



# WORKSHOP REPORT

NO. RS01-2018

## ROAD SAFETY WORKSHOP COINCIDED WITH UN GLOBAL ROAD SAFETY WEEK, MAY 2018

Hosted by  
Department of Works, Head Quarters  
Road Safety Committee

Workshop Period:  
15<sup>th</sup> and 17<sup>th</sup> May 2018

Prepared by: PENIAS PAISON  
First Assistant Secretary

May 2018





## **Road Safety Workshop coincided with UN Global Road Safety Week, May 2018**

**Hosted by Department of Works  
Road Safety Committee, Head Quarters**

### **Workshop Dates and Venue:**

Highlander Hotel, Mt Hagen 15<sup>th</sup> May 2018

Gazelle International Hotel 17<sup>th</sup> May 2018

**Report No. RS01-2018**

**May 2018**

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Mr Vitus Koian	- Project Director, Ausaid
Mr Laim Moses	- Project Director, World Bank
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## WORKSHOP ACKNOWLEDGEMENT

*On behalf of the DOW Road Safety Committee (RSC), I would like to thank everyone for their attendance, participation and contributions towards the successful workshops. This shows our undivided concerns for the subject initiated in the 4<sup>th</sup> UN Global Road Safety week, its main emphasis on road safety and how we should address the issue of SPEEDING, which is one of the major causes of road traffic accidents in the world.*

*The Secretary Mr David Wereh and his Deputies in the Operations & Strategic Planning wings (Mr Steven Pup & Mr Gabriel Tomtai) for supporting the Road Safety program. The RS Committee also acknowledges the TSSP and AusAID Project office for providing financial support to run the two workshops. The involvement and participation of the advisors made this workshop successful. This also includes the Provincial Works Managers for financing their logistics to attend the workshops.*

*All Departments of Works field staff, consisting of the Provincial Works Managers and their engineers who shown their support in looking forward to implement the Safe Traffic Control at Road Works Manual and Field Guide.*

*The Road Safety Committee will continue to roll out its future plans, more on Road Safety workshops and awareness and also involve in Road Safety audits. This means that your support will be still required to address the road safety issues in the Country.*

*Thank you all*

**Penias Paison**

*First Assistant Secretary  
Chairman – Road Safety Committee*

## SUMMARY

The workshop participants in Mt Hagen were over 50 people, included the Technical Services of the Provincial Administration and contractors. The numbers attended in Kokopo were over 70 people, included the Department of Works Staff, contractors and stakeholders.

The workshop contents covered mostly on road safety overview and design issues. Road safety is a multidisciplinary and required to be addressed between parties of concern by cooperating, coordination and collaboration (3Cs). This would only possible by merging the 3Es to make it effective in Papua New Guinea. The 3Es involves Engineering, Education and Enforcement. Road Safety could be vetted by these three disciplines, respectively.



Group photo in Mt Hagen



Group photo in Kokopo



**Michael Foster – Communication Manager, TSSP**  
Making Awareness on Safe Traffic Control at Road Works

The Department of Works (DoW), Road Traffic Authority (RTA) and Traffic Police are the premier agencies working together with internal and external stakeholders to address the Road Traffic Accidents, relating to speeds and other factors. Many professions have a direct responsibility for road safety. One of these is the road and traffic engineering profession. Various studies have indicated that perhaps 40% or more of accident reductions which could reasonably be expected on the road system can accrue from the provision of safer roads. The following are imperative regarding road safety engineering:

- The Nature and Dimensions of the Road Safety Problems;
- Safety Management Systems;
- Human Factors in Road Traffic;
- Data Needs and Limitations;
- Hazardous Road Locations;
- Diagnosis of Road Accident Problems;
- Development of Countermeasures;
- Road Design;
- Intersections;
- Delineation, Signing and Lighting;
- Road Maintenance and Construction;
- The Roadside facilities;
- Traffic Management;
- Vulnerable Road Users;
- Road Safety Audit;
- Road Safety Program Appraisal;
- Monitoring and Program Evaluation.

*“PNG Police data for the past five years shows that an average 280 people have been killed annually on our roads and further 1560 people critically injured annually”*

The new Road Design Manual April 2017 will be the main guide for designing roads, where Part 6 covers Roadside design, Safety and Barriers. This section covers the following;

- guidelines on the rationale of errant vehicle management
- guidelines for assessment and treatment of hazards on the roadside
- guidance on the selection and location of road safety barriers
- a road design process that implements errant vehicle management principles and riskmanagement

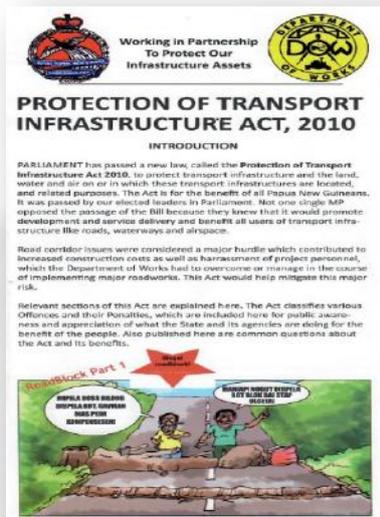
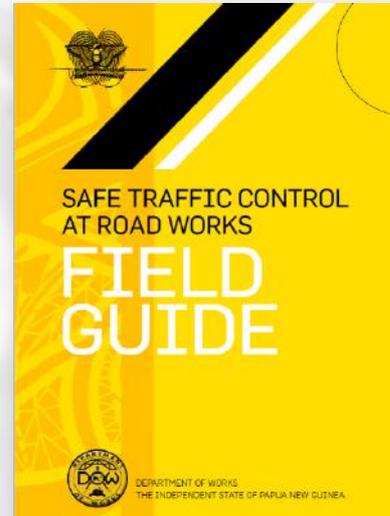
The Department of Works will continue to prioritise road safety in road designs, bridge designs and on various construction sites, and to ensure there is reduction in the number of road traffic accidents in Papua New Guinea. While, Department of transport its Road Traffic Authority (RTA) and Traffic Police will ensure to enforce the road designs for road users to understand the road safety features on the roads. Department of Education would also implement the Curriculum developed by RTA and included in the schools as a teaching material.



The Safe Traffic Control at Road Works Manual and Field Guide have been promoted during the two Workshops and made awareness to the participants that they should have accessed copies and understand the different applications recommended to be used at construction sites. These two documents are posted to DOW & TSSP websites.

[www.tssp.png.com](http://www.tssp.png.com)  
[www.works.gov.pg](http://www.works.gov.pg)

All participants were encouraged to access the websites to obtain copies of the manual and the guide



Protection of Transport Infrastructure Act, 2010 has not been fully enforced. People are inventing and creating own traffic calming devices, which are illegal according to the Act. As far as road safety is concerned, we need to address the issues faced by the road users and villages along the highways.

*“In the last four years the average new car registrations within PNG is 40,000 per annum”*

RTA’s presentation was presented by the DOWRS involving RTA Establishment & Legislation. The focus was on legislation and governance. The presentation also indicated the composition of RTA Board, which 10 representatives from other agencies and stakeholders, including Department of Works is one of the board members. The RTA also has number of committees which are accountable to the RTA Board. RTA presentation contents include the following;

- RTA Functions
- RTA Legal Status
- RTA Board Composition & Board Committees
- RTA Funding
- RTA New Legislation
- Road Traffic Rules
- RTA Establishment
- Relationship with Provincial Governments

## INTRODUCTION

This report is based on the Workshop contents including the discussion and outcomes. Generally, the workshop presentation showcased the essence of Road Safety and effective measures discussed by the participants. Presentations were based on case studies showing significant amount of information about road safety globally and in Papua New Guinea.

The purpose of the report is to record and have on reference, important outcomes and recommendations from the Workshop to be considered in planning and decision making concerning Road Safety in road and bridge designs for making our roads safer for all road users.

## BACKGROUND

The Department of Works Road Safety Workshop was organized as an initiative by the DoW Road Safety Committee, which is in participation with United Nations Global Road Safety Week in the month of May 2018. The Road Safety Workshop was conducted in two different locations; in Mt Hagen (Western Highlands Province) and Kokopo (East New Britain Province) respectively. Mt Hagen workshop targeted participants from Highlands Region involving Department of Works, contractors and other stakeholders, which included Road Traffic Authority (RTA), Traffic Police and City Authorities. Similar participants attended in the Kokopo Workshop, including representatives of DoW from Niugini Islands Regions.

The main focus of the UN Global Road Safety Week was based on *SPEED*. Speed has become one of the major factors of increasing road traffic accidents and fatalities. This was supported by DoW Road Safety Committee's slogan "*Drai Isi, Slo Daun Kwiktai.*" *Global Statistics indicated that 40 % of road accidents is caused by uncontrolled speeding by drivers (WHO)*. Speed contributes to around half of all fatal road traffic crashes in low and middle-income Countries. Countries reducing road traffic deaths have done so by prioritising safety when managing speed. Proven strategies to address speed include:

- Building roads to include features that calm traffic.
- Establishing speed limits to the function of each road.
- Enforcing speed limits.
- Installing in-vehicle technologies.
- Raising awareness about the dangers of speeding.

The most significant finding of the report, *Designing Safer Roads, educating road users and enforcing the designs: getting concerned government and statutory organizations to cooperate, coordinate and collaborate to address the Road Safety issues*. The core functions of different organizations were identified to address the Road Safety issues in Papua New Guinea, in terms of engineering, education and enforcement.

- Engineering is the sole function of the Department of Works (DOW) and also agencies such as National Capital District Commission (NCDC) Engineering Division. Engineering and designing safer roads involve collaborative professional efforts to design safer roads for all roads within the city and entire road network in Papua New Guinea. Papua New Guinea is yet to have standardised road safety systems.

- Education would be the role of RTA working in partnership with Department of Education (DoE). Educating all road users and students in various schools in Papua New Guinea. RTA has developed Road Safety Curriculum and DoE to endorse and approve to be taught in schools in Papua New Guinea as a syllabus for all schools.
- Enforcement would be a responsibility for RTA working in partnership with Traffic Police to ensure road users comply with the traffic regulations especially in complying with the regulatory, warning and guide signs of the roads. Not only that but also to enforce the ‘Protection of Transport Infrastructure Act, 2010.

The 3E concept complements the 3C principle, when all concerned agencies including development partners’ involvement to eradicate the many Road Safety issues leading to loss of lives in Papua New Guinea.

## **OBJECTIVES**

The objectives of the Road Safety Workshops conducted in the two main cities, are primarily focused on the DOW Road Safety Committee’s objective “to improve the safety environment, health and wellbeing of workers, motorists and pedestrians” and also corresponding with the UN Global Road Safety week objectives, but narrowed down to focus on the following:

- 1. To join the United Nations (UN), World Health Organization (WHO) and rest of the world to publicly emphasise Road Safety issues affecting the nations and factors that contribute to accidents and fatalities relating to speeding.*
- 2. To present and inform sector agencies, stakeholders and development partners to understand the Road Safety issues and factors affecting road designs*
- 3. To promote the new Safe Traffic Control at Road Works Manual and Field Guide, which formed part of the Road Safety awareness and promote road design standard and best practices on road construction sites*
- 4. To invite our agency partners such as RTA, Traffic Police to present initiatives developed towards ensuring safer roads for all road users, including drivers, pedestrians and general commuters.*
- 5. To interact and involve in discussing to formulate resolutions and recommendations for each agency to consider in contributing to designing, constructing and maintaining our roads and minimising the safety issues.*

## **WORKSHOP**

The Road Safety Workshops were held in Mt Hagen in Western Highlands Province and Kokopo in the East New Britain Province. The RS planned to host the Workshops in the two regions, including the Highlands and Islands, where several major projects are currently progressing and the workshop would bring awareness and reminder to use road safety systems on designs and projects.

### **Vision, Mission and Goals**

The vision, mission and goals of the DoW Road Safety Committee are not clearly indicated, but importantly in line with ‘Decade of Action’ 2010-2020, the goal is to improve the safety environment, health and wellbeing of workers, motorists and pedestrians in Papua New Guinea. This goal is targeted

to be implemented by designing and constructing safer roads and maintaining the road to prevent unnecessary accidents.

### **Workshop Agenda and program**

The Road Safety Workshop agenda below for two different locations.

**\* *Mt Hagen, Western Highlands Province, Highlander Hotel Conference Room***

<b>Time</b>	<b>Description</b>	<b>Presenter</b>
8.00am	Delegation registration and sign-in	Wilfred Peko/Naomi Parker
9.00am	Official Opening and Welcome	Matthew Windi (RWMs) - Master of Ceremony
9.20am	Road Safety Overview	John Hughes – SREA TSSP
10.00am	Establishment and Legislation	Road Traffic Authority (RTA) – Gilbert Kapi (FAS-DP)
10:30am	Morning Tea	
10.45am	Speed and Enforcement	Traffic Police – not attended
11.20am	Traffic Calming	Eric Stensness – Component 1 Manager, TSSP
11.55am	Awareness on Safe Traffic Control at Road Works & DVD	Michael Foster – Communication Manager TSSP
12.05pm	Lunch	
12.50pm	Designing Safer Roads	Penias Paison – FAS(DS)
1.20pm	Making Road Safer – Interactive Session	John Hughes – SREA, TSSP
2.45pm	Afternoon Tea	
3.00pm	Questions, discussions and closing remarks	
3.30pm	End of Workshop	

**\* *Kokopo, East New Britain Province, Gazelle International Hotel***

<b>Time</b>	<b>Description</b>	<b>Presenter</b>
8.00am	Delegation registration and sign-in	EPA – Ruthy Pomat
9.00am	Official Opening and Welcome	Wilfred Peko (AS-R&B) - Master of Ceremony
9.20am	Road Safety Overview	John Hughes – SREA TSSP
10.00am	Establishment and Legislation	Road Traffic Authority (RTA) – Vitus Koian – PD (AusAID)
10:30am	Morning Tea	
10.45am	Speed and Enforcement	Traffic Police – not attended
11.20am	Traffic Calming	Eric Stensness – REA TSSP
12.05pm	Awareness on Safe Traffic Control At Road Works & DVD	Michael Foster – Communication Manager TSSP
	Lunch Break	
12.50pm	Designing Safer Roads	Penias Paison – FAS(DS)
2.00pm	Making Road Safer – Interactive Session	John Hughes & Vitus Koian (PD-Ausaid)
2.45pm	Afternoon Tea	
4.30pm	iRAP PNG Star Rating Overview	Waruta Abu – RAMS Engineer
4.50pm	Occupational Health & Safety in Office	Naomi Parker – Coordinator (OHSC)
5.00pm	Questions, discussions and closing remarks	
5.30pm	End of Workshop	



## Workshop Presentations

The workshop presentations were aimed to address the participants concerning rising issues on Road Safety. The contents of the presentations covered were so comprehensive and informative in describing the main topic ‘SPEED’ Speed is the main focus of the UN Global Road Safety week addressed the key risk factor for road traffic deaths and injuries. Speed contributes to approximately one-third (1/3) of all fatal road traffic crashes in high-income countries, and up to half (1/2) in low and middle income countries. Proven strategies addressed were:

- Building or modifying roads to include features that calm traffic;
- Establishing speed limits to the function of each road;
- Enforcing speed limits
- Installing in-vehicle technologies, and
- Raising awareness about the dangers of speeding

The Road Safety Workshop seeks to increase understanding of the dangers of speed and generate action on measures to address speed, thereby saving lives on the roads

## Workshop Participants

The Workshop participants involved the Provincial Works Managers and their engineers from the two regions, sector agency representatives, and other stakeholders.

The total attendants and participants for the two workshops was over 120, which over 50 attendees in Mt Hagen and the balance was in Kokopo, East New Britain Province. The lists of the attendees for the two regions are shown below;

### Mt. Hagen – 15<sup>th</sup> May 2018

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## Department of Works Road Safety Committee(RSC)

Kokopo – 17<sup>th</sup> May 2018

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58	Henry Kadui	Gazelle District	District.Road	72864153
59	John Yemisai	Watom Llg	Rab District	70137071
60	Berne Wogan	Enb Infract.Planner	Enb Ra	73395550 bernewagan5084@gmail.com



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65	Samson Girimo	Sio	Dow-Kokopo	<a href="mailto:sgirimon@works.gov.pg">sgirimon@works.gov.pg</a>
66	Paul Pitaro	Prov.Civil.Engineer	Dow -Buka	<a href="mailto:ppitaro@works.gov.pg">ppitaro@works.gov.pg</a>
67	Fred Vunuvung		Dow-Kokopo	<a href="mailto:fvunuvung@works.gov.pg">fvunuvung@works.gov.pg</a>
68	Rosemary V.Sovek	Rabaul Consul. Management Service		Rosemarysovek62gmail.com
69	John Sitapai	Rwm. (Is)	Dow-Kpo Roffice	<a href="mailto:jsitapai@works.gov.pg">jsitapai@works.gov.pg</a>
70	Aura Panka	Prov.Works.Mana	Dow - Kimbe	<a href="mailto:apanka@works.gov.pg">apanka@works.gov.pg</a>
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72	Jason Nabuai	Gradute Engineer	Dow- Buka	<a href="mailto:jnabuai@works.gov.pg">jnabuai@works.gov.pg</a>
73	Patrick Matheson	Spe	Dow - Buka	



### **Workshop Highlights**

The main highlights of the workshops were basically on the presentations and workshop activities involving all attendees participating on existing road audits. The pinnacle of the workshop was awareness on the “Safe Traffic Control at Road Works Field Guide & Manual,” which highlights the safety issues on construction site. The brief highlights of the workshop presentations are discussed below;

#### ***(a) Road Safety Overview***

The Overview of Road Safety was presented by John Hughes Senior Road Engineering Advisor (TSSP), highlighting some important points about road safety and how could be achieved. The subtopics discussed

- Does Road Safety Matter; road safety matters to everyone living in a society where road infrastructure plays vital role in mobility. The safety of the road users is paramount thus designing safer roads is a prime concern
- Conducting the Orchestra; this is the illustration of agencies working together to addressing the road safety issues. Since road safety is a global safety issue, the engineers, educators, enforcers and relevant stakeholders should cooperate to address this issue in Papua New Guinea

- Engineering Safer Roads; engineering safer roads covers number of important recommendations for consideration in engineering, educating and enforcing. The main areas highlighted were road designs and road safety audits.

***(b) Traffic Calming***

Traffic Calming was presented by Eric Stensness, TSSP Component 1 Manager, who highlighted the following;

- Objectives; the objectives of traffic calming are to ensure traffic features or devices are placed on the roads to calm traffic in reducing speeds to reasonable limits.
- Measures; the common measures of traffic calming are involving speed humps, speed limits, roundabouts, pavement markings, road width narrowing, pedestrian crossings, etc.
- Engineering & Aesthetics; road aesthetics are considered important in road designs, which include road signs, road furniture, road pavement markings, traffic lights, etc.

Traffic calming is the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for pedestrians”

***(c) Road Traffic Authority Establishment and Legislation ([www.rta.gov.pg](http://www.rta.gov.pg))***

The presentation was presented by Gilbert Kapi (FAS-DP) in Mt Hagen and Vitus Koian (PD-Ausaid Project Office) in Kokopo. The purpose of the presentation is three-fold;

- Nature and functions of the RTA
- Current status and activities in progress, and
- Road Safety from RTA perspective

Road Traffic Authority is a newly created authority established under the Road Traffic Act 2014. RTA is responsible for vehicle registration, drivers licensing, passenger & goods transport licensing, authorized inspection stations, motor car dealers licensing and other land transport services.

In terms of defining the key functions, the RTA is responsible for all traffic related regulatory, safety & efficient use. The functions basically cover all functions performed by the former National Road Safety Council, the national Land Transport Board, and the Superintendent of the Motor Traffic Act.

The overall aim and objectives of the functions of the RTA is road safety. The functions that have specific reference to Road safety include:

Public Transport safety, monitoring and developing of action plans of road safety, monitoring & evaluation of regulatory as well as effectiveness of road safety, investigation of accidents and incidents in road traffic crashes, research on regulatory & road safety matters, and road safety promotion and coordination.

RTA legislation has provisions for statutory independent functions such as:

- The issuance, endorsement, alteration, renewal, suspension or revocation of any land transport document;
- The granting of exemptions; and
- Enforcement of the road traffic legislations.

The RTA Board composition as per the Act includes representatives from the following organisations:

- Department of Transport,
- Department of Works,
- Department of Finance,
- Department of Provincial & Local Government Affairs,
- Road Transport Association,
- Chamber of Commerce & Industry,
- National Council of Women, Law Society, PMV & Taxi Operators Association, and Minister's nominee.

RTA's Legislative Package include:

- The Road Traffic Act 2014;
- The Road Traffic (Amendment) Act 2017;
- The Motor Car Dealers Licensing (Amendment) Act 2017;
- The Regulations under the Act – which come in two forms
  - a) Road Traffic (fees and charges) Regulation – which sets out the amounts to be paid as fees or charges for various land transport services;
  - b) Road Traffic (offences and penalties) Regulation – which sets out the fines and penalties payable for offences and violations of road traffic laws.
- The Rules – provide the technical details of various aspects in land transport services and industry. There are 5 Rules under the RT Act.

#### ***(d) Designing Safer Roads***

Designing Safer Roads was presented by the First Assistant Secretary Penias Paison highlighting the importance of designing safer roads and adapting best safer systems. The FAS was adamant and appealed on the internal and external stakeholders to apply the 3Cs principle; cooperation, coordinate and collaborate to address road safety issues in road designs. His presentation has outlined the key factors in road designs in the country. He presented Part 6 of the new Road Design Manual. The main points were focused on the following contents;

- 🍏 DoW Road Design Manual
- 🍏 Designing Safer Roads
- 🍏 Safer Road Characteristics
- 🍏 Road Safety Engineering
- 🍏 Design Speed Consideration and Speed Limits
- 🍏 Assumed best practices

Two important design considerations for Road Safety Designs and Safe Traffic at Road Works. The Road Design Manual (RDM) becomes a guideline to designing safer roads and Safe Traffic Control at Road Works Manual and Field Guide become important guides to safe construction sites. The presentation was mainly on designing safe roads based on the Road Design Manual.

- 🍏 DOW Road Design Manual (RDM)

The RDM has the following guidelines for design considerations:

- guidelines on the rationale of errant vehicle management

- guidelines for assessment and treatment of hazards on the roadside
- guidance on the selection and location of road safety barriers
- a road design process that implements errant vehicle management principles and risk management.

Part 6 of the Road Design Manual provides guidelines for safer road design. The provisions in this Part 6 are:

- Providing for a Safe System
  - **Safe roads** – that are predictable and forgiving of mistakes. They are self-explaining in that their design encourages safe travel speeds.
  - **Safe speeds** – travel speeds suit the function and level of safety of the road. People understand and comply with the speed limits and drive to the conditions.
  - **Safe vehicles** – that prevent crashes and protect road users, including pedestrians and cyclists, in the event of a crash.
  - **Safe road use** – road users that are skilled and competent, alert and unimpaired. They comply with road rules, take steps to improve safety, and demand and expect safety improvements (Ministry of Transport 2010).
- Safe Roadside Design
  - clear zone requirements for various traffic conditions and batter slopes (some information has been included in this Manual)
  - treatment and design of features and objects in the roadside to remove or mitigate a hazard
  - the provision of road safety barriers to shield roadside hazards including the types, length and clearances required
  - design of other road safety related devices such as runaway vehicle ramps and heavy vehicle arrester beds,
  - Pedestrian and Cyclist Paths
  - Roadside Environment
  - environmental aspects such as stormwater run-off, fauna management and noise control
  - landscaping
  - roadside amenity including visual amenity and rest facilities
  - roadside infrastructure such as road furniture, lighting, emergency/help telephones, off-street parking and utilities.
- Designing for Safety

In summary the following considerations are important:

  - Combinations of design parameters – the adoption of lower order values for a number of design parameters in combination may create an unsafe design even though the individual design parameters are in compliance with guidelines.
  - Consistent design environment – a safe road design is one that has on-road and roadside features that clearly show drivers the path that a road takes and helps them keep their vehicles in the running lane.
  - Vehicle mix considerations – it is important to consider the impact and additional risk of a higher than normal percentage of heavy vehicles, particularly where steep grades are involved.
  - Other specific design elements and features – (e.g. horizontal and vertical alignment, lane widths, drainage etc.).
- Design to mitigate hazards

Hazard mitigation process. The design process to mitigate hazards involves the identification and assessment of features and objects that may be hazardous to errant vehicles. Figure 6.2 illustrates a generic process that involves the following steps:



During identifying hazards, the following are types that may be encountered in the roadsides:

- embankments and cuttings
- roadside objects such as trees and poles
- culvert ends
- non-traversable open drains
- bodies of water
- road safety barriers
- oncoming traffic.

#### 🍏 Safer Road characteristics

Aim to develop & maintain a safe road environment, which should be able to;

- *Warn* the driver of any substandard or unusual features
- *Inform* the driver of conditions ahead
- *Guide* the driver
- *Control* the driver's passage through conflict points, sections, and
- *Forgive* the road-users' errant or inappropriate behaviour.

#### 🍏 Designing safer roads

A safe road environment should provide:

- No surprises in design and traffic control devices
- A controlled release of relevant information
- Repeated information where pertinent to emphasise danger (advance information and warning regarding deep and unprotected drop-offs close to the road as a hazard).

### 🍏 Road Safety Engineering

Road Safety Engineering activities can be classified into two major groups:

- Improvement of hazardous location on the existing road network
- Road Safety Audits – Prevent crashes in new or rehabilitated road projects

Road Safety Engineering activities can be classified into two major groups:

Improvement of hazardous location on the existing road network

Road Safety Audits – Prevent crashes in new or rehabilitated road projects

Hazardous Locations can use 4 categories:

- Single Site (Black Spot)
- Route Study (Black Length)
- Mass action Plan
- Area wide (Black Area)

### Road Safety Audits (RSAs)

For new roads & rehabilitation, RSAs (mandatory) are required at:

- Feasibility
- Preliminary design
- Detailed design, and
- Pre-opening

For existing roads, RSAs of critical sections such as:

- Urban intersections
- Uncontrolled intersections on major roads
- School zones
- Bus stops/market areas on all major roads
- Other high volume pedestrian areas (paths/crossings) and traffic generators (e.g. Churches, clinics)
- Sub-Standard Curves and No-Overtaking Zones

*Ideally*, Road Safety Audit program for **ALL** roads, but need to prioritise by risk & exposure

### 🍏 Design speed considerations

*Design Speed* is a selected speed used to determine the various geometric features of the roadway. The assumed design speed should be a logical one with respect to the topography, anticipated operating speed, the adjacent land use and functional classification of the highway. *Design Speed* is a tool used to determine geometric features of new road during road design. *Design Speed* is not necessarily its maximum safe speed; it could be higher or lower.

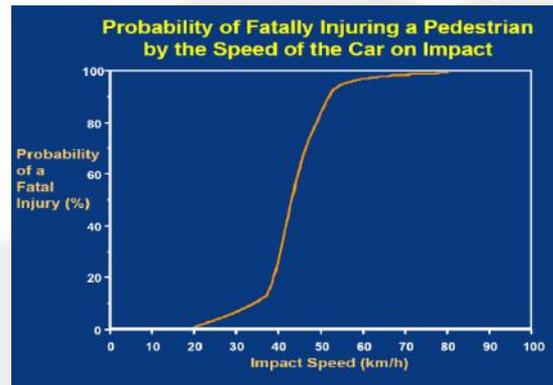
#### Speed Limits

- The limit of the human body to forces is a key factor in survivability of crashes.
- Speed is the single greatest influence on the forces in a crash.
- Lower speed limits, with appropriate road design and enforcement, will lead to lower speeds and therefore reduced road trauma.
- Marginal reduction in the speed limit can result in a quantum drop in the casualty crashes.
- Appropriate speed limits and safer travel speeds form an integral part of the *Safe System*.

Achieving safer travel speeds

- Speed limits are just one tool
- Infrastructure: setting speed limits to match the roads and roadsides (i.e. based on road features and crash rates)
- Enforcement: compliance with speed limits, use of technology, targeting high risk times and locations
- Education: educating drivers about the speeding crash risks, effects on pedestrians, cyclists, dispelling myths and changing the culture
- Vehicle technology: top speed limiting devices and intelligent speed assist (ISA)

*Pedestrian crash severity by speed*



Assumed Best Practices

All agencies to practice 3 ‘Cs’

- *Cooperation*; develop joint road safety priorities and inter-agency working arrangements
- *Coordination*; share information on traffic accidents, accident blackspots and road safety issues
- *Collaboration*; develop solutions and plans to address specific road safety issues and monitor their effectiveness



The three ‘E’s are the pathway to achieving safer roads

- Engineering: Department of Works core business is focused on engineering and other stakeholders to work in collaboration
- Education: Road Traffic Authority or DoT with DoE to develop syllabus and educate schools and people
- Enforcement: Traffic Police and RTA using the 3Cs would enforce the road safety designs, ensuring road users understand different signs and symbols and markings on the road. In addition to enforce speed limits and arrest those who found guilty and imprison them



Low-Cost Ways to Safer Roads

- Improve sight lines – CUT THE GRASS!
- Provide Centre, Lane, No-passing and Edge line markings with RRPMs or glass beads
- Provide footpaths (sidewalks)
- Provide safe crossing points and zebra-crossings with signs and markings
- Reduce traffic speeds in towns and villages, on sharp curves
- Provide extra-widening on sub-standard curves and advisory speed signs
- Discourage unsafe overtaking (Markings/RRPMs/Dividers/Flush Medians)
- Convert cross-roads to roundabouts (or signals)
- Provide channelization at junctions
- Remove, shield or sign roadside hazards
- Appropriate use of barriers/guardrails
- Provide bus bays e.g. W:3.5m, L:12-15m/bus with signs
- Bus lanes
- Waiting bays and jug handles

***(e) Making Roads Safer***

Many professions have a direct responsibility for road safety. One of these is the road and traffic engineering profession. Various studies have indicated that perhaps 40% or more of accident reductions which could reasonably be expected on the road system can accrue from the provision of safer roads. The following are imperative regarding road safety engineering:

- The Nature and Dimensions of the Road Safety Problems;
- Safety Management Systems;
- Human Factors in Road Traffic;
- Data Needs and Limitations;
- Hazardous Road Locations;
- Diagnosis of Road Accident Problems;
- Development of Countermeasures;
- Road Design;
- Intersections;
- Delineation, Signing and Lighting;
- Road Maintenance and Construction;
- The Roadside;
- Traffic Management;
- Vulnerable Road Users;
- Road Safety Audit;
- Road Safety Program Appraisal;
- Monitoring and Program Evaluation.

***(f) Promotion and Awareness of Safe Traffic Control at Road Works Manual***

The Workshop was supplemented by launching the Department's Safe Traffic Control at Road Works Manual. The manual was launched by the Secretary's delegate, the Deputy Secretary for Strategic Planning. The purpose of the manual was to give correct approaches to the contractors for traffic controls and signage on construction sites.

**(g) iRAP Papua New Guinea**

Waruta Abu presented overview of the iRAP PNG, focusing basically on Star Rating Model and Star Rating for roads in PNG.

Star Ratings are determined by assigning Star Rating Score (SRS) to the bands as shown in the table below. Separate bands are used for motorised road users (vehicle occupants & motorcyclists), bicyclists and pedestrians because their scores are calculated using different equations. That is, motorised road user scores are based on head-on runoff and intersection crashes: pedestrian scores are based on walking along and across the road crashes; and bicyclists scores are based riding along the road and intersections crashes.

Star Rating and colours

Star Rating	Star Rating Score		
	Vehicle occupants and motorcyclists	Pedestrians	Bicyclists
5	0 to < 2.5	0 to < 5.0	0 to < 5.0
4	2.5 to < 5.0	5.0 to < 15	5.0 to < 10
3	5.0 to < 12.5	15 to < 40	10 to < 30
2	12.5 to < 22.5	40 to < 100	30 to < 60
1	22.5 +	100 +	60 +

Overview of Star Rating Model

- Developed by world-leading road safety research agencies
- Simple and objective measure of the level of safety provided by road infrastructure
- Ability to set minimum safety levels for each road user type
- Use as a performance indicator to demonstrate reduction in risks

The iRAP is used for policy making, network planning, feasibility studies, detail design and evaluation.



Studies on most of PNG Highways were completed and is kept in the RAMS. Waruta will be disseminating the maps and star rating to each province for planning and improvement. Generally, most PNG roads have a Star Rating of 2, which means all road users have high risk and are vulnerable to road accidents.



***(h) Occupational Health & Safety***

The office of the Occupational Health and Safety in office was given the opportunity to present the importance of employees to be healthy and safe in work place. To ensure employees and others are given highest level of protection from hazards and risks as is “Reasonably Practicable” (minimise risks as much as possible). Naomi Parker the officer in charge presented the overview of OHS in Kokopo highlighting the following;

- Objective of Occupational Health & Safety
- What is Occupational Health & Safety?
- Why Occupational Health & Safety important?
- Purpose of Occupational Health & Safety
  - *Legal Obligation* - Related to the compensatory, punitive and preventative effects of laws that protect the health and safety of workers. OH&S legislations requires all organisations to ensure the health, safety and welfare of employees and to conduct all works related activities in such a manner that they should not pose any harm to them
  - *Financial Obligation* - There are powerful reasons for decreasing work concerning accidents as well as ill health. In addition to decreasing costs, efficient health and safety management promotes the productivity of a business. Ill health and diseases related to work can result in many days of absence from work. Accidents can hinder normal operations and is a possible addition to the operating costs of an organisation. Additionally, the strain and stress on other employees can demotivate them or might lead to more mishaps. The medical expenses incurred by injured and ill workers in hospitals will be borne by the organisation.
  - *Moral Obligation* - It is morally right to safeguard a employee from any kind of harm. It is the duty of all the organisations to provide the best care to their employees. Friends and families would expect loved ones who go out to make their livelihood to come back home safe, the grief, pain, and suffering of people who have their health affected or are hurt while working for their organisations are felt by employees as well as their family members.

The responsibility for health and safety of employees lies with every officer. Supervisors and Managers especially must be aware of OH&S and enforce it. Employees must also make it their business to understand OH&S, so they can ensure their own health & safety is not compromised in the workplace. When everyone is aware of OH&S the organisation will be a safer place to work in with a healthier workforce who will be productive and efficient

## A SUMMARY OF RECOMMENDATIONS FROM WORKSHOP PRESENTERS AND PARTICIPANTS

- 🍏 Designing safer roads depend on cooperation, coordination and collaboration (3Cs) of different parties to address frequent road accidents in the Papua New Guinea.
- 🍏 The safer road is a collaborative responsibility involving the 3Es; Engineering is the sole responsibility of Department of Works to work in partnership with internal and external stakeholders to design safer roads, Education is responsibility of RTA and DOE to develop a curriculum about road safety to be taught at schools in the country. RTA Deputy CEO, confirmed a curriculum has already been developed and pending submission to DoE.
- 🍏 Road Safety awareness to become a business for every agency and stakeholder
- 🍏 Traffic calming devices are encouraged in road safety designs and for all concerned agencies to consider in Road and bridge designs



## WORKSHOP OUTCOMES

### Designing & Constructing Safer Roads

Road safety is anybody's business; the road designer, the educator, the enforcer, the road user and the developer. Papua New Guinea must join with the rest of the world by using the best world practices to address the road safety issues. Papua New Guinea's road network must be safe for the citizens and all road users. The table below captured the resolutions of the two workshops conducted, respectively.

Ref No.	Workshop Outcomes	Target Agencies	Responsibilities
1	All agencies and stakeholders to adapt 3Cs; Cooperation, coordination and collaboration principle	DoW, RTA, DoE, Traffic Police, NCDC, Contractors, Development Partners	All the target agencies and stakeholders to cooperate and collaborate to coordinate road safety issues and activities in PNG
2	Develop Maintenance First Policy to ensure roads are free of obstruction which may cause accidents	DoW, NCDC	The two parties claim support from development partners to establish Maintenance First Policy (MFP)
3	Engineering for designing safer roads and constructing them	DoW, NCDC	The two agencies cooperate, coordinate and collaborate in road and bridge designs prioritising road safety design
4	Educating the features of safer roads in designs, traffic signs, and speed limits in schools	RTA & DoE	Road Safety must be educated in all the schools in Papua New Guinea, which the RTA to collaborate with DoE to develop a curriculum for teaching it as a subject.
5	Enforcing road traffic rules for road users who intentionally break them.	RTA, Traffic Police	RTA and Traffic Police to ensure road users are compliant to certain speed limits and road safety signs.
6	Appropriate road traffic signs designed and installed and protected	DoW & Traffic Police	To ensure vandalism of road signs and other safety features on the roads are prevented
7	Road Safety Audits to be regularly carried out for existing and new roads	DoW, NCDC	The two agencies role is designing and thus must establish road safety audit
8	Licensing for drivers to follow a comprehensive approach, introducing to the learners the detail traffic rules and to understand different road signs and must pass certain tests before issuing them their driving permits and licences.	RTA (MVIL)	To ensure driver licensing is coordinated transparently and all learners must go through several tests to pass all safety rules to be familiar with road safety signs and certain speed limits.
9	Traffic calming design considerations are imperative	DoW, NCDC	The two agencies are responsible for designing roads that will calm traffic. This would be achieved through carrying out road safety audits for every road designs
10	Establish Papua New Guinea Road Safety Council (RSC) as watch dog to Road Safety	RTA	RTA to establish PNGRSC to be the key body to deal and spearhead with Road Safety issues in the PNG. To ensure all concerned agencies representatives formed the committee.
11	Update Road traffic accidental data and identification of blackspots,	DoW, RTA, Traffic Police	The agencies to cooperate and collaborate to collect and update Traffic related accidental data.
12	All provinces must know their Star Rating	RAMS, Asset Management - DOW	Produce maps and distribute the Star Rating for all provinces based on the iRAP study for PNG Roads
13	All employees, road users and citizens of PNG must be healthy and Safe	All	Must enforce Occupational Health & Safety (OH&S) at workplaces, homes and schools

## **REFERENCES**

All references were based on the presentation of various topics during the workshops.

- (1) Presenters' power point presentations
- (2) Department of Works Road Design Manual, April 2017
- (3) World Health Organization 2015