

## **WORKSHOP REPORT**

NO. WS01-2017

# ROAD SAFETY WORKSHOP COINCIDED VITH 4<sup>TH</sup> UN GLOBAL ROAD SAFETY WEEK, 8<sup>TH</sup> TO 14<sup>TH</sup> MAY 2017

## Hosted by Department of Works, Head Quarters Road Safety Committee Workshop Period: 08<sup>th</sup> and 11<sup>th</sup> May 2017

Prepared by: PENIAS PAISON First Assistant Secretary



May 2017





## Road Safety Workshop coincided with Fourth UN Global Road Safety Week, 8<sup>th</sup> to 14<sup>th</sup> May 2017

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

## Workshop Dates and Venue:

HRD Conference Room Department of Works 8<sup>th</sup> May 2017 Lae International Hotel 8<sup>th</sup> May 2017

> Report No. WS01-2017 May 2017



## **Road Safety Committee members:**

Mr Penias Paison Mr Gilbert Kapi Mr Wilfred Peko Mr Garo Tau Ms Marjorie Nimagole Vacant

## - First Assistant Secretary, Design Services Division

- First Assistant Secretary, Donor Projects
- Assistant Secretary, Roads and Bridges Design
- Assistant Secretary, Asset Management
- Project Engineer, Ausaid project office
- Principal Road Safety Engineer, R&B

## **Committee Observers:**

Mr Gabriel Tomtai Mr Vitus Koian Mr Laim Moses Mr Barnabas Nuesemale Mr Ian Barr

## Advisors:

Mr John Hughes Mr Eric Stensness

- Deputy Secretary, Strategic Planning
- Project Director, Ausaid
- Project Director, World Bank
- Project Director, ADB
- Project Director, Major Projects

- SREA TSSP
- REA TSSP



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## WORKSHOP ACKNOWLEDGEMENT

On behalf of the DOW Road Safety Committee, 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 Committee acknowledges the TSSP and AusAID Project office for providing financial support to run the two workshops. This also includes the Provincial Works Managers for financing their logistics to attend the workshops.

Sincere acknowledgement to the Secretary of Department of Transport, Mr Roy Mumu, who attended the workshop in Port Moresby and shown support in wishing all concerned agencies and stakeholders work towards achieving safer roads in the entire road network in Papua New Guinea. Our sector agencies, advisors and development partners' representatives also attended the workshop in Port Moresby, shown their concerns for safer roads in PNG.

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.





### **SUMMARY**

The workshop contents covered mostly on road safety 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 blending the 3Es to make it effective in Papua New Guinea. The 3Es covers Engineering, Education and Enforcement.



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;
- **K**oad Design;
- **É** Intersections;
- Delineation, Signing and Lighting;
- Road Maintenance and Construction;
- The Roadside;
- **t** Traffic Management;
- Vulnerable Road Users;
- Koad Safety Audit;
- Koad Safety Program Appraisal;
- **G** Monitoring and Program Evaluation.

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. Road Traffic Authority (RTA) and Traffic Police will ensure to enforce the road designs for road users to understand the road design safety features on the roads



## **INTRODUCTION**

This report is based on the Workshop contents including the discussion and resolutions. 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 resolutions 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 road users.

## BACKGROUND

The Department of Works Road Safety Workshop was organized as an initiative by the DoW Road Safety Committee, which is in response to Fourth United Nations Global Road Safety Week from the 8<sup>th</sup> May to 14<sup>th</sup> May 2017. The Road Safety Workshop was conducted in two different locations; in Port Moresby and Lae respectively. Port Moresby workshop targeted participants from Southern and Islands Regions DoW and other stakeholders, which include Road Traffic Authority (RTA), Traffic Police, National Capital District Commission, and contractors within Port Moresby. Similar participants from in the Lae Workshop, including representatives of DoW from Highlands and Northern 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 Kwiktaim*." *Global Statistics indicated that 40 % of road accidents is caused by uncontrolled speeding by drivers (WHO)*.

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 the 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



- Education would be 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.

The 3E concept complements the 3C principle, when all concerned agencies including development partners' involvement to eradicate the many Road Safety issues 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 Fourth 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 launch the new Safe Traffic Control at Road Works Manual, which formed part of the Road Safety awareness and promote 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 Port Moresby and Lae, as central to the four regions, including the Highlands, Islands, Northern and Southern to attend the workshop and encourage participations.

#### Vision, Mission and Goals

The vision, mission and goals of the DoW Road Safety Committee are not clearly indicated, but importantly 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 be prevent unnecessary accidents.

#### Workshop Agenda and program

The Road Safety Workshop agenda below for two different locations.

#### \* Port Moresby, NCD, Department of Works HRD Conference Room

Time	Description	Presenter
8.00am	Delegation registration and sign-in	EPA/PA – Jenny Lohia/Raka Hetahu
9.00am	Official Opening and Welcome	Jason Vela/John Sitapai (RWMs) - Master of Ceremony
9.20am	Road Safety Overview	John Hughes – SREA TSSP
10.00am	Road Safety Governance in Papua New Guinea	Road Traffic Authority (RTA)
10:30am	Morning Tea	
10.45am	Speed and Enforcement	Traffic Police
11.20am	Traffic Calming	Eric Stensness – REA TSSP
11.55am	Official launch of manual – Safe Traffic Control at	Secretary – Dept. of Works
	RoadWorks	
12.05pm	Lunch	
12.50pm	Designing Safer Roads	Penias Paison – FAS(DS)
1.20pm	Making Road Safer – Interactive Session	John Hughes & Vitus Koian (PD- Ausaid)
2.45pm	Afternoon Tea	
3.00pm	Questions, discussions and closing remarks	
3.30pm	End of Workshop	

* Lae, Mo	Lae, Morobe Province, Lae International Hotel		
Time	Description	Presenter	
8.00am	Delegation registration and sign-in	EPA/PA – Evah Banige	
9.00am	Official Opening and Welcome	Brian Alois (RWM-N) - Master of	
		Ceremony	
9.20am	Road Safety Overview	John Hughes – SREA TSSP	
10.00am	Road Safety Governance in Papua New Guinea	Road Traffic Authority (RTA)	



10:30am	Morning Tea	
10.45am	Speed and Enforcement	Traffic Police
11.20am	Traffic Calming	Eric Stensness – REA TSSP
12.50pm	Making Road Safer – Interactive Session	John Hughes & Vitus Koian (PD-
		Ausaid)
2.00pm	Designing Safer Roads	Penias Paison – FAS(DS)
2.30pm	Sharing experience on safety issues Highlands	Mainland Plumbing
	Highway 4-lane	Representative
2.45pm	Afternoon Tea	
3.00pm	Questions, discussions and closing remarks	
3.30pm	End of Workshop	

#### **Works Steering Committee**

The steering committee of the Workshop comprised of the DoW Road Safety Committee members and Regional Works Managers for the four regions, involved in the arrangement of successful completion of the Workshop. The names are listed below:

#### Department of Works, Head Quarters:

*	Penias Paison	Interim Chairman and First Assistant Secretary for Design
		Services Division
*	Jenny Lohia	Executive Personnel Assistant, FAS, Design Services
*	Raka Hetahu	Support to EPA, FAS Design Services
*	Gilbert Kapi	First Assistant Secretary for Donor Projects
*	Wilfred Peko	Assistant Secretary, Roads and Bridges Design Branch
*	Garo Tau	Assistant Secretary, Asset Management Branch
*	Vitus Koian	Project Director, AusAID Project Office, DoW
*	Marjorie Nimagole	Project Engineer, AusAID Project Office, DoW
*	Robin Hori	Engineer, AusAID Project Office, DoW
*	Timothy Baibuni	Graduate Engineer, Project Office, DoW
*	Konopa Kana	DoW Media Officer
Re	egional Office:	

### \* Jason Vela

- \* Vaila Idau
- \* John Sitapai
- \* Brian Alois
- \* Evah Banige
- \* DOW TSSP Office:
- \* John Hughes
- \* Eric Stensness
- \* Micheal Foster

Acting Regional Works Manager, Southern Region Personnel Assistant, Provincial Works Manager, Central Regional Works Manager, Islands Region Regional Works Manager, Northern Region

- Executive Personnel Assistant, RWM, Northern Region
- SREA, TSSP REA, TSSP Communication Manager, AHC



#### **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 4<sup>th</sup> 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 highincome 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;
- **É** Establishing speed limits to the function of each road;
- Enforcing speed limits
- Installing in-vehicle technologies, and
- **Contract State** 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 were involving the Provincial Works Managers and their engineers from the four regions, sector agency representatives, Road Traffic Authority, Traffic Police, National Capital District Commission, Prime Minister's Department, Development partners, Office of Australian High Commission, and contractors.

The total attendants and participants for the two workshops is 100, which over 50 attendees in Port Moresby and the balance was in Lae, Morobe Province.

#### **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 launching of the "Safe Traffic Control at Road Works Manual," which highlights the safety issues on construction site.

(a) Road Safety Overview

The Overview of Road Safety was presented by John Hughes Senior Road Engineering Advisor, 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, Road Engineering Advisor and 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.

#### (c) Designing Safer Roads

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



#### 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.

#### 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 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

#### 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

#### • 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 the Section 6 of the new Road Design Manual

#### 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

#### (d) 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;
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- Human Factors in Road Traffic;
- **É** Data Needs and Limitations;
- Hazardous Road Locations;
- Diagnosis of Road Accident Problems;
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- Koad Design;
- Intersections;
- Delineation, Signing and Lighting;
- **É** Road Maintenance and Construction;
- **t** The Roadside;
- **Traffic Management;**
- Vulnerable Road Users;
- Koad Safety Audit;
- Koad Safety Program Appraisal;
- **•** Monitoring and Program Evaluation.



(e) Launching of Safe Traffic Control at Road Works Manual

The Workshop was complimented 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.

(f) National Road Safety Policy

The Deputy Chief Executive Officer for Road Traffic Authority (RTA) has presented and indicated a proposal initiated by the authority for the National Road Safety Policy (NRSP)

#### 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.
- **C** Road Safety awareness to become a business for every agencies and stakeholders
- Traffic calming devices are encouraged in road safety designs and for all concerned agencies to consider in Road and bridge designs



## WORKSHOP RESOLUTIONS

#### **DESIGNING & CONSTRUCTING SAFER ROADS**

Road safety is anybody's business; the road designer, the educator, the enforcer, the road users 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 Resolutions	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	Licencing 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.



### **REFERENCES**

All references were based on the presentation of various topics during the workshops. Most of the information were extractions from WHO data and statics.

- (1) World Health Organization 2015
- (2) Presenters' power point presentations



