

# Building capacity for road safety data systems

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## 1. Introduction

Well understood are the problems and challenges associated with the increasing and unacceptable number of people who are killed or seriously injured on the world's roads every year, particularly in low and middle income countries.

Preventing road crashes is a priority for Governments in the Asian Region. They well know the short and long term consequences of road traffic crashes, including the pain and suffering and the impact of the loss of the family breadwinner. There is a strong understanding and recognition that effective road safety management is based on a systematic approach that includes the provision, analysis and interpretation of good data.

With the exception of a couple of countries such as Singapore and Cambodia, few Asian countries have well developed and well managed reliable data collection systems. This impacts on the capacity of key stakeholders in country to make good, evidence based decisions about the interventions that can make a difference in reducing the levels of fatalities and serious injuries as a result of road crashes.

The importance of having a well designed and managed data collection system cannot be underestimated by Governments and key road safety stakeholders in the Asia Region. Using data to influence political decisions, legislation, budget decisions, policy and behaviours can result in excellent gains in injury prevention and safe travel.

In essence, there are too few people in the Asian region who are dedicated road safety professionals who have the capability to influence, initiate and implement road safety actions. As an example, in countries like Cambodia (14.4 mill and 154,000 vehicles) and Vietnam (87.3 mill and 22.9 mill vehicles) there are only a handful of professionals who are specifically tasked with road safety and who could be counted as a road safety work force. In comparison, in the Australian State of Victoria there are approximately 5 million residents and a registered vehicle fleet approaching 4.5 million. The direct professional road safety work force has evolved to currently number close to 1000 individuals in a range of organisations. Similarly in the USA it is reported that there are around 10,000 professionals and perhaps 100,000 contributors. These numbers give some idea of the scale of resources required, indeed it maybe possible to build a model whereby countries build a professional, competent road safety workforce in proportion to the population and within the context of motorisation.

This purpose of this paper is to outline a proposal by Global Road Safety Partnership (GRSP) to establish a Global Road Safety Studies (GRSS) that can be delivered through a range of teaching and learning modalities - including face to face and online workshops, both in country and regionally.

GRSS will build the capacity of people - including politicians and public servants, engineers, roads and vehicle designers, police, emergency services, health sector, educational sector and the media - to build commitment, knowledge and skills to shoulder the responsibility for reducing road traffic injuries.

## 2. About Global Road Safety Partnership (GRSP)

GRSP<sup>1</sup> is a tri-sectoral partnership between governments, businesses and civil society organisations dedicated to reducing death and injury on the road in developing and transition countries. Governmental members of GRSP include: multi-national development bodies, such as the World and Asian Development Banks; UN agencies such as WHO and UN-ESCAP; government departments such as Sweden's Sida, the Netherlands' Ministry of Transport and UK's DFID. GRSP also has as membership from a growing number of global businesses and international civil societies, such as the International Federation of Red Cross and Red Crescent Societies (IFRC) which host GRSP at its headquarters in Geneva.

GRSP is building on this unique structure and foundation, and is currently working with industry, government and professional groups to create and conduct an international knowledge transfer and capacity building program to be known as the GRSP Global Road Safety Studies (GRSS).

GRSS will especially complement existing initiatives such as the Good Practice Manuals which focus on the risk factors identified in the World Report<sup>2</sup>. Alongside the Good Practice Manuals there are also some professional development programs already developed (under the auspices of Global Road Safety Initiatives) that are based on content and processes in the Good Practice Manuals, and they have been trialled and evaluated in the Asia Region.

## 3. Rationale for Global Road Safety Studies (GRSS)

It is well documented that the relentless increase in motorisation is leading to a tragic rise in crashes, fatalities, serious injuries and emotional and social trauma. Preparing a workforce to deal efficiently with this challenge requires a comprehensive, structured and coordinated response. Individuals within road safety stakeholder organisations require competencies with technical skills and knowledge to apply within their work place.

According to the World Health Organization<sup>3</sup> it is important to address the need to build the capacity of those tasked with addressing the challenge of injury prevention.

Preventing injuries and violence requires multi-sectoral collaboration, and individuals in health as well as non-health sectors need to understand how injuries and violence occur and how they may be prevented. An appropriately and effectively communicated knowledge base to a range of stakeholders is necessary for this. Essential skills need to be supported and developed amongst a number of key players and potential champions in the injury and violence field. Institutional support needs to be provided in the form of political, financial and infrastructural investments in data collection, information sharing, and viable career paths, among others. (p.37)

The proposed GRSS can directly address the professional development aspect of capacity building. It is designed to respond to the needs so often expressed by road safety workers, through various mechanisms in many parts of the world that are struggling with implementing effective road safety countermeasures in the face of rising road crash levels.

A characteristic of road safety agencies in jurisdictions with good road safety performance is the continual investment in, and the high value given to the development of professionals with individual capabilities that contribute to improving critical organisational road safety capacity.

The scale and type of road safety human resource competencies and capabilities required to meet the road safety challenge in most developing country jurisdictions is unknown and very rarely considered. Indeed this was once the case in jurisdictions that now have good road safety performance.

<sup>1</sup> Global Road Safety Partnership ([www.grsproadsafety.org](http://www.grsproadsafety.org))

<sup>2</sup> Peden, M et al., eds. World report on road traffic injury prevention. Geneva, World Health Organisation, 2004 ([http://who.int/violence\\_injury\\_prevention/publications/road\\_traffic/world\\_report/en/index.html](http://who.int/violence_injury_prevention/publications/road_traffic/world_report/en/index.html))

<sup>3</sup> Capacity building for preventing injuries and violence: Strategic plan 2009-2013. Geneva, World Health Organisation, 2009

This may have something to do with the observation that road safety problems evolve where as in other sectors, for example public health doctors, are formally trained as professionals and can then be readily adapted to meet most challenges to health status encountered, H1N1 influenza being a good recent example. With road safety the profession typically needs to be developed as the problem is encountered and there is currently a great deal of separateness (or silo like thinking and actions) in a field that requires a multi faceted safe systems approach. People are not routinely trained as road safety professionals.

Preparation of a competent workforce with multi-disciplinary responsibilities is the only long-term sustainable solution to avoiding and minimising the road trauma disaster that is occurring and increasing.

The GRSS program is designed to provide a sustainable, coherent approach to developing individual capacity to effectively develop specific road safety expertise within their sphere of influence. In this way participants will dramatically improve the institutional capacity of their organisation to undertake its road safety responsibilities. GRSS is also designed to leverage existing qualifications and subsequent qualifications both from a pre-service and in-service context.

It is anticipated that GRSS will appeal to existing in country professional development and workplace training requirements and initiatives and enable favourable funding options to be developed to support and assist participants already in the workplace to undertake road safety studies.

It is important to note that whilst GRSS can provide a pathway to Doctorate level, it is considered that achievement of Certificate or Diploma by most people will dramatically and quickly improve global road safety capability.

## 4. GRSS Objectives

The key objective for GRSS is :

- To provide a rapid response to the need to develop a professionally competent road safety work force in every jurisdiction.

Further, GRSS will enable participants to:

- Effectively respond to the need for professional development of individuals and organisations engaged in all sectors and levels of road safety
- Build capabilities of those working as professional or contributors to the field of road safety
- Improve their work performance leading to more effective road safety program delivery
- Advance their career prospects
- Enable a career or occupational transfer into an area of high need and growth.

## 5. Who might be interested in undertaking GRSS?

GRSS will appeal to, and are applicable to a range of personnel:

- Road Safety Officers (local, district, provincial, state and national government)
- Road Safety Managers responsible for program and resource allocation at all levels
- Teachers and district/regional curriculum and training advisers
- Police - traffic officers including those with management responsibilities
- Corporate sector officers engaged in both internal and external road safety programmes
- Driver educators/trainers
- Motorist and consumer groups
- Ambulance officers
- Members of the medical profession
- Traffic Engineers
- Technical personnel
- Vehicle manufacturers
- Policy, regulation and legislature development personnel
- Transport and fleet companies
- Health promotion, injury prevention and public health personnel
- Occupational health and safety officers
- Consultants in traffic planning and management
- New entrants to transport industry, public health and education
- Technical trades people
- Academics, students and teachers
- and anyone else interested in contributing to the field of road safety.

## 6. Road Safety Competencies

In most of the latter part of last century road crashes were viewed as an unfortunate consequence of increasing motorisation. Fortunately a few jurisdictions and a growing band of professionals, along with the public road user, demanded Governments to continue to improve road safety performance. Consequently greater investment was made in institutional structures and human resources. Gradually there emerged a multi disciplinary road safety profession that is characterised by evidence based contributions from all sectors including road environment safety, road users behaviour, vehicles, management, research and evaluation.

GRSS is focussed around the competencies needed to deliver an effective and efficient road safety programme. It is vocational in nature. Individuals therefore develop capabilities such as skills, technical knowledge and attitudes within the road safety competencies required for effective road safety programme delivery.

Competency based learning is an approach that emphasises what an individual can do as a result of study and is essentially outcome orientated. It can be compared with approaches that are essentially input focussed and study is viewed more as a process, usually towards generic qualifications.

The American Transportation Research Board, Special Report 289 "Building the Road Safety Profession in the Public Sector" sets out seven core competencies and knowledge and skills required for road safety professional as follows:

- The involvement of multiple disciplines in road safety management
- The importance of science based research and its application in effective safety management
- The effects of economics, social, technological and demographic trends on road safety
- The factors occurring before, during and after a crash and involving driver, highway, vehicle and emergency response that effect road crash and severity
- The combining of countermeasures from the four E's of traffic safety, education, engineering, enforcement and emergency response
- The institutional settings in which safety management decisions are made and the main public and private organisations that have road safety responsibilities resources and information
- The main databases and information systems that can be used for safety management, including state local and national databases

To achieve these competencies road safety professionals should have skills in analysis, management and communication

## 7. What might GRSS look like?

Initial contact for prospective students will be through the GRSP Asia web site ([www.grspasia.org](http://www.grspasia.org)) and this will soon be linked to the main GRSP web site.

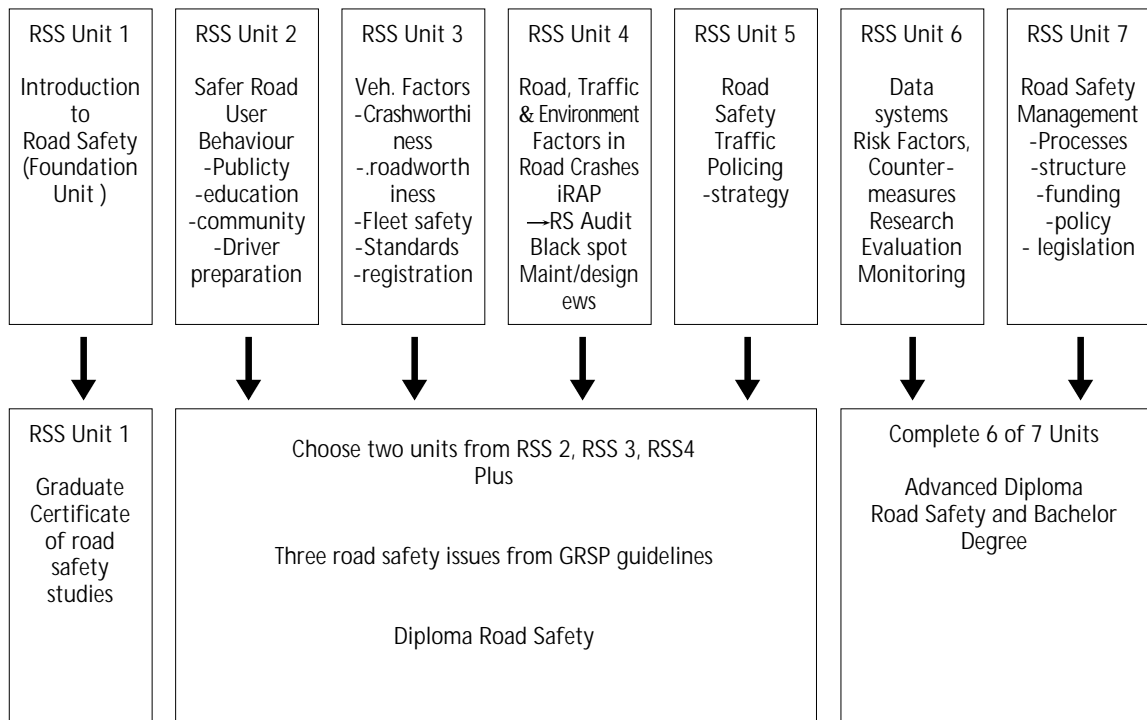
Initially a Foundation Road Safety Centers of Excellence will be established to manage enrolments, student progress and quality to assure the content, processes and evaluation of the GRSS program. When demand increases for GRSS Centres of Excellence will be approved and established in a number of countries in recognized universities.

A program of studies will be offered where enrolled students can determine their own exit points according to qualification they wish to take out.

Through the Global Road Safety Initiative (GRSI) programme two units and thirty eight modules of a GRSS have already been developed, trialled and evaluated. This was done in response to the need to better prepare people to implement risk factors countermeasures detailed in the Good Practice Manuals. The units already developed focus on enforcement and road user behaviours.

Overall, of the study units and modules summarised below in Table 1 almost half are already written, trialled and evaluated. However it is expected they will require further development, adaptation and up dating from time to time. There are a range of additional modules that will need to be developed over the next 12 months

Table1: Proposed Structure of the Study Program



## 8. Further Details about the proposed GRSS programme units.

### *GRSS Unit 1: Introduction to road safety*

Introduction to Road Safety (GRSS 1) will be the foundation unit and will be undertaken as a stand alone unit. It is designed to give immediate assistance and rapidly inject critical road safety knowledge into the institutional road safety environment.

This unit provides participants with an overview of road safety and an introduction to the risk factors and issues determining road crashes and countermeasures, enforcement and administration.

The unit will also provide participants with basic train the trainer skills and knowledge sufficient to conduct road safety training in specific areas relating to their work environment.

This introductory unit must be undertaken before the other units in the GRSS, and for successful completion of the unit participants will be required to conduct at least two train the trainer sessions on a relevant selected road safety issue such as helmet wearing, occupant restraint or drink driving and speeding. The focus on train the trainer is to underline the need for professionals to be specifically skilled in sharing knowledge with others.

Part one of GRSS Unit 1 is intended for delivery in a residential format that will not only provide an intensive study opportunity but also an excellent avenue for networking with people from a wide variety of backgrounds who are all concerned with, or contributing to, road safety. A second part of the Unit will require some Action Research type activities back in the workplace. The use of a team approach that has been set up in Part 1 will guide practice and provide ongoing support.

Participation in the first Unit will provide an opportunity for exposure to, and discussion with, specialist presenters from various fields of road safety and fellow participants. Candidates will also be able to meet the Center of Excellence Course Coordinator and study module supervisors.

Module presenters will include representatives from ASEAN country roads and traffic authorities, academics with expertise in selected areas, police services and internationally recognised experts.

After completing this foundation unit participants will be encouraged to select further studies to gain greater insight into content of the modules that are most relevant to their work sector or specialisation.

*GRSS Unit 2: Developing Road User Behaviour*

This unit provides an opportunity to gain knowledge and understanding of human behaviour in relation to road use. Specific attention is given to methods of preparing drivers for licensing, effective publicity and education programmes including community approaches.

*GRSS Unit 3: Vehicle factors and road crashes*

This unit is a study of the requirements, standards and trends in automotive engineering which aim at a reduction in road trauma. This unit also includes study on aspects of conducting vehicle roadworthiness programmes.

*GRSS Unit 4: Road, traffic and environment factors in road crashes*

This unit provides the means of understanding the factors involved in safely designing and operating a safe road system for travel by all types of road users.

*GRSS Unit 5: Police and Traffic Enforcement studies*

This unit provides the means for understanding the processes and system involved in the delivery of effective traffic police enforcement approaches with in the context of legislation, operational procedures, equipment and technology available.

The unit will also provide for a specific study in crash investigation and vehicle inspection technologies for the purpose of road side inspections.

*GRSS Unit 6 Data systems, Risk factors, Research, Countermeasures, Monitoring, and evaluation:*

Of particular relevance to this conference is this unit that if focussed on Data Management Systems. The importance of data driven road safety management will be the recurring theme through every unit in the GRSS.

But it is in this unit that participants will gain a greater understanding of the way to systematically collect, process, analyse and use road crash data, with the ultimate aim of prioritising and targeting interventions and activities that can reduce the burden of road trauma.

By the end of this unit participants have a greater understanding of :

- The critical importance of establishing a road safety data management system that is able to provide data and reports needed by various sectors that are connected to road safety and road trauma.
- How to collect, store, collate and analyse data relating to road safety according to the resources available and the policy environment.
- Using data to design, implement and evaluate road safety actions and countermeasures, by
  - Categorising the type of problem under investigation
  - Identifying contributing factors to the problem under investigation
  - Defining the target groups for treatment by countermeasures
  - Proposing countermeasures to address specific road safety problems
  - Determining the acceptability and cost effectiveness of proposed countermeasures
  - Developing an implementation plan for a proposed countermeasure
  - Compiling and disseminating a report on the performance of a countermeasure project
  - Establishing methods of research and research programmes
  - Identifying evaluation methods, their context, integrity, appropriateness and application
  - Valuing the role of data and statistics in an evidence based approach.
  - Developing cost benefit and cost effectiveness interventions.

*GRSS Unit 7: Road safety management and processes:*

The key concepts and critical issues covered in this unit are national, state, and local government road safety strategies; corporate plans; road safety action plans, problem analysis; strategic planning process and principles, strategic management, enforcement principles cost benefit analysis program planning monitoring and development.

Since GRSS is still at the conceptual stage, suggestions of the inclusion of other units are welcome.

## 9. University awards through the Centers of Excellence

It is proposed that a suitable University be appointed by GRSP as the founding Road Safety Center of Excellence (RSCE). In due course others will be appointed to meet expected demand and needs of other regions in other parts of the world.

The appointed University will award qualifications, undertake some teaching and candidate supervision, some of which will be outsourced to suitably qualified individuals.

As demand grows additional suitable institutions will be licensed by GRSP as RSCE, this includes those using languages other than English. Selection and appointment of RSCE will be progressively undertaken based on previous or existing related road safety course delivery and availability of appropriate teaching personnel. Some examples of possible centers of excellence include; Asian Institute of Technology, Thammasat University, Malaysia Institute Road Safety (MIROS).

GRSP's in Country Managers will play a critical role in identifying and developing suitable organisations and monitoring delivery.

Undertaking GRSS provides a professional development upgrade pathway from an Awarding University, consisting of individual units leading to:

- Certificate in Road Safety
- Diploma in Road Safety
- Advanced Diploma in Road Safety
- Bachelor Degrees in Road Safety or credit points for other University designated degrees.
- Masters in Road Safety
- Doctorate in Road Safety.

All candidates will receive a Statement of Successful Achievement for each unit successfully completed. Units attributed a points score value and added to any recognised prior learning points to determine a total score value. Upon achieving threshold points according to the certification requirements an award from the Road Safety Center of Excellence University is made. for the Certificate, Diploma, Advanced Diploma, or Bachelors Degree in Road Safety. The degree is also a pathway to a Masters and doctorate in suitable related fields of study

Apart from the initial unit, (residential), GRSS will be undertaken through distance education utilising e-learning techniques. Consideration will be given to other residential study where intensive study on related units can be justified. Use of e-learning and information technologies will ensure that students based in one regional country can study through the Road Safety Center of Excellence based in another. Jurisdictions that have traditionally retained and developed a strong road safety knowledge can easily provide knowledge and research evidence to others for study and development.

Participants may take one or more GRSS units at their own pace. For example study of the foundation unit "Introduction to Road Safety", and a further one unit at the same time. Successful completion of GRSS Unit 1 will result in the award of the Certificate of Road Safety.

Successful completion of Unit 1 and two of Units 2 - 5 will lead to the award of the Diploma of Road Safety Studies. A further two unit (6 and 7) will result in an Advanced Diploma of Road Safety Studies.

How far participants' progress, and the pace at which they do so, is determined by their own work demands and personal circumstances. At every step of the study pathway recognition is provided which can be reflected in career achievement and promotion, responsibilities and opportunities.

It is intended that units will be offered on a two semester timetable, therefore providing two opportunities to enrol throughout each year. The units are completely "off campus" with NO examinations and only one compulsory residential school conducted at the commencement of the first semester.

Assessment is by assignments only. For each unit participants will be matched to a University appointed tutor who is responsible for ensuring satisfactory standard of learning is achieved.

## 10. Recognised Prior Learning

It may be possible for students holding an existing Bachelor Degree in an appropriate field to apply for Recognition of Prior Learning (RPL) or complete an approved further study option leading to the award of the Bachelor of Road Safety studies. These options will require further investigation.

Recognition and acknowledgement, through assessment, of competencies held and acquired through prior learning, formal training, work experience or life experience will be available to candidates. RPL offers prospective students working in road safety the option to fast track the award of road safety qualifications for careers in road safety. RPL will be available at unit and unit levels. A system will be developed for providing RPL.

GRSP will maintain through a suitable contracted agency (possibly the Foundation Road Safety Centre of Excellence) to provide a quality assurance system that ensures that the requirements of assessment, competency standards and any other criteria are applied in an appropriate and consistent manner. Quality assurance is an integral component of both the student assessment system, tutors role and the contracted Centers of Excellence.

## 11. Role of GRSP Advisers and Country Managers

GRSP has outstanding road safety resource people within the organisation and associated road safety experts who perform a variety of roles within the Asia Region. Due to their expertise and unique position within a jurisdiction they are well placed to undertake critical roles in the promotion, delivery and monitoring of participants undertaking GRSS. In particular they could assess and monitor the overall outcome in terms of improved capacity to deliver effective road safety.

Specific tasks may include:

- GRSS Needs Assessment for individual, organisations and jurisdictions
- GRSS localised unit design for the context and resourcing identification
- Development of GRSS local centers of excellence, contracting, implementation and monitoring
- Delivery of selected units and units
- In jurisdiction GRSS outcome evaluation

## 12. Conclusion

By every measure and reported on the global stage time and time again, it is apparent that road trauma is a growing problem. Currently there is insufficient capacity to address the and counter the levels of death and injury in low and middle income countries.

To increase both the numbers of professionals and their build capacity to provide data driven, targeted effective interventions there is a need to establish a flexible, recognised Global Road Safety Studies programme.

This paper has outlined a proposal to establish, deliver and grow such a studies program. Considerable work is not required to gain financial and academic support to make it happen, as there is no doubt the need and demand for such a program exists.