reviewed in context with the relevant Section of the Discussion Paper. (Note: those recommendations with joint responsibility are included in all relevant Agency recommendations.)

No	Recommendation	Responsible Implementing Agency	Priority Low/Med/High
NRSC			
2	<i>There is a need to carry out extensive training with Traffic Officers of the Police Force to explain the Accident Report Form questions, as well as to clarify its purpose and the importance of completing the Forms and returning them to Police HQ.</i>	Police/NRSC	H
6	<i>NRSC (possibly in conjunction with National Research Institute for example), to undertake a study to determine the social costs of accidents by severity. In the absence of available funding, finance to be sought through the 2012 Development Budget process.</i>	NRSC	H
7	<i>Develop a national road safety strategy in conjunction with stakeholders and partners to help guide future long term road safety activity and establish an action plan and committed funding to deliver the plan with appropriate monitoring tools used to measure its effectiveness.</i>	NRSC/DoT	H
10	<i>Ensure road controlling authorities are legally responsible for monitoring and improving road safety on their network.</i>	DoT/NRSC	H
15	<i>Re-establish the NRSC Board as quickly as possible (with or without the full complement of members) to ensure some level of high level discussion and coordination can occur.</i>	NRSC	H
16	<i>Review Board representation to ensure only relevant agencies that can directly influence road safety are represented. Non relevant (or interested) agencies should be removed from the Board and the only most pertinent organisations included.</i>	NRSC	H
21	<i>NRSC to continue seeking advertising sponsorship for their own campaigns and/or to help agencies/organisations wishing to carry out their own road safety promotion by coordinating activities and ensuring such promotions are targeted at issues identified as local issues in accordance with any future road safety strategy/plan.</i>	NRSC	H
23	<i>NRSC to support and assist the DoT to carry out their proposed review of the existing Motor Traffic Act and Regulations.</i>	DoT/NRSC	H
24	<i>The review of legislation (including fines and penalties) being carried out by the DoT should consider all issues relating to road safety through the development of Working Party reports.</i>	DoT/NRSC	H
26	<i>The Police, through the NRSC Board, and with NRSC Secretariat support to develop enforcement plans targeting various particular behaviour throughout the year, with NRSC to try and raise funding to develop supporting advertising campaigns. Coordinated awareness and enforcement campaigns must be carried out – with those agencies wishing to undertake major road safety promotional activities (e.g. MVIL) encouraged to work through the NRSC Board. As part of the above, a road safety calendar indicating enforcement and supporting advertising initiatives throughout the</i>	Police/NRSC	H

	<i>year should be developed to guide annual activities thereby also giving NRSC time to plan specific advertising campaigns based on good practice.</i>		
27	<i>A future national road safety strategy to be developed incorporating final outcome targets.</i>	NRSC	H
28	<i>A future national road safety strategy to be developed incorporating intermediate outcome targets which will define those targets to be monitored and provide funding for undertaking such survey work. Such monitoring should include vehicle defects through changes to the collation of data as well as consideration by the DoW/NRA to fund an iRAP study of their network to establish the current road safety condition.</i>	NRSC	H
29	<i>Outputs to be monitored to be agreed by way of an MOU between the NRSC Board and the various implementing agencies.</i>	NRSC	H
30	<i>Subject to implementing agencies receiving sufficient funding, consider setting up a demonstration project involving engineering, enforcement and awareness road safety activities for a specific length of road.</i>	NRSC/All	H
34	<i>Following the set up of the accident database to allow the past 3 - 5 years worth of crash data to be analysed, NRSC to identify the top 25-50 hazardous locations on the road network. Following this, NRSC should approach relevant road controlling authorities with a view to undertaking crash reduction studies (in conjunction with local engineers, the Police and other interested parties) to identify contributory factors and possible solutions for the road controlling authority to implement. It is imperative that a range of people and organisations be involved in the process in order to maximise awareness and increase local capability through hands-on experience, and that the road controlling authorities ensure funds are available to implement identified treatments.</i>	NRSC	H
35	<i>Lessons learnt previously need to be more widely distributed to road controlling authorities and their designers, with road designs/rehabilitation work being subject to road safety audits.</i>	DoT/NRSC	H
40	<i>The existing legislation with respect to the setting of speed limits and its enforcement needs to be updated and consolidated with respect to the legal responsibility for setting and denoting speed limits, defining sanctions for those that break the speed limit and equipment specifications for enforcement. Such a review should also consider the maximum default speed limits – for instance the potential to reduce urban speed limits to 50km/h whilst allowing for other higher speed limits to be set along specific urban routes and corridors.</i>	DoT/NRSC	H
43	<i>Establish a speeding Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out survey of existing beliefs/public knowledge and carry out speed surveys), develop and implement a speeding program and undertake monitoring.</i>	NRSC	H
44	<i>Revise existing legislation to quantify the extent to which a driver is deemed to be under the influence of alcohol through the use of Breath Alcohol Concentrations with due consideration given to different types of drivers and levels</i>	DoT/NRSC	H

	<i>of experience.</i>		
46	<i>Establish a drink-drive Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Good Practice Guide, including carrying out a full situational analysis (e.g. carrying out an updated survey of existing beliefs/public knowledge), develop and implement a drink-drive program and undertake monitoring.</i>	NRSC	H
48	<i>Include the need for all occupants of all vehicles to wear seatbelts (where fitted) in a review of legislation – not just Class 1 vehicles. Given difficulties with retrofitting the fitting of seatbelts to some vehicles such as PMVs, it may be necessary to stage the implementation with a requirement of all future imported vehicles (including PMVs) to have fitted seatbelts that meet PNG standards.</i>	DoT/NRSC	H
49	<i>Establish a seat belt wearing Sub-Committee to the NRSC Board and follow the actions/recommendations set down in the GRSP Best Practice Guidelines on Planning and Managing a Seat Belt Program and the implementation of Interventions through enforcement of seatbelt wearing and supporting promotional activities. As part of this, carry out seatbelt wearing surveys to help determine the effectiveness of campaigns and to assist with the refinement of future campaigns.</i>	NRSC	H
51	<i>There is a strong need to align community awareness campaigns (regardless of who instigates them) with better enforcement to ensure a coordinated approach. NRSC should take a more proactive role in assisting with this coordination to maximise benefits.</i>	NRSC	H
63	<i>Whilst restrictions (and enforcement) on the ability to travel unsecured in the rear tray of a vehicle (e.g. without a roll bar) would greatly improve road safety, such a measure would have huge implications on personal travel. As such, it is suggested that such a move would not be generally supported by the public/politicians at this time but wider education/promotion of the risks associated with such travel behaviour should be carried out to start the awareness process.</i>	DoT/NRSC	H
68	<i>Given that there is undoubtedly a need for vehicle inspections, consideration should be given to changing legislation to allow gazetted persons (not just public servants) to carry out vehicle inspections.</i>	DoT/NRSC	H
60	<i>Develop specialist driver testers with respect to heavy vehicles.</i>	NRSC/Police	M/H
3	<i>In due course, there is a need to review and possibly further refine the Police Road Accident Report Form with respect to the questions that are asked, including making the Form into A4 size and/or allowing for carbon copies to be made so that the NRSC, as part of its task of updating the accident database, can more easily obtain a copy.</i>	Police/NRSC	M
4	<i>An MOU between the Police, NRSC and Dept of Statistics is required defining a road accident fatality. Whilst this would ideally be over a 30 day period, practicalities may prevent this from happening and consensus on the matter should be reached.</i>	Police/NRSC	M
5	<i>An MOU between the Police and NRSC detailing agreed actions and responsibilities for the sharing of information is</i>	Police/NRSC	M

	<i>required, including an agreement with respect allowing direct accident data entry into MAAP rather than the current double-handling approach e.g. either placing computers in Police HQ or using carbon copy police report forms as part of any re-vamp of the accident report forms.</i>		
14	<i>NRSC to continue chasing up the Department of Education with the aim of preparing appropriate resources for inclusion in the school curriculum for different age ranges. In due course, there will be a need to identify and obtain appropriate sponsorship to help print and distribute the material.</i>	NRSC/DoEdu	M
17	<i>Subject to funding and/or the merging of institutions, establish Provincial Road Safety Committees serviced by provincial offices of the NRSC. Such offices however should carry out the full roles of the NRSC rather than simply focus on vehicle inspections. As part of this, training of staff will be an essential component.</i>	NRSC	M
18	<i>Formalise MOUs between agencies where mutually beneficial activities occur in order to help strengthen and build relationships.</i>	All	M
31	<i>NRSC to ensure accident data is updated and available on its website as and when data is available, along with hard copies being made printed and sent to relevant agencies/authorities. NRSC to also ensure suitable road safety advice is set out on its website.</i>	NRSC	M
33	<i>Undertake a complete overhaul of the traffic signs and markings in the Motor Traffic Regulations and provide suitable guidance to designers on the use of such traffic control devices – for instance by reference to a single standard such as AS1742, including reference to material specifications.</i>	DoT/NRSC	M
47	<i>Update the Motor Traffic Code and include a section on driving under the influence of alcohol/drugs - see also Recommendation 57.</i>	NRSC/Police	M
50	<i>NRSC to continue to try and work with the Department of Education with the aim of preparing suitable teaching material and aids for a range of ages with an aim of distributing the developed material to schools across PNG – see also Recommendation 14.</i>	NRSC/Dept of Education	M
57	<i>NRSC in conjunction with partners to revise and update the Motor Traffic Handbook to incorporate additional information and to be printed in both English and Pidgin. Sponsorship will also need to be sought to support its re-printing and wider distribution.</i>	NRSC/Police	M
58	<i>Prepare a new standardised driver testing procedure including a formal oral test with set questions to be asked covering traffic regulations, vehicle handling, vehicle manoeuvre procedures, hazard perception and the effect of weather and road conditions on vehicle handling.</i>	NRSC/Police	M
64	<i>NRSC to work with relevant Government Departments to ensure road safety is considered in future provincial plans as a by-product of other planning initiatives.</i>	NRSC	M
69	<i>NRSC to support Department of Health in their attempts to improve emergency services including any improvement to</i>	NRSC/DoH	M

	<i>the 111 system.</i>		
70	<i>Include first aid treatment in a revised Motor Traffic Handbook and support attempts by the Red Cross to make first aid training a pre-requirement of obtaining a driving license.</i>	NRSC	M
71	<i>NRSC to try and work in conjunction with the Department of Health to promote healthy lifestyles where cross-sector issues exist such as alcohol abuse – and its impact on drink-driving and/or drunk pedestrians.</i>	NRSC/DoH	M
56	<i>Develop a system whereby driving instructors can be trained and approved to provide official driver training based on a set curriculum.</i>	DoT/NRSC	L/M
25	<i>Subject to funding, NRSC to consider the employment of a lawyer in due course to provide the necessary advice and drive to change legislation in the absence of a strong push from other areas such as DoT.</i>	NRSC	L

DEPARTMENT OF TRANSPORT			
7	<i>Develop a national road safety strategy in conjunction with stakeholders to help guide future long term road safety activity and establish an action plan and committed funding to deliver the plan with appropriate monitoring tools used to measure its effectiveness.</i>	NRSC/DoT	H
9	<i>Review and clarify the roles and responsibilities of the LTD to ensure duplication with NRSC doesn't occur, <u>or</u> implement the recommendations set out in the Institutional Arrangements and Regulation of Vehicles, Drivers and Transport Services report (prepared as input to the National Transport Strategy) with respect to the establishment of a Road Traffic Authority (RTA).</i>	DoT	H
10	<i>Ensure road controlling authorities are legally responsible for monitoring and improving road safety on their network.</i>	DoT/NRSC	H
23	<i>NRSC to support and assist the DoT to carry out their proposed review of the existing Motor Traffic Act and Regulations.</i>	DoT/NRSC	H
24	<i>The review of legislation (including fines and penalties) being carried out by the DoT should consider all issues relating to road safety through the development of Working Party reports (as prepared for PMVs by DoT).</i>	DoT/NRSC	H
35	<i>Lessons learnt previously need to be more widely distributed to road controlling authorities and their designers, with road designs/rehabilitation work being subject to road safety audits.</i>	DoT/NRSC	H
38	<i>Consideration should be given to requiring all road projects with government funding over a certain amount to be road safety audited at appropriate stages of design, taking account of the complexity and cost of the project.</i>	DoT	H
40	<i>The existing legislation with respect to the setting of speed limits and its enforcement needs to be updated and consolidated with respect to the legal responsibility for setting and denoting speed limits, defining sanctions for those that break the speed limit and equipment specifications for enforcement. Such a review should also consider the maximum default speed limits – for instance the potential to reduce urban speed limits to 50km/h.</i>	DoT/NRSC	H

44	<i>Revise existing legislation to quantify the extent to which a driver is deemed to be under the influence of alcohol through the use of Breath Alcohol Concentrations with due consideration given to different types of drivers and levels of experience.</i>	DoT/NRSC	H
48	<i>Include the need for all occupants of all vehicles to wear seatbelts (where fitted) in a review of legislation – not just Class 1 vehicles. Given difficulties with retrofitting the fitting of seatbelts to some vehicles such as PMVs, it may be necessary to stage the implementation with a requirement of all future imported vehicles (including PMVs) to have fitted seatbelts that meet PNG standards.</i>	DoT/NRSC	H
59	<i>Require PMV drivers to sit an additional practical driving test given their role moving large numbers of the general public.</i>	DoT/Police	H
63	<i>Whilst restrictions (and enforcement) on the ability to travel unsecured in the rear tray of a vehicle (e.g. without a roll bar) would greatly improve road safety, such a measure would have huge implications on personal travel. As such, it is suggested that such a move would not be generally supported by the public/politicians at this time but wider education/promotion of the risks associated with such travel behaviour should be carried out to start the awareness process.</i>	DoT/NRSC	H
68	<i>Given that there is undoubtedly a need for vehicle inspections, consideration should be given to changing legislation to allow gazetted persons (not just public servants) to carry out vehicle inspections.</i>	DoT/NRSC	H
33	<i>Undertake a complete overhaul of the traffic signs and markings in the Motor Traffic Regulations and provide suitable guidance to designers on the use of such traffic control devices – for instance by reference to a single standard such as AS1742, including reference to material specifications.</i>	DoT/NRSC	M
53	<i>Consider implementing restrictions on Provisional License holders.</i>	DoT	M
61	<i>Investigate the potential to transfer driver testing to the private sector through the use of approved/authorised testers, including heavy vehicles given the potential for demand to make such an activity financially viable.</i>	DoT	M
66	<i>LTD to undertake rigorous audits on AIS and consider rationalising the number of AIS taking account of quality/performance of such stations and the number required in order to service the wider population.</i>	DoT	M
67	<i>Ensure Authorised Inspection Stations are capable of inspecting all vehicles to which they are permitted to do so, including heavy vehicles.</i>	DoT	M
56	<i>Develop a system whereby driving instructors can be trained and approved to provide official driver training based on a set curriculum.</i>	DoT/NRSC	L/M
65	<i>Undertake a detailed review of existing motor vehicle standards with reference to good practice and consider setting minimum importation standards for imported vehicles with the intention of being re-sold. It is noted that this approach requires vehicles to be inspected to ensure they meet the stated standards (either at the country of origin and/or at</i>	DoT	L/M

	<i>arrival in PNG) and runs the risk of forcing vehicle prices up, which may have an impact on access given a reduction in the availability of reasonably priced vehicles.</i>		
52	<i>Review the 3 month time limit for learner licenses and consider extending.</i>	DoT	L
54	<i>Clarify rationale for different license time period lengths and if appropriate, simplify and provide one consistent time period of issue.</i>	DoT	L
55	<i>Ensure drivers seeking learner licenses receive a copy of the Motor Traffic Code as part of their learner fee.</i>	Various	L

POLICE			
13	<i>Additional funding and training of dedicated Traffic Police in each of the Provinces is a necessity along with improved specialist training during Police college and the provision of enforcement equipment.</i>	Police	H
41	<i>Re-equip and train the Traffic Police to use speed measuring equipment for enforcement purposes. Equipment should be hand held/vehicle mounted rather than static cameras given the high potential for vandalism/theft of such equipment. Technicians also need to be trained to ensure calibration can occur – potentially through the National Institute of Standards and Industrial Technology or alternatives such as in Australia.</i>	Police	H
45	<i>Equip and train the Traffic Police to use breathalysers. As part of this, specialist overseas advice to the Police should be sought or provided downstream as part of the current AusAID Transport Sector Support Program.</i>	Police	H
59	<i>Require PMV drivers to sit an additional practical driving test given their role moving large numbers of the general public.</i>	DoT/Police	H
62	<i>Traffic Police to undertake visible mobile enforcement of all motor traffic legislation through patrols rather than primarily relying on road blocks aimed primarily at vehicle compliance. Such enforcement should be planned – for instance high levels of enforcement over specific routes/areas targeting particular behaviours at different times of the year.</i>	Police	H
60	<i>Develop specialist driver testers with respect to heavy vehicles.</i>	NRSC/Police	M/H
3	<i>In due course, there is a need to review and possibly further refine the Police Road Accident Report Form with respect to the questions that are asked, including making the Form into A4 size and/or allowing for carbon copies to be made so that the NRSC, as part of its task of updating the accident database, can more easily obtain a copy.</i>	Police/NRSC	M
4	<i>An MOU between the Police, NRSC and Dept of Statistics is required defining a road accident fatality. Whilst this would ideally be over a 30 day period, practicalities may prevent this from happening and consensus on the matter should be reached.</i>	Police/NRSC	M
5	<i>An MOU between the Police and NRSC detailing agreed actions and responsibilities for the sharing of information is required, including an agreement with respect allowing direct accident data entry into MAAP rather than the current</i>	Police/NRSC	M

	<i>double-handling approach e.g. either placing computers in Police HQ or using carbon copy police report forms as part of any re-vamp of the accident report forms.</i>		
47	<i>Update the Motor Traffic Code and include a section on driving under the influence of alcohol/drugs - see also Recommendation 57</i>	NRSC/Police	M
57	<i>NRSC in conjunction with partners to revise and update the Motor Traffic Handbook to incorporate additional information and to be printed in both English and Pidgin. Sponsorship will also need to be sought to support its re-printing and wider distribution.</i>	NRSC/Police	M
58	<i>Prepare a new standardised driver testing procedure including a formal oral test with set questions to be asked covering traffic regulations, vehicle handling, vehicle manoeuvre procedures, hazard perception and the effect of weather and road conditions on vehicle handling.</i>	NRSC/Police	M

ROAD CONTROLLING AUTHORITIES: DoW, NRA, NCDC, PROVINCIAL AND LOCAL LEVEL GOVERNMENT			
11	<i>Identify a 'road safety champion' within DoW with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	DoW	H
12	<i>Identify a 'road safety champion' within NRA with responsibility to ensure road safety is considered within all aspects of DoW projects and to work side-by-side with the NRSC, including ensuring road safety audits of designs are included within contracts.</i>	NRA	H
36	<i>DoW to develop and implement a policy requiring all road projects (including maintenance and rehabilitation) over a certain amount to be road safety audited.</i>	DoW	H
37	<i>Road Controlling Authorities (RCASs) such as NRA, DoW and NCDC, when employing auditors, to ensure local staff from other organisations are involved in the process to gain experience/increase exposure.</i>	RCAs	H
39	<i>Road controlling authorities through their asset maintenance activities broaden their consideration beyond simply reviewing the road surface and take safety into account in future road inspections. This in turn requires assets and their condition to be documented in an asset inventory.</i>	RCAs	H
1	<i>DoW and NRA to consider including safety as a monitoring criteria for their roads with respect to 'good' condition rather than simply surface condition/operating speed – see Section 4.8.2 with respect to the international Road Assessment Program (iRAP).</i>	DoW/NRA	M
20	<i>Consider requiring future major road building/road improvement projects that will have a significant impact on local communities that the road passes through to set aside a small percentage of the total cost for road safety enforcement and/or awareness on the improved section of road, subject to monitoring and evaluation plus auditable</i>	DoW/NRA	M

	<i>records of activities and costs being kept.</i>		
32	<i>Following the passing into law of the Roads (Classification and Standards) Regulations 2010, broad consultation will be needed to develop and agree a single set of design standards for use in PNG. It is presumed that NRA will take the lead on this matter given that the Regulations fall under the NRA Act.</i>	NRA	M

DEPARTMENT OF EDUCATION			
14	<i>NRSC to continue chasing up the Department of Education with the aim of preparing appropriate resources for inclusion in the school curriculum for different age ranges. In due course, there will be a need to identify and obtain appropriate sponsorship to help print and distribute the material.</i>	NRSC/Dept of Education	M
50	<i>NRSC to continue to try and work with the Department of Education with the aim of preparing suitable teaching material and aids for a range of ages with an aim of distributing the developed material to schools across PNG – see also Recommendation 14.</i>	NRSC/Dept of Education	M

DEPARTMENT OF HEALTH			
69	<i>NRSC to support Department of Health in their attempts to improve emergency services including any improvement to the 111 system.</i>	NRSC/DoH	M
71	<i>NRSC to try and work in conjunction with the Department of Health to promote healthy lifestyles where cross-sector issues exist such as alcohol abuse – and its impact on drink-driving and/or drunk pedestrians.</i>	NRSC/DoH	M

OTHERS			
8	<i>TSCMIC to endorse its support of appropriate donor provided technical assistance for capacity building in road safety to ensure a sustainable level of local knowledge and capability.</i>	TSCMIC	H
42	<i>TSCMIC to consider seeking and endorsing specialist technical advice to the Traffic Police as part of any law and order development and capacity building program.</i>	TSCMIC	H
19	<i>Increase the existing minimum 5% levy on 3rd party insurance to at least 10% (and/or more for those vehicle types at greatest risk) to better fund NRSC activities and functions e.g. awareness campaigns and carrying out those management activities identified previously.</i>	Govt - Treasury	H
22	<i>Ideally establish a separately funded road safety program, administered and audited by an appropriate government agency that does not have direct control of activities that the funds can be spent on (to provide separation of the funder and service providers). Alternatively, encourage the DoW and Police to seek specific funding for road safety in annual budget applications.</i>	All	H

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