

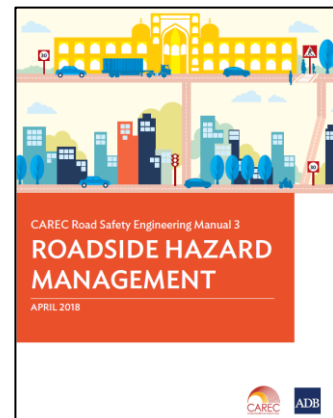
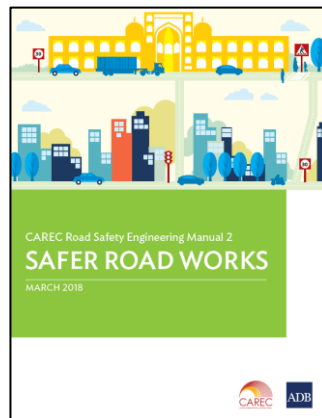
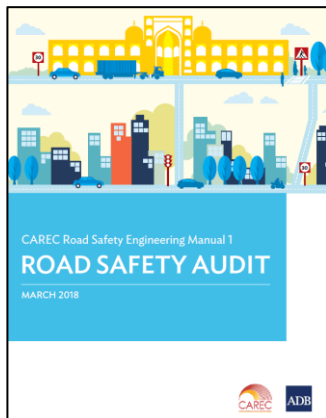


CAREC Institute

Improving Road Safety in CAREC Countries (Mongolia)

Workshop Proceedings Report

12 May – 2 June 2020



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The Central Asia Regional Economic Cooperation (CAREC) Institute workshop proceedings report, working paper, and policy brief series is a forum for stimulating discussion and eliciting feedback on ongoing and recently completed research and workshops undertaken and organized by the CAREC Institute and partners. The series deals with key economic and development issues, particularly those facing the CAREC region, as well as conceptual or analytical issues relating to program or policy design and implementation.

This proceedings report is one of the outputs of the virtual workshop on “Improving Road Safety in CAREC Countries (Mongolia).” The workshop was delivered through seven online sessions during 12 May - 2 June 2020. The workshop aimed at improving road safety in Mongolia by offering capacity building workshops to officials of the Ministry of Road and Transport Development of Mongolia, traffic police, and road safety professionals.

The report is drafted by Philip Jordan, ADB/CAREC Road Safety Engineering Consultant. It is edited by Eisa Khan Ayoob Ayoobi, CAREC Institute Chief of Capacity Building Division. Steven Lui, CAREC Institute Capacity Building Specialist, has contributed to the report.

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Preamble

The Central Asia Regional Economic Cooperation (CAREC) Institute has been closely collaborating with the Asian Development Bank (ADB) and other partners to design and deliver capacity building workshops in line with the CAREC Road Safety Strategy goals and objectives. The series of workshops is a joint effort to build understanding of best practice principles in road safety, particularly in the four essential components of road safety engineering:

- treating hazardous road locations (blackspots)
- road safety audits
- roadside hazard management
- safety at road work sites

In March and April 2019, five 4-day workshops on “Elements of Road Safety Engineering” were conducted for traffic police and engineers in Bishkek (the Kyrgyz Republic), Dushanbe (Tajikistan), Baku (Azerbaijan), Tbilisi (Georgia), and Tashkent (Uzbekistan). The sixth workshop in this series, originally scheduled to be held in Urumqi in early May 2019, was re-scheduled and delivered in Hohhot, Inner Mongolia, the People’s Republic of China (PRC), in early September 2019. ADB/CAREC Road Safety Engineering Consultant Phillip Jordan delivered all six workshops.

The CAREC Institute planned the next workshop in this series to be held in Ulaanbaatar, Mongolia in June 2020. As plans were developing, the COVID-19 pandemic closed country borders and impacted international travel. Rather than postponing the Ulaanbaatar workshop indefinitely, the CAREC Institute decided to deliver the workshop online.

Phillip Jordan was contracted to prepare and present the online workshop. The revised program involved seven 2.5-hour modules (See Appendix B). Module One commenced with official introductions from CAREC Institute and ADB officials at 9.30 am Ulaanbaatar time on Tuesday, 12 May 2020. Subsequent modules were held each Tuesday and Thursday until Tuesday, 2 June 2020. Zoom application was used to for the online meetings. Each module lasted about three hours, for a total of 21 hours of presentations. Overall, 48 participants took part in the workshop.

All PowerPoint slides were translated into Mongolian before each module, so participants could read all information in their language. Soft copies of the three CAREC Road Safety Engineering manuals (Mongolian edition) were given to all participants as workshop notes. Presentations were in English, with consecutive translation into Mongolian.

Participants were encouraged to ask and answer questions and make comments. Zoom allows this mode of interaction, however the delay due to the online nature of the workshop and translation made this challenging at the beginning. Participants and presenters became more used to it as the workshop progressed. A blackspot investigation and a road safety audit were given to participants as homework, and their reports were discussed in the following module. These homework tasks gave opportunities for practical application of road safety engineering theory, partly compensating for the case studies which represent the lynchpin of the face-to-face workshops.

Background

CAREC countries have made road safety a collective regional priority within the CAREC Program's framework. Consequently, with the support of the Asian Development Bank (ADB), CAREC adopted the "Safely Connected: A Regional Road Safety Strategy for CAREC Countries 2017–2030"¹ at the 15th CAREC Ministerial Conference on 26 October 2016. The aim of this strategy is to reduce fatalities on CAREC road corridors by 50% by 2030, as compared with 2010. The strategy aims to save 23,000 lives and avoid 250,000 serious injuries each year, yielding estimated savings of \$16 billion per year.

Every day, more than 3,500 people are killed in road crashes around the world.² This is approximately 1.35 million people each year. Although road crash is listed as the eighth deadliest cause of fatalities globally, it is ranked as the sixth most frequent reason in Central Asia. The CAREC region is mainly mountainous and landlocked (with only three coastal members – the PRC, Georgia, and Pakistan). The region is heavily dependent on roads and railways for transportation. Roads require safety measures to keep road users safe, and special measures are required to ensure the safety of road users in mountainous and landlocked regions like CAREC.

To support the objectives of the UN Decade for Action in Road Safety³ in reducing road trauma, the CAREC Institute, in collaboration with the ADB, has been delivering road safety engineering training workshops across the CAREC Region to help improve road safety in CAREC.

The CAREC Institute has been closely collaborating with the ADB to design and deliver capacity building workshops in line with the CAREC Road Safety Strategy goals and objectives. The Institute delivered its first road safety workshop – Designing Safer Roads: Accelerating the Implementation of the CAREC Road Safety Strategy – in Dushanbe, Tajikistan during 30-31 August 2017 with the following objectives:

- Build understanding of best practice principles in road safety engineering and of the four essential components of road safety engineering:
 - treating hazardous road locations (blackspots)
 - road safety audits
 - roadside hazard management
 - safety at road work sites
- Develop an action plan with priority actions for changes in policies and/or practices that may be required at the national level
- Provide an opportunity for experience sharing and developing collaboration on road safety engineering amongst countries within the region

Since then and in line with the stated objectives, the CAREC Institute, in collaboration with ADB, has been delivering country-specific workshop to all CAREC member countries. These workshops support actions highlighted in the 2017-2030 CAREC Road Safety Strategy, especially the need for capacity building in road safety (particularly road safety audit) for engineers.

¹ Safely Connected: A Regional Road Safety Strategy for CAREC Countries 2017–2030. ADB. Retrieved July 27, 2020, from <https://www.adb.org/sites/default/files/institutional-document/228011/carec-road-safety-2017-2013.pdf>

² Global Status Report on Road Safety 2018. World Health Organization. Retrieved July 28, 2020, from <https://apps.who.int/iris/bitstream/handle/10665/276462/9789241565684-eng.pdf?ua=1>

³ UN Decade for Action in Road Safety. World Health Organization. Retrieved July 27, 2020, from http://siteresources.worldbank.org/EXTTOPGLOOASAF/Resources/2582212-1265307800361/decade_of_action_2011.pdf

Online Elements of Road Safety Engineering Workshop

Outline of the Workshop

The online workshop was the seventh workshop (in the series of country-specific events) on “Elements of Road Safety Engineering in CAREC Countries.” This was designed for road safety target participants from Mongolia. It was the first online workshop on this topic and the first online workshop offered by the CAREC Institute during the COVID-19 pandemic. It was presented by Phillip Jordan (in Melbourne) via Zoom to participants in Ulaanbaatar, Mongolia, between Tuesday, 12 May 2020, until Tuesday, 2 June 2020. The virtual workshop was launched and administered from the CAREC Institute headquarters in Urumqi, Xinjiang, the PRC.

The workshop aimed to:

- 1) Introduce professionals from national highway authorities, provincial road agencies, national traffic police, consultants, etc. to the key elements of the road safety engineering profession.
- 2) Provide guidance, advice, and knowledge to assist road authorities in CAREC countries ensure safer roads for all.

An urban blackspot case study was used (via images and drawings using Zoom screen sharing) to give the participants experience with blackspot investigations after Module Four of the workshop. A road safety audit case study was given as “homework” to participants after Module Five as a “desktop” audit example.

At the beginning of the workshop, introductory remarks and welcome messages were given by Mr. Batbold Sandagdorj, State Secretary of Ministry of Road and Transport Development, Government of Mongolia, Mr. Jeffrey Miller, Principal Transport Specialist, ADB, Mr. Syed Shakeel Shah, CAREC Institute Director, and Dr. Iskandar Abdullaev, CAREC Institute Deputy Director Two.

Participants

There were around 50 participants in the online workshop. They were from the Ministry of Road and Transport of Mongolia, and traffic police. Initially, 40 participants were invited; however, more participants were introduced after Modules One and Two were delivered. The increase in participation was welcomed and seen as a sign of workshop effectiveness to attract more senior road safety professionals. To accommodate these additional participants, an extra module was delivered on Tuesday, 2 June, to ensure the newcomers benefitted from the workshop fully.

Road Safety Engineering Manuals

The three CAREC Road Safety Engineering manuals were used as the workshop notes. Being available in four languages (English, Russian, Mongolian, and Chinese), these manuals are useful resources in CAREC. The manuals were well received in the online workshop. They offer great opportunity for use in further workshops and technical training sessions in the coming years.

The Six Modules

Module One provided an overview of the road safety situation around the world with an emphasis to draw lessons for Mongolia. It also provided a general introduction to road safety engineering. Crash

causation was discussed to introduce participants to blackspot investigation techniques and importance of good crash data. The presenter emphasised the benefits to be gained from traffic police and engineers working in close cooperation, sharing resources, and information. Participants were encouraged to treat road safety as a business that requires investment to deliver significant returns.

Module Two focused on the technical topic of roadside hazard management. It included the concept of clear zones and how fixed objects and street furniture close to the road can be hazardous. This topic is a major one for all road authorities, as up to 40% of road trauma is due to single-vehicle run-off-road crashes.⁴ It generated much interest during this online workshop and is a topic that lends itself well to online learning. It should continue to be a major part of future online road safety engineering workshops.

Module Three was about pedestrian safety, in which the challenges of helping to keep pedestrians safe were discussed. Some 29% of Mongolia's road fatalities are pedestrians, and much more needs to be done to rectify this, especially in Ulaanbaatar.⁵ The four groups of high-risk pedestrians (the young, the elderly, the intoxicated, and the disabled) were discussed in detail along with the pedestrian facilities that engineers have available to help these vulnerable groups of road users. This module will continue to evolve as a major subject in future online workshops since the CAREC Program is producing a new manual on pedestrian safety.

Module Four addressed blackspot investigation techniques and ways to reduce crashes at hazardous locations. Topics included crash reduction factors, how to find patterns in crashes, and the economic savings possible through blackspot programs. Homework was set during this module. More details are given in the subchapter below.

Module Five introduced the process of road safety audit, including its costs and benefits, the different stages of audit and the types of road projects that can benefit from an audit. Sample audits from across the CAREC region were presented showing how a positive change can be achieved through the audit process. Homework was set during this module. More details are given in the subchapter below.

Module Six covered three technical topics - road signs and road markings, safety at road works, and good practice in intersection design. Each of these technical topics is an important subject that needs time to be fully detailed. The online workshop condensed them into a single module, and this is a programming issue that may need review before the next online workshop. Safer intersections, and good signal/delineation in particular need more time for broader content to be included.

Blackspot Investigation

Module Four addressed blackspot investigation techniques and ways to reduce crashes at hazardous locations. Topics included crash reduction factors, locating patterns in crashes, and possibility of economic savings through blackspot programs.

The workshop was designed to be a practical workshop in which participants would “learn by seeing and doing.” The blackspot investigation was an important case study in this workshop. Participants were assigned a pedestrian blackspot case study from another CAREC location (Dushanbe, Tajikistan) with photographs of the site and a crash factor grid showing crash details for the past three years. They were asked to look for patterns in the crashes, and to develop appropriate and low-cost crash

⁴ Observed in Victoria, Australia based on data from 2000-2020. Retrieved July 29, 2020, from <https://www.tac.vic.gov.au/road-safety/statistics>

⁵ Global Status Report on Road Safety 2018. World Health Organization. Retrieved July 29, 2020, from <https://apps.who.int/iris/bitstream/handle/10665/276462/9789241565684-eng.pdf?ua=1>

countermeasures based on their findings. Ten participants submitted reports in time for discussions during Module Five. Hence, further practical discussions took place between the resource person and participants on this important topic and lessons were drawn for Mongolia.

Road Safety Audit

The CAREC Road Safety Audit manual (2018) defines road safety audit as a formal examination of an existing road or future road or traffic project in which an independent, qualified auditor informs about the project's crash potential and safety performance. A road safety audit considers the road safety needs of all road users who may use a new road/highway once it is rehabilitated and upgraded. It seeks to identify potential risks during the design stage to make practical recommendations for changes to reduce or eliminate these prior to construction. An audit is not a compliance check with national standards or norms. Some of the safety concerns identified in an audit may be due to national practices and/or standards that are no longer recognised as “safe” by international criteria. Emphasis was placed on the concept that “prevention is better than cure” and that auditors are problem “finders” as opposed to problem “solvers.”

An audit task was set in Module Five as “homework” for the participants. It appeared that many participants found this homework challenging, as only five of them submitted reports. The audit example came from Georgia (as there were no drawings available for Mongolian road projects) and it is possible that the standards used for road projects in Georgia differ from those of Mongolia. This made the case study more difficult for participants than if they audited a local case. It is possible too that some participants were not familiar with technical drawings, and for these ones “face-to-face” assistance would be desirable. Still, some significant safety concerns were identified in the audit reports, and some positive recommendations were made to address these concerns.

Lessons Learnt

Several lessons were learnt from this online technical training workshop, and these are outlined here for consideration in future workshops.

- a) Online training is a valuable tool for use in disseminating knowledge widely across national borders and international time zones. This first online workshop proved a success.
- b) More online workshops should be built into future training programs, even when travel restrictions ease. They can be used to spread technical knowledge further afield, such as into remote areas (like provincial and rural offices) where professionals may be less likely to attend “face-to-face” workshops than their counterparts in capital cities. It is a low-cost way of spreading technical knowledge widely, quickly, and efficiently.
- c) Traditional “face-to-face” workshops do still offer advantages over online workshops and it is therefore recommended that both types of workshops be used for capacity development across CAREC once travel restrictions are lifted. The CAREC Institute is already taking steps in this regard by transforming its capacity building delivery approach into a hybrid learning program.
- d) There is a need to have a program for the workshop agreed by all stakeholders at least three months before the workshop. This 3-month preparatory period allows for planning, invitations, PowerPoints, translations (and travel arrangements when allowed).
- e) Ensure the local organisers understand that the program involves local case studies. Blackspot case studies require crash data (from police) and audit case studies require design drawings (from the road authority). Therefore, the more data available the better experiential learning opportunities for the target participants.
- f) Simultaneous translation is desirable and is needed for all workshops where English is not the common language. It saves a considerable amount of time compared with consecutive translation.
- g) Translation and questions (which were encouraged) take up time. The 7 x 2.5-hour modules that were prepared for this new online workshop went overtime. A lesson for future workshops is to review the time schedule for each session. It will be more effective overall to give shorter sessions (suggested 2-hour modules) and to spread out the total workshop over more days.
- h) The blackspot homework was well received, however only few submitted reports (less than a quarter of participants). It was still an excellent opportunity for “practical learning,” and future online workshops should plan for such homework.
- i) The audit homework had only five reports submitted. This suggests that more time is needed for participants to better understand how to carry out an audit. Close mentoring between experienced auditors and local engineers is needed too through face-to-face workshops as well as the ongoing road safety projects in CAREC member countries.
- j) There was a keen interest from participants in how best to assist pedestrians. Pedestrians are a large group of road fatalities in CAREC countries (between 25% and 40% of national road fatalities)⁶ and therefore Module Three was fully devoted to the topic of pedestrian safety. With the fourth CAREC Road Safety Engineering manual (on pedestrian safety) due in the coming months, it is recommended that this topic be retained as a major subject in future workshops.

⁶ Global Status Report on Road Safety 2018. World Health Organization. Retrieved July 29, 2020, from <https://apps.who.int/iris/bitstream/handle/10665/276462/9789241565684-eng.pdf?ua=1>

Recommended Next Steps

This workshop was successful in presenting important road safety engineering topics. The workshop highlighted that there is a real opportunity to assist the next generation of engineers to broaden their thinking on matters of road safety and avoid simply following “design standard.” It is important to note the requests from participants for similar workshops. They see the need for more road safety engineers in their country and they appreciate the support to train and mentor future professionals. Consequently, the following recommendations are made for inclusion in future activities:

- a) Continue to present as many technical training workshops on road safety engineering as the resources permit.
- b) Online workshops work well and can distribute technical knowledge across wide areas in a short time. A new round of online road safety engineering workshops should be planned for the second half of 2020 while travel restrictions are still (likely) in place.
- c) E-certificate issued to participants by the CAREC Institute was well received. They should be available to those who participate throughout each module. The certificates may become an element of national registration as auditors. This issue needs further and broader discussion, together with ways that future activities can help the CAREC countries to implement the road safety audit process more effectively. There is a widespread interest in the audit process, but no CAREC country has yet implemented it in a comprehensive way. There is a need to assist countries to implement the audit process; key steps towards this are more technical training workshops, establishing national auditor registration schemes, and preparing national audit policies.
- d) The CAREC Road Safety Engineering (RSE) manuals are valuable workshop notes. They should continue to be used as the notes for future workshops. The fourth manual (pedestrian safety) is nearing completion to meet the high level of interest in pedestrian safety within CAREC region. It will add value to future workshops. Other manuals on various topics (blackspot Investigations, intersection safety and more) are needed and, when prepared, can be added as workshop notes.
- e) The case studies (blackspot investigations and road safety audits) were well received by all participants, but they do take preparation time and effort. While a blackspot case study and an audit case study were given as “homework” during the workshop, it was not possible to get local sites for either case study. Foreign examples were substituted, which meant that participants had a more difficult challenge than they would have had if the case study was from local examples.
- f) Strengthen connections with national technical universities to assist the teaching staff to be better equipped to teach road safety engineering to their engineering students. It is strongly recommended that the CAREC Institute and the ADB take up this idea and take this workshop program into universities across the CAREC region to assist professors to better understand road safety engineering. In this way, they will be better placed to teach this important topic to their engineering students, thus increasing awareness and knowledge amongst the future generations of CAREC road safety professionals.
- g) Create a network of national technical universities which can participate in these workshops and enhance the sharing of road safety experience across the region. In time, this network may be able to present the required national training workshops for auditor accreditation. Also, in time, the network may become a focal point for sharing and mentoring in road safety audits (including cross-border audits) for national road authorities.

Read also [September 2019 workshop report](#) with recommendations.

Appendix A: List of Workshop Participants

Name	Position / Organization
D.Zargdradnaa	Acting Head of Road Policy Implementation and Coordination Department, MRTD
D.Enkhtuya	Senior specialist, MRTD
S.Munkhbat	Specialist, MRTD
Ch.Sugarmaa	Specialist, MRTD
B.Nasantogtokh	Specialist, MRTD
A.Khanbayar	Head of Division, MRTD
O.Lkhagvasuren	Head of Division, MRTD
Kh.Myagmarjav	Specialist, MRTD
J.Bayarsaikhan	Specialist, MRTD
S.Gankhuyag	General manager of NBCC LLC
J.Altan-Orgil	Engineer of NBCC LLC
Ch.Bolor-Erdene	Engineer of MCPCGR LLC
D.Batsukh	Engineer of Avarga Zam LLC
Z.Batbayar	Director of Zaabar LLC
Ch.Nyamsuren	Coordinator, Road Sector Policy Advice TA of Regional Road Dev and Maintenance Project
Yu.Ulambayar	Director, Bodi Uguuj LLC
D.Enkh-Amgalan	Head of Office of National Road Safety Council, Policy Planning Department, MRTD
A.Enkhbold	Specialist, National Road Safety Council, Policy Planning Department, MRTD
E.Munkhnasan	Senior specialist, Policy Planning Department, MRTD
D.Unurtsetseg	Specialist, National Road Safety Council, Policy Planning Department, MRTD
A.Batchuluun	Senior QM specialist, Research, Development, Quality Management, National Road Transport Centre
P.Enkhbayar	Tech Inspection Eng. Development Quality Management, National Road Transport Centre
M.Erdenedalai	Head of Technical Inspection Division, National Road Transport Centre
D.Erdenemunkh	Senior specialist of Technical inspection registration and information, Technical Inspection Division, National Road Transport Centre
D.Dashdorj	Head of Monitoring Unit, National Road Transport Centre
S.Zorigoo	Senior specialist, Monitoring Unit, National Road Transport Centre
S.Onon	Specialist of Road transport monitoring, Monitoring Unit, National Road Transport Centre
M.Enkhtulga	Specialist in charge of provincial branches and passenger transport centres, Passenger Transport Unit, National Road Transport Centre
E.Ganzorig	Specialist of Hazardous, oversized and heavy machinery transport, Freight Transport Unit, National Road Transport Centre
Ts.Battulga	Specialist, examinations, Professional Driver Unit, National Road Transport Centre
Ts.Nerguibaatar	Senior inspector, Road Transport Policy Implementation and Coordination Dept, MRTD
Ts.Bayarjargal	Inspector, Road Transport Policy Implementation and Coordination Department, MRTD
T.Maygmarsuren	Inspector, Road Transport Policy Implementation and Coordination Department, MRTD
S.Nansalmaa	Specialist, Road Transport Policy Implementation and Coordination Department, MRTD

Name	Position / Organization
J.Narantugalag	Specialist, Road Transport Policy Implementation and Coordination Department, MRTD
S.Javkhlantbaatar	Deputy Head of Transportation Police Department
S.Galbadrakh	Senior Traffic Police, Equipment and Road Monitoring Unit, Traffic Police Division, Transportation Police Department
Ts.Erdenechimeg	Senior specialist of Research and information, Planning and Coordination Unit, Administration Division, TPD
B.Erdenekhuyag	Senior Police, Equipment & Road Monitoring Unit, Traffic Police Division, Transportation Police Dept
B.Tamir	Police, Equipment & Road Monitoring Unit, Traffic Police Division, Transportation Police Dept

CAREC Institute

- 1) Mr. Eisa Khan Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute
- 2) Ms. Dildar Zakir, Capacity Building Specialist, CAREC Institute
- 3) Ms. Rose Shao, Capacity Building Specialist, CAREC Institute
- 4) Mr. Gary Huang, Information Technology Specialist, CAREC Institute
- 5) Mr. Steven Liu, Capacity Building Specialist, CAREC Institute

Resource person

Mr. Phillip Jordan, Consultant, Asian Development Bank (ADB)

Interpreter

Dr. Ichinnorov Bazarragchaa

Appendix B: Workshop Program

The workshop focused on Pillar Two of the UN Decade of Action for Road Safety – Safer Roads. The workshop followed three manuals on Road Safety Engineering published by CAREC in 2018, as well as the forthcoming manual on pedestrian safety (2020). The workshop covered two main road safety engineering processes:

- The reactive process of blackspot investigations. The workshop showed how “high crash frequency” locations can be investigated and treated with low cost countermeasures. The importance of access to good crash data, and close cooperation between Police and engineers, was emphasised.
- The proactive process of road safety audit. The workshop showed engineers how they can prevent crashes on new roads by applying the road safety audit process during the planning, design and construction of new road projects.

CAREC “Elements of Road Safety Engineering” Workshop Ulaanbaatar online program		
Online version – May 2020		
Module 1 Tuesday 12 th May ROAD SAFETY ENGINEERING – THE BIGGER PICTURE		
0930	Welcome – outlining the objectives of the workshop. Setting the scene, including introduction of participants.	CAREC
0940	Road Safety Engineering – the bigger picture . Detailing what engineers can do to reduce road trauma, outlining the global and national road safety problem; emphasising “the road” in road safety.	Phillip Jordan
1000	Key processes in the road safety engineering profession – an overview of how engineers can successfully reduce crashes at hazardous locations, and how they can apply their knowledge during the designs of new roads to prevent future crashes.	Phillip Jordan
1100	Technical knowledge for road safety engineers – principles of safe intersection design and control.	Phillip Jordan
1200	Session 1 close	Moderator
Module 2 Thursday 14 th May TECHNICAL TOPICS IN ROAD SAFETY ENGINEERING		
0930	Review of Session 1 – questions, discussions sent via email from participants to the Moderator.	Moderator
0940	Technical knowledge for road safety engineers - roadside hazard management – fundamentals to keep in mind during an audit or when treating a run-off-road crash problem. Understanding the clear zone concept and the 5-part roadside hazard management strategy.	Phillip Jordan
1200	Session 2 close	Moderator
Module 3 Tuesday 19 th May TECHNICAL TOPICS IN ROAD SAFETY ENGINEERING		
0930	Review of Session 2 – questions, discussions sent via email from participants to the Moderator.	Moderator
0940	Technical knowledge for road safety engineers - pedestrian safety; remembering safety for the largest group of road users.	Phillip Jordan
1200	Session 3 close	Moderator

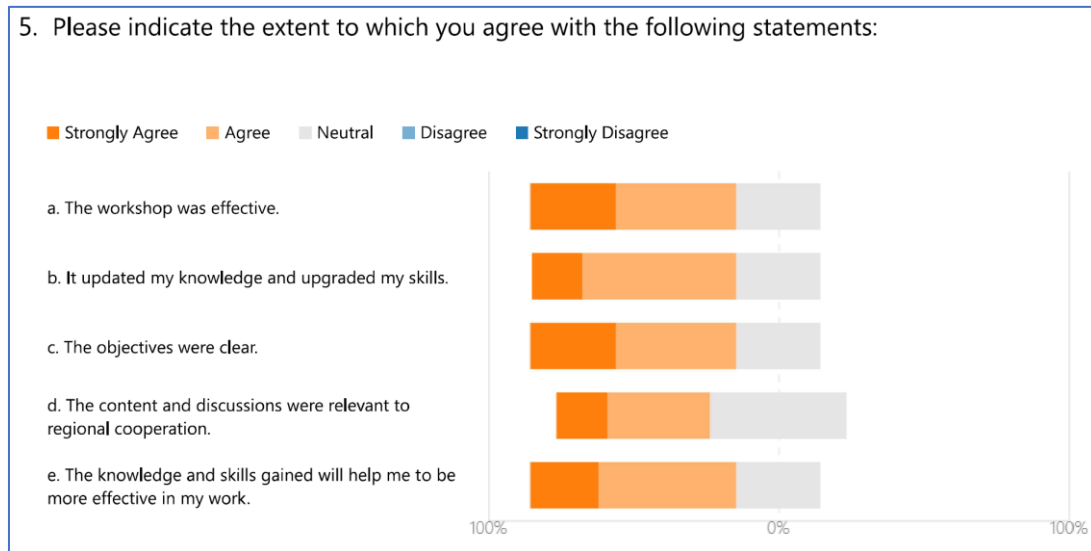
Module 4 Thursday 21 st May INVESTIGATING “BLACKSPOTS”		
0930	Review of Session 3 – questions, discussions sent via email from participants to the Moderator.	Moderator
0940	Investigating “high crash frequency” sites – taking crash data and turning it into useful information to assist with crash investigations. How to find crash patterns by using collision diagrams and crash factor grids. This session included several case studies for participants (using photographs and local crash data) to practise their blackspot investigations.	Phillip Jordan
1200	Session 4 close	Moderator

Module 5 Tuesday 26 th May ROAD SAFETY AUDIT		
0930	Review of Session 5 – questions, discussions sent via email from participants to the Moderator.	Moderator
0940	Introduction to Road Safety Audit – how, what, when, where, why. Includes information about how to manage the audit process – a national RSA policy, accreditation of auditors, TOR for audits, what to do with an audit report.	Phillip Jordan
1200	Session 5 close	Moderator

Module 6 Thursday 28 th May TECHNICAL TOPICS IN ROAD SAFETY ENGINEERING		
0930	Review of Session 4 – questions, discussions sent via email from participants to the Moderator.	Moderator
0940	Technical knowledge for road safety engineers – road safety at road works.	Phillip Jordan
1030	BREAK	
1040	Technical knowledge for road safety engineers - signs, lines and delineation.	Phillip Jordan
1200	Workshop summary, close and virtual presentation of certificates.	CAREC

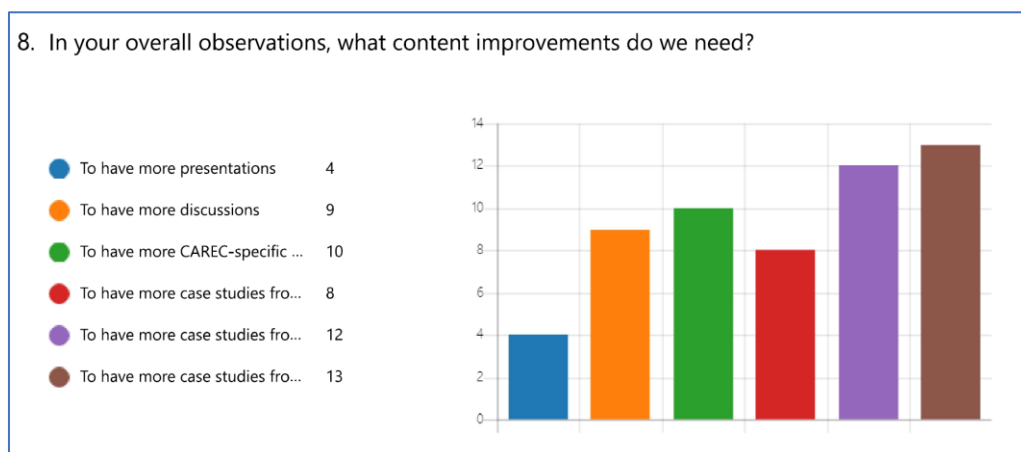
Appendix C: Summary of Evaluation Forms

An online evaluation form was distributed to all participants; a total of 17 responses were received (10 females, 7 males). The following figures summarise the overall findings from these responses. The participants found the workshop to be effective, felt that it helped them improve their skills and knowledge, and believed it will make them more effective in their work. The results overall are very pleasing and encouraging.



The evaluation forms also contained suggestions as follows:

- More workshops are wanted.
- Participants request more discussions, more case studies, and more CAREC specific and *developing country* specific case studies.
- Some participants requested more case studies from *developed countries* – this might have been participants who are keen to learn from some of the leading countries around the globe.



The results encourage CAREC Institute to continue with its road safety workshops on its newly established e-learning platform. The institute will also consider offering more online workshops on road safety engineering, as well as road asset management.