

**Lao Road Sector Project: Consulting Services
“LRSP-RSC-Package 04h-CS”**

**Sub-Component C2-15 Road Safety Audit (RSA)
Terms of Reference
Finalisation of RSA Manual and Training of Trainers of RSA**

1. Background

1.1. Lao Road Sector Project 2

The Ministry of Public Works and Transport (MPWT) of Lao PDR has received financing support from World Bank and the Nordic Development Fund (NDF) to implement Lao Road Sector Project 2 (LRSP2) (March 2017-February 2022), which will support MPWT strengthen its capacity at both central and local levels to manage local road improvement and maintenance. The European Investment Bank (EIB) has also expressed interest to provide financing support to the implementation of the road local road development program designed under LRSP2.

The WB has approved a credit of approximately USD 25 million, and NDF a grant for a Technical Assistance (TA) program amounting to EUR 5 million and a loan not exceeding EUR 6 million to finance the LRSP2. EIB may provide a loan of approximately EUR 20 million and a grant of EUR 5 million for civil works. In addition, the Road Maintenance Funds (RMF) will contribute approximately USD 7 million, and the 6 participating provinces also will contribute around USD 3 million to the Project.

The MPWT is the Executing Agency (EA) for LRSP2. A project management team formed under the Department of Planning and Cooperation (DPC), MPWT will provide overall project coordination and monitoring. The project has included support to strengthen capacity of department concerned in MPWT and provinces. Department of Finance will be responsible for providing procurement support to the concerned departments. Department of Road with support from design and supervision consultant is responsible for managing the road works and road asset management systems development. At provincial level the six provincial Departments of Public Works and Transport (DPWT) covered by the Project (Phongsaly, Houaphan, Oudomxay, Xiengkhouang, Xayabouly and Bolikhamxay) will be responsible for the implementation.

The Project has been designed as a program to support the strengthening of maintenance systems that will result in improved connectivity. It will support institutional development through the preparation of financing and policy frameworks, improved planning and prioritization, and governance systems, as well as improved technical capacity for the road sector as a whole in order to maximize the effectiveness of public expenditure and allow for the incremental increase in the length of the provincial roads network in good and fair

condition, its climate resilience and safety. The Project will also finance periodic maintenance and routine maintenance works in the six provinces mentioned above.

LRSP2 consists of four components: (1) Climate Resilient Road Maintenance, (2) Institutional Strengthening, (3) Project Management Support, and (4) Emergency Response.

Component 1: Climate Resilient Road Maintenance: To finance the climate resilient periodic maintenance and routine maintenance works program in the six provinces, including technical assistance for design and supervision of works.

Component 2: Institutional Strengthening: To provide technical assistance, goods, training, and operating costs for (a) Strategic Planning and Financing; (b) Sector Governance; (c) Climate Resilient Road Asset Management; and (d) Capacity Building.

Capacity Building includes a program of activities to: (a) strengthen the operating, fiduciary and human resource systems of MPWT and provincial and district road authorities; (b) strengthen the capacity of MPWT and other relevant government agencies to assess and manage the technical, environmental and social aspects of potential future public private partnerships and performance based contracting modalities in the road sector; (c) develop or update environmental and social management manuals and procedures in the road sector; and (d) develop and implement traffic safety action plans, audit manuals, training programs and public awareness raising campaigns.

1.2. Lao National Road 13 North Improvement and Maintenance project

The Bank and the Government of Lao (GoV) is also preparing the Lao National Road 13 North Improvement and Maintenance project (NR13N). The intended Project Development Objective is to improve road services on critical sections of national road 13 in Lao.

National Road 13 is the most important highway in Lao PDR, connecting Laos with China in the North and Cambodia in the South, for a total length of 1,500 km. The total length of NR 13 North from Vientiane to Boten is 671 km. The proposed project road (NR13N) from Vientiane to Phonhong is 58 km, and is a critical stretch serving high traffic volumes. The section of NR13N close to Vientiane has a higher traffic volume, while the volume decreases for the section farther from Vientiane.

The proposed project has three components:

Component 1 — Road Improvement and Maintenance. This component would finance (i) improvement works to address road capacity constraints, climate resilience, quality, and traffic safety aspects on 58 km of NR13 North. The road sections include:

- a. Section Sikeut-Ban Dong (km 12 to km 31) for a proposed upgrade from 2 to 4-lane with 24m right-of-way; and
- b. Section Ban Dong-Phonhong (km 31 to km 70) for proposed improvement of the existing 2-lane with 16m right-of-way.

Component 2 — Supervision and Capacity Building. This component will finance (i) supervision of road improvement works including (a) review the designs prepared by the Contractor; (b) supervision and monitoring of the works (rehabilitation, upgrading and maintenance) on the project road; (c) monitoring compliance with performance indicators during the first two years of the O&M period; (d) advising MPWT on all aspects of NR13N project implementation; and (e) strengthening the capacity of MPWT to implement and monitor OPBRC contracts; and (ii) technical assistance to prepare environmental and social studies and detail design for NR13 North km6-km12.

Component 3 — Project Management. This component would finance (i) project and contract management and monitoring; (ii) financial audit; (iii) monitoring implementation of environment and social requirements; (iii) traffic safety activities; and (iv) incremental operating costs and training costs.

1.3 Road Safety Problems

Challenges to the development of a safe, reliable, and efficient road sector include excessive speed, insufficient road markings, and inadequate coordination between the various organizations with responsibilities in this area. In addition, inappropriate driver's behaviour, lack of law enforcement, and poor traffic management, in combination with deteriorating road conditions, result in growing road safety problem in Lao PDR.

There are a large numbers of stakeholders involved in traffic safety in Lao PDR. Overall responsibility for the formulation of the national traffic safety program rests with the National Road Safety Committee (NRSC) led by the Ministry of Public Works and Transport (MPWT). The NRSC is also in-charge with

obtaining funding for the implementation of recommended measures. The implementation of safety measures on national and rural roads as well as urban streets.

Lao is currently programming the completion of several Draft documents directly related to road safety. They include the Draft Signs and Road Markings Manual, the Road Safety Strategy and Action Plan 2011 – 2020 and the Draft Road Safety Audit Manual. The Draft Strategy and Action Plan makes a strong commitment to continuing Road Safety Audit in the country and completing a Manual.

A road safety audit can be defined as "... a formalized examination of an existing or future road or traffic project or any project which interacts with road users, in which an independent, qualified examiner reports on the project's crash potential and safety performance." The purposes of audits are to identify potential safety problems for all road users and others affected by a road project and to ensure that measures to eliminate or reduce problems are considered fully. Thus, the emphasis of audits is placed on preventive measures and incorporating road safety into the development and design of projects. Well-documented experience in Europe and Australia and now Asia, shows that formal systematic safety audit procedures are an effective and cost-beneficial tool to improve road safety.

Road Safety Audits and RSA training has been carried out in Lao for about 10 years on many important projects including Road 8, Road 9, Vientiane Capital Roads and ADB 11. However, there is an urgent need to greatly increase the numbers and level of expertise of local auditors.

Draft Road Safety Audit Manual was prepared in 2013 (Full report is available at the DOT). It is detailed, extensive and directly related to Lao.

Under component 2 of LRSP2, MPWT intends to hire Road Safety Strategy and Action Plan consultant, Road Safety Audit consultant and to implement traffic safety campaign

2. Objectives

The general objective of this assignment is the review and finalisation of an existing Draft Road Safety Audit Manual (October 2013), training of trainers in RSA and pilot implementation of RSA in several selected roads under LRSP2 and NR13.

3. The scope of work

To accomplish the objectives, an individual consultant will carry out the RSA project in two phases: Finalisation of the Manual and Training

- I) Finalisation of the RSA Manual for Lao PDR, taking into account of RSA manuals of other countries with similar context. The Draft Final Lao RSA Manual that will be submitted to the DOT/NRSC for approval

- II) RSA Training. Training of trainers will be conducted for about 45 participants together with in country or regional university. The content of this training should cover the following:
 - i) Course on introduction of RSA, (topics: why do we need to carry out road safety audits; what is a RSA: how to carry out a RSA and writing a road safety audit procedure; common problems and solutions; writing a good RSA report; check lists and control data; urban problems such as priority junctions, roundabouts; pedestrian and cycle crossings; traffic signals and rural problems such as villages, steep bends, designing for slow vehicles such as farm tractors
 - ii) Workshop on road safety engineering, (topics to focus on engineering measures that can reduce crash frequency and severity)
 - iii) Workshop on traffic and traffic safety management, particularly during road works
 - iv) Workshop on role of police enforcement and road safety education campaigns in RSA
 - v) Workshop on Collision Investigation, (provide some practical experience in analysing crash data and recommending remedial measures)
 - vi) Workshop on roundabout audit
 - vii) Workshop on traffic signal audit
 - viii) Workshop on pedestrian and non-motorised facilities
 - ix) Workshop on motorcycle facilities
 - x) Pilot implementation of RSA on several selected roads under LRSP 2, including writing reports and presentation of findings and recommendations
 - xi) Workshop on becoming trainers

- III) Conduct a RSA on Detail Design of the National Road 13 North Improvement Project including writing reports and presentation of findings and recommendations

The course and workshops will be of 10 to 15 days' duration including practical work in the field. This may be accomplished by combining some of the workshops in an appropriate manner agreed with the DOT

After the training, successful participants will receive a certificate as an RSA auditor/RSA trainer. They will have to have completed all aspects of the

training, carried out the pilot audits and written a report and presented the findings. They will have the opportunity to be trainers for future programmed courses

45 participants will be selected from DOR, DOT, Provinces and Consultants, with the criteria of having a BSc. Degree or higher that included courses in road, bridge or traffic engineering and 3 years' experience in road design or construction or in road safety issues

4. Time Schedule and Consultant Inputs

It is estimated that the consultant will spend approximately four person-months over the period of six calendar months to complete the assignment. The consultant shall commence work within three weeks from the date of signing of contract. However, the consultant is expected to produce and submit his/her own work plan and budget plan based on the ToR for consideration.

5. Required Qualifications

Extensive experience in road safety engineering, road safety audit and training including:

- At least Bachelor degree in civil engineering or relevant areas
- At least 15 years practical experience in carrying out road safety audits and the development of RSA Manuals in the region and in similar countries to Laos.
- At least 10 years of providing training to road engineers as well as allied professionals such as police officers, government officers and elected officials
- Experience in the region and fluent in English, with strong report-writing and oral presentation ability.
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6. Outputs and Reporting Requirements

Reports will be prepared for MPWT/NTSC and the consultant is required to carry out briefing and debriefing to DoT and World Bank on the implementation of the assignment.

Reports will be presented in MSWord and PDF formats. 2 copies of each report will be delivered – one in English and one in Lao.

6.1 Study deliverables will include:

- An Inception Report including work and budget plan (**within 1 week of starting**)
- Draft RSA Manual
- 45 certified RS auditors,
- RSA Reports for designated LRSP2 roads

- Specialized RSA report for detailed design (DD) of NR13 after two weeks of draft DD submission.
- Final Report on Project and recommendations for the way ahead, **(within 6 months of starting)**

Dates of all the deliverables will be agreed after acceptance of the Inception Report

6.2 Data, Services and Facilities to be provided by the Client

The Client will provide:

- i) All available data and reports on road safety, including technical drawings of roads to be audited
- ii) Access to relevant agencies
- iii) Counterpart
- iv) Office space
- v) Training facilities including rooms and audio-visual aids
- vi) Transport for all participants to on-site audits
- vii) Budget for provision of high visibility safety clothing for site visits
- viii) Budget related to expenses of trainees.

7. Budget

The contract is a Lump Sum Contract with an individual Consultant. However, the consultant is illegible to employ can hire one or two locals for translation and financial administration support.

The consultant will receive a total payment that has been established based on the understanding that it includes all of the Consultant's costs and any tax obligation that may be imposed on the Consultant.

Contract registration and any other fee associated with the contract and the payment need to be included in the contract.

8. Payment

The payment will be as follows:

- 20% of contract price upon submission of inception report
- 15% of contract price upon submission of draft RSA manual
- 15% of contract price upon submission of final draft RSA manual
- 30% of contract price upon completion of traffic safety audit training;
- 20% upon submission of the Final Report.