

Government of Nepal  
 Ministry of Physical Infrastructure and Transport  
 Singh Durbar

**Request for Expression of Interest (REOI) (Consulting Services-Individual)**

Date of Publication: 15<sup>th</sup> September 2015

Name of the Project: Road Safety Support Project (RSSP)

Government of Nepal (GON) has received financing from the World Bank towards the cost of the Road Safety Support Project (RSSP) and intends to apply a part of proceeds for consulting services of individual Consultant to the Ministry of Physical Infrastructure and Transport. The consulting services ("the services") includes providing consultancy services for **i) Revising Vehicle and Transport Management Act 2049 and Vehicle and Transport Management Rules 2054, ii) formulating/ drafting Transport Policy 2072 and iii) Development of Nepal Road Crash Database System.**

The Ministry of Physical Infrastructure and Transport now invites Individual Consultant for the post mentioned below to indicate their interest in providing the Services. Interested Consultants should present information demonstrating that they have the required qualifications and relevant experience to perform the Services, duration and short listing criteria for each post are:

SN	Reference no	Post	Duration of service	Qualification/Experience
Revising Vehicle and Transport Management Act 2049 and Vehicle and Transport Management Rules 2054				
1	RSSP-MOPIT -S -IND-2-A	Team Leader/Transport Expert	120 working days	Master in Civil, Mechanical, Highway or Transportation related Engineering with at least 15 years of general experience of which 10 years of experience of road transport sector. Additional Master degree in Transportation related Engineering will be an advantage.
2	RSSP-MOPIT -S -IND-2-B	Legal Expert	120 Working days	LL.M. Degree and with at least 10 years of experience in the legal field (Member).Additional Master degree in business and experience in drafting Acts, regulations or guidelines will be an advantage.
Formulating/ drafting of Transport Policy - 2072				
3	RSSP- MOPIT -S -IND-8-A	Spatial Planner / Transport Economist / Transportation Engineer Cum Team Leader	120 working days	The Spatial Planner and Team Leader should have a Master degree in Spatial Planning or Transportation Engineering or Transportation Planning or Highway or Civil Engineering with at least 15 years of working experience in the field of Regional or National Level Transportation.
4	RSSP- MOPIT -S -IND-8-B	Transport Planner (TP)	120 working days	Master Degree in Transportation Engineering or Transportation Planning or Highway or Civil Engineering and should have at least 10 years of experience in Transportation Planning preferably at National level.
5	RSSP-MOPIT -TP -IND-8-C	Transport Safety and Mechanical Engineer (RSME)	50 working days	RSME should have at least Bachelor degree in Mechanical Engineering with at least 5 years of experience in Road Safety and Transport Management. Master degree in Mechanical Engineering and more experience in transport sector will be an additional advantage.

6	RSSP-MOPIT -TP -IND-8-D	Legal Expert	30 Working days	LL.M. Degree and at least 10 years of experience in the legal field (Member). Additional Master degree in business and experience in drafting Acts, regulations or guidelines will be an advantage.
Development of Nepal Road Crash Database System				
7	RSSP-NRSC-S -IND-10-A	Road Safety Specialist/ Team Leader (International)	30 Working days	Minimum of Bachelor's Degree in related Engineering field Preference will be given for a candidate with Master degree or a Ph D in transport. At least of 10 years of experience working in road safety
8	RSSP-NRSC-S -IND-10-B	Crash Database Specialist (International)	120 days	Minimum Bachelor's Degree with Major in Statistics/ Economics Preference for Masters' Degree or a Ph D in road safety. Minimum 4 years experience in analysis and use of crash data and road safety related projects and database development works Training in GIS Trainings on crash database management and/or other database development
9	RSSP-NRSC-S -IND-10-C	Database Specialist (National)	120 days	Minimum Bachelor's degree in the field of regional planning/ engineering Preference for Masters' Degree or trainings on crash database management and/or other database development

The total duration of the service will be 20 weeks period for Revising Vehicle and Transport Management Act 2049 and Vehicle and Transport Management Rules 2054 and six months for formulating/ drafting Transport Policy 2072 and Development of Nepal Road Crash Database System after signing of the contract.

The attention of interested individual consultant is drawn to paragraph 1.9 of the World Bank's Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants World Bank Borrower dated January 2011 "Consultant Guideline " setting forth the World Bank's Policy on conflict of interest.

A consultant will be selected in accordance with the Individual Consultant (IC) method set out in the Consultant Guidelines.

**Terms of Reference (TOR)** for the mentioned assignment title are attached herewith. Further information can be obtained at the address below during office hours 10.00 to 17.00 hours.

Expression of Interest may be delivered in a written form in the address below (in person or by mail or by fax by 5.00 PM, 14 October, 2015.)

Only short listed candidates will be contacted for further information or interview if any (The interview will be conducted if it is felt necessary.)

Government of Nepal

Ministry of Physical Infrastructure and Transport

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Government of Nepal  
Ministry of Physical Infrastructure and Transport  
Department of Transport Management  
Minbhawan, Kathmandu

Terms of Reference (ToR) for Proposed Revision of Vehicles and Transport Management  
Act-1993 and Vehicles and Transport Management Rules 1997  
***(Including TOR for individual expert)***

## **1. Background**

The Vehicles and Transport Management Act-1993 (VTMA-1993) was approved on January 6, 1993 and the first amendment was concluded in August, 1993. The Act was intended to make transportation services consolidated, efficient and effective with a view to preventing motor vehicle accidents, enabling the victims of accidents to have compensation, provisioning for insurance and making transportation facilities available to the public generally in a simple and easily accessible manner.

VTMA-1993 classifies the motor vehicles and it describes the registration requirements of the vehicles for various circumstances. Similarly it explains the provisions for driving as well as conductors' license. VTMA-1993 has stated the provisions for transport management and traffic control. The Act describes the insurance provisions for passengers, vehicle crew members and baggage. The Act elaborates the duties, functions, and authorities of the Department of Transport Management (DOTM), Transport Management Committees, and examination committees. The Act has provisions for punishment for violating the act.

However, most of the provisions mentioned in the VTMA-1993 are not relevant in the changing context. At present, there are more than 1.7 million motorized vehicles in Nepal. Urbanization, economic growth, regional development and other factors are behind the motorization in the country. In this context, transport management has been challenging increasingly. The two decade old provisions in the VTMA are needed to be revised.

The vehicle fleet management which includes the import of motor vehicle, registration, operation, taxation, maintenance, and decommissioning of vehicles are the issues that need to be addressed by the Act. The issues such as road accident, congestion, emission, energy consumption are other factors that need to be resolved as quickly as possible.

## 2. Objectives

The main objective of this assignment is to draft amendment of the Vehicle Transport Management Act 1993 and Vehicle Transport Management Rules (VTMR – 1997) in tandem with the present realities of urbanization and regional development.

## 3. Scope of Work

The proposed VTMA and VTMR should include the following but not limited to:

- Review the issues in transport management situation in the country including urban, intercity and rural areas in terms of transport characteristics, growth in network and available services.
- Review the present Act and identify limitations, inconsistencies and difficulties while implementing against the present realities.
- Review of other ongoing initiatives for the review and amendment of VTMA within DOTM.
- Literature Review of international best practices regarding transport management, road safety, and other issues related to the transport services.
- Review the issues below against the present context:
  - Approaches for the motor vehicle classification and registration procedures.
  - Inconsistency between road's geometric design, pavement standards and vehicles operating on the road.
  - Provision of driving license – prerequisite training, tests and other provisions.
  - Transport Management – determination of route and licensing, speed, weight, timing, fare rates etc.
  - Traffic control and management – signs, signals, pedestrianisation, and road furniture including barricade etc.
  - Insurance of vehicles, drivers including crew members and passengers and third party.
  - Function, duties of all key players in the transport management.
  - Define offenses and provision of punishment.
- Ensure accessibility to the public transport for various segments of society including physically impaired people.
- Organize at least 3 workshops; one in the beginning of the assignment, the next for presenting the draft Act and the third for presenting the final draft Act. The team Leader has to conduct those workshops in the valley in coordination with MOPIT. The client will bear all the cost including tea, breakfast, lunch and other logistics for the minimum of one hundred participants.

- Present thematic papers among relevant stakeholders for further refinement of the proposed revision on the Act.
- Based on the Act, the team also have to amend Vehicle Transport Management Rules – 1997.

Based on above review, draft the Vehicle Transport Management Act and Rules.

## 4. Timing

The total study period shall be of 20 weeks after the issuance of the work order. Inception report will be submitted within 2<sup>nd</sup> week from signing the contract. At the end of 8<sup>th</sup> week, the consultant is expected to accomplish desk study and field survey. By the end of 12<sup>th</sup> week, the consultant is expected to complete office work. The draft Act has to be submitted by the end of 16<sup>th</sup> week, the consultant is expected to seek feedback on the draft Act from all stakeholders and submit final draft Act at the end of 20<sup>th</sup> weeks.

## 5. Deliverables

The consultant shall submit the following documents.

- Two copies of inception report within 2<sup>nd</sup> week.
- Five copies of draft Act by the end of 16<sup>th</sup> week.
- Final draft to be submitted by 20<sup>th</sup> week.

The consultant has to submit both Nepali and English version when submission is due. Electronic copy has to be submitted along with the hard copies.

- Background document – all relevant materials which cannot be presented in the Act need to be presented in the background document. The structure of the background document has to be similar to the Act.

## 6. Team Composition

Following professionals are required to undertake the task.

- **Transport Expert and Team Leader (120 Working days):** Master in Civil, Mechanical, Highway or Transportation related Engineering with at least 15 years of general experience of which 10 years of experience of road transport sector. Additional Master degree in Transportation related Engineering will be an advantage.

- **Legal expert (120 Working days):** LL.M. Degree and at least 10 years of experience in the legal field (Member). Additional Master degree in business and experience in drafting Acts, regulations or guidelines will be an advantage.

**Transport expert (Team Leader)** will have to conduct the following Activities but not limited to:

- Lead and coordinate other team members.
- Review literature of at least five similar countries to Nepal with regard to the vehicle classification, vehicle registration mechanism and other issues to the vehicle fleet management in the country.
- Propose the new motor vehicle classification.
- Recommend the new vehicle registration system in the country.
- Develop the more rational Drivers' licensing system with a provision of separate professional drivers' licensing procedure.
- Establish the best practices to deploy the conductors' and other personnel working for transport services sector.
- The transport management issues should be reviewed as:
  - Designation of public transport Route,
  - Route permit procedure,
  - Road test for public vehicle,
  - Licensing of the transport service operators,
  - Determination of fare for public transport services,
  - Code of conduct for public transport operators including working personnel,
  - Phasing out of old vehicles.
- Develop provision for the traffic management:
  - Set standard for the speed limit of motor vehicle,
  - Standards for public vehicle operations on vehicle size, and other accessories such as first aid kit, fire-fighting devices, repair tools, other safety instruments, and lighting requirements etc.,
  - Review and develop the effective mechanism for axle load and volume control for freight transport,
  - Control of the number of passenger and quantity of goods for passenger transport services,
  - Review of existing road traffic signs,
  - Develop the parking regulations for urban and along highway corridors,
  - Develop road surface provision required for the uninterrupted traffic flow for designated types of roads,
  - Develop provisions for two-wheelers' safety provision such as helmet,

- Develop standards for safety measures for drivers and passengers,
  - Develop other traffic operational provisions for various purposes such as emergency vehicles, and vehicle after accident,
  - Develop pedestrian walking regulation for walking along the road and cross the road,
  - Rescue operation after accident and provision of investigation of road accident.
- Provision of the appropriate insurance system in the transport sector: vehicle insurances, working personnel insurance, passenger insurance, baggage insurance and third party insurance etc.,
  - Provision for the appropriate institutional structure for handling transport management, and develop the responsibility and duties of each units on the organizational structure,
  - Provision of revenue for transport management,
  - Provision of the structure of transport management committee at the district level, and elaborate the responsibilities, duties and power of the committees,
  - Develop the structure of trial examination committee and its duties and responsibilities for licensing,
  - Develop the most appropriate provision for the licensing of motor vehicle factories, driving training centers and vehicle maintenance workshops,
  - Revise the punishment schedule for the violation of traffic/transport regulations,
  - Develop the fundamental procedure for the determination of fine/charges and fees related to the transport sector. Develop simplified procedure for the collection of fees, fines and charges,
  - Review and develop the standard procedure for the compensation in the case of death related to the traffic accident,
  - Elaborate the conflicting issues in the existing MVTMA-1993,
  - Franchising of public transport system.

### ***Legal Expert***

- Assist the Team Leader and coordinate in all respect while developing MVTMA and MVTMR.
- Review present provision of MVTMA-1993 and MVTMR – 1997 for the legal point for avoiding overlapping and gaps,
- Provision of organizational structure for legal aspect in the transport sector,
- Assess relevance of development vehicle tax and propose provision suitable to the present socio- economic condition,
- Conduct meetings/inter actions and seminars with the stakeholders in the transport sector for the review of legal documents in the sector,

- Develop the whole MVTMA and MVTMR as per Nepal's standard formats.

## **7. Mode of Payment**

The consultant will be paid in three installments. First installment (10%) shall be paid at the end of 2<sup>nd</sup> week after submission of Inception Report. Second installment (60%) shall be paid at the end of 16<sup>th</sup> week after submission of draft Act submitted for comments and suggestions. Final installment (remaining 30%) will be paid after submission of the final draft Act (20<sup>th</sup> week) which shall incorporate all necessary comments and suggestions.

## **8. Reporting**

The consultant will report to the Joint Secretary Construction and Transport Division in MoPIT, GON.

## **9. Facilities to be provided by the Client**

The client will assist in the facilitation, and with the co-operation of other Government Ministries Departments and Agencies, as required, for carrying out the assignment and liaison as necessary. The client will give the consultant assistance to gain access to all information required for the proper conduct and completion of the assignment. Client will provide the required office facilities, logistics as required.

## **10. Consultant's Obligation**

Consultant shall be fully responsible to conduct the study and prepare deliverables as specified above including meeting deadlines for deliverables of the study. Consultants are also required to organize and manage the necessary consultation meetings and stakeholder's workshop (one to one) if required, however the cost of the workshop shall be borne by the client. The Consultants shall own a laptop on its own and shall be responsible for his/her own professional indemnity.

September 4, 2015, Kathmandu



Government of Nepal  
Ministry of Physical Infrastructure and Transport  
Secretariat of Nepal Road Safety Council  
Singh Durbar, Kathmandu

Terms of Reference (TOR) for Promulgation of Transport Policy - 2072  
***(Including TOR for individual expert)***

## **1. Background**

The Transport Policy was promulgated in 2058 (2001/02). Population, vehicle numbers, road length and urbanization pattern have changed which necessitates to amend the transport policy rather urgently. The transport demand and vehicle technology has also changed over the period of time. In addition, Nepal's transport policy needs to be informed by the dynamic developments taking place in the neighboring countries.

Transport sector accounts nearly 10% of the National GDP which includes public and private sector investment. Physical infrastructure alone contributes approximately 2.5% of national GDP. More importantly, this contribution of the transport sector in the national GDP has been increasing steadily. Nepal needs a well-considered transport policy for such a prominently contributing sector to the national economy.

With the rapid extension of the rural road networks from almost negligible in 2058 to more than 50,000 km at present. With this the transport sector witnessed a huge opportunity but also challenge. What are the strategies for upgrading earthen roads which require intensive intervention? What will be the source of financing? What sort of governance is required to regulate the operation of transport services in these rural areas need to be answered clearly.

Nepal has witnessed a 5-7% growth rate in urban population over last decade which is unprecedented in South Asia. Almost in proportion to the population growth rate, the vehicle number reached to 1.7 million in 2013/14 from 441753 in 03/04. The composition of the small vehicles reaches to more than 52% in 2013/14 from 6% in 03/04. This situation is causing traffic congestion and prompting road crashes.

Transport safety has become the serious issue. The number of road accidents in 2006/07 was 4,546 which rose by 1.90 times and reached to 8,406 in 2013/014. The accidents on highways and rural roads have become fatal. Largely un-engineered and unmaintained roads, old and unmaintained vehicles, absence of traffic police and other regulatory authority are the major

reason for accidents in rural areas. Over-speed, overstressed drivers, overloaded vehicles and violation of traffic rules are the major reasons for road accidents on highways.

At present, GON intends to review the transport policy and reformulate this as realistic as possible which can be implemented smoothly.

## **2. Objectives**

The main objective of this assignment is to draft the Transport Policy 2072, while incorporating Nepal's transport need and considering transport development around Nepal.

## **3. Scope of Work**

The proposed Transport Policy will need to capture the following elements:

- Review the present policy and identify inconsistencies and difficulties while implementing the present policy.
- Literature Review of international road classification standards and analyse in Nepalese context, transport policy and relevance of raising development of type of vehicles.
- Review GON's other relevant acts such as Vehicle & Transport Management Act, Public Road Act, Local Governance Act, Road Board Act; Property Right Act and other relevant documents and policies in the Right of Way (ROW). Focus on the issue of land acquisition and adopt policy instrument that overcomes this problem intrinsically.
- Identification of the national level administrative and economic centers as nodal points and establish linkages with other nodal points. While doing so, the review also needs to incorporate present and potential gateway between Nepal and her neighboring countries.
- Identification of bottlenecks in implementation and ensure that the policy provisions address these bottlenecks upfront.
- Ensure economic efficiency with proper provision of transport networks and services.
- Integrate transport development in conjunction with the urban and rural development policies and strategies.
- Recommend urban transport strategies to minimize traffic congestion, and travelling time.

- Develop policy guidelines for upgrading rural roads to proper engineering standards.
- Promote policies to introduce intercity motor ways.
- Address the issue of road safety.
- Develop clear strategies in terms of railways, metro, waterways and non-motorised transport.
- The team Leader has to conduct two workshops in the valley in coordination with MOPIT. He has to bear all the cost including tea, breakfast, lunch and other logistics for the minimum of one hundred participants.

#### **4. Team Composition and Responsibilities**

Four consultants will be involved in this assignment. A Spatial Planner or Transport Economist/Transport Engineer will act as Team Leader who will be supported by a Transport Engineer and Transport Safety and Mechanical Engineer. A legal specialist will review the policy for consistency with respect to other Acts, rules and regulations.

**Spatial Planner/Transport Economist/Transportation Engineer Cum Team Leader (120 working days):** With total 15 years of general experience of which 10 years of experience in transport planning at various levels - particularly in Nepal. The Spatial Planner and Team Leader should have a Master degree in Spatial Planning or Transportation Engineering or Transportation Planning or Highway or Civil Engineering with at least 15 years of working experience in the field of Regional or National Level Transportation. Additional Master degree or Ph.D. in the transport related field will be an advantage. The person should be conversant in terms of Nepal's urban development and availability of natural resources such as productive land, water resources, forest, herbs and other national resources. The incumbent should have prepared transportation plans preferably of national level.

The Team Leader will need to:

- Lead the team and coordinate with all team members;
- Review transport policies of Nepal and other at least five similar countries.
- Identify issues and develop policy framework.
- Define coverage of the transport policy, for example land, air and water.
- Identify and define nodal points all across the country and treat them as obligatory points and estimate potential interaction among various nodal points.

- Propose appropriate type of transport infrastructure between various nodal points.
- Work on institutional component of the policy in coordination with other members.
- Contribute to financial aspect of the policy.
- Synthesize contributions from other members and develop coherent transport policy.
- Coordinate with Transport Planner, Transport Safety and Mechanical Engineer and Legal Expert and represent the team.

### **Transport Planner (TP) – 120 days**

The Transport Planner (TP) should have a Master Degree in Transportation Engineering or Transportation Planning or Highway or Civil Engineering and should have at least 10 years of experience in Transportation Planning preferably at National level. Additional experience in Regional, District or Municipality Level transportation planning would be an additional advantage.

The TP will be mandated to carry out the following responsibilities:

- Road Classification and Geometric Standard of each hierarchy of road including Right of Way (ROW) and land acquisition policy.
- Capture technicalities from civil aviation, water transport and other mechanized and non-mechanised transport and indicate their implication to transport policy.
- Strategy to maintain harmony between the transport demand and type and hierarchy of transport infrastructure.
- Support the Team Leader to develop conceptual transport networks and method for prioritizing implementation.
- Develop strategies for minimizing traffic congestion and promoting environment friendly transport infrastructure for urban areas.
- Approaches for minimizing road accidents in urban, intercity and rural areas.
- Contribute in the areas of environmental issues;
- Introduce intermodal and alternate transport system;
- Recon with the transit facilities for Nepal.
- Develop framework for route permit.
- Coordinate with the Team Leader.

### **Transport Safety and Mechanical Engineer (RSME) – (50 working days)**

RSME should have at least Bachelor degree in Mechanical Engineering with at least 5 years of experience in Road Safety and Transport Management. Master degree in Mechanical Engineering and more experience in transport sector will be an additional advantage. RSME will be responsible to:

- Integrate all transport safety elements in the policy for various mode of transport;
- Contribute to mechanical aspect of transportation such as transport vehicle fitness, age, vehicle configuration and characteristics etc.
- Define standard of service of the vehicles.
- Recommend appropriate mix of transport mode and also recommend practical way out making progress towards the appropriate mix.
- Coordinate with the Team Leader and other members of the study team.

### **Legal Specialist (LS) – (30 Working days)**

The incumbent should have a LL.M degree with 10 years of experience in Business Law. An exposure with transport sector will be an advantage.

The LS will have the following responsibilities:

- To check inconsistency of the drafted policy with other policies and acts;
- To ensure language, spirit and content of the Transportation Policy to comply with GON's formal format.
- Coordinate with the Team Leader and other members of the study team
- All issues relating to legal aspects.

## **5. Timing**

The total study period shall be of 6 months after the issuance of the work order. The consultant has to submit inception report within 2 weeks. Broadly, at the end of 8 weeks, the consultant is expected to accomplish desk study and field survey. By the end of 12 weeks, the consultant is expected to complete office work and submit the draft policy at the end of 14 weeks, the consultant is expected to seek feed backs on the draft policy from all stakeholders and submit final draft policy at the end of 20 weeks. The entire tasks have to be concluded within six months after signing the agreement.

The consultant will organize a workshop of all stakeholders after submission of the inception report. The methodology, procedure and analysis have to be adjusted as suggested by the participants. The second workshop will be organized after preparation of the draft report. A dissemination seminar will be organized after finalizing the policy.

## **6. Deliverables**

The consultant shall submit the following documents.

- Two copies of approach paper within 2<sup>nd</sup> week.
- Three copies of draft policy by the end of 12th week.
- Five copies of final draft policy incorporating all comments received from the clients and stakeholders by the end of 20<sup>th</sup> week.
- Background document – all relevant materials which cannot be presented in the policy need to be presented in the background document. The structure of the background document has to be similar to the policy.
- Consultants have to produce reports in English language first after agreeing by all stakeholders, they need to translate to Nepali. They need to submit both versions as draft final report.

## **7. Mode of Payment**

The consultant will be paid in three installments. First installment (10%) shall be paid at the end of 2nd weeks after submission of Inception Report. Second installment (60%) shall be paid at the end of 12 weeks after submission of draft policy submitted for comments and suggestions. Final installment (remaining 30%) will be paid after submission of the final draft policy (20 weeks) which shall incorporate all necessary comments and suggestions.

## **8. Reporting**

The consultant will report to the Joint Secretary - Construction and Transport Division in MoPIT, GON.

## **9. Facilities to be provided by the Client**

The client will assist in the facilitation, and with the co-operation of other Government Ministries, Departments and Agencies, as required, for carrying out the assignment and liaison as necessary. The client will give the consultant assistance to gain access to all information required for the proper conduct and completion of the assignment. Client will provide the required office facilities, logistics as required.

## **10. Consultants Obligation**

Consultant shall be fully responsible to conduct the study and prepare deliverables as specified above including meeting deadlines for deliverables of the study. Consultants are also required to organize and manage the necessary consultation meetings and stakeholder's workshop (one to one) if required, however the cost of the workshops shall be borne by the client. The consultants shall own a laptop on its own and shall be responsible for his/her own professional indemnity.

September 4, 2015, Kathmandu

Government of Nepal  
Ministry of Physical Infrastructure and Transport  
Secretariat of Nepal Road Safety Council  
Singh Durbar, Kathmandu

Terms of Reference (ToR) for **Development of Nepal Road Crash Database System  
(NRCDS)**  
*(Including TOR for individual expert)*

## 1. Background

The UN Global Action mandates member countries to develop their national plans for decade (2011 – 2020) which includes five pillars: road safety management, safer roads and mobility, safer vehicles, safer road users and post - crash response. Following this Global initiative, GON promulgated Nepal Road Safety Action Plan (NRSAP, 2013 – 2020) in Feb. 2013. NRSAP included reviving National Road Safety Council with necessary Acts. The preparation of this Road Safety Act (RSA) is one of GON initiatives towards implementation of the action plan.

There is a total road network of 62,579 km including strategic and rural roads. However, more than half of rural road network is not operational and remaining half is also not safe for driving. The vehicle population has been increasing alarmingly reaching to 1.75 million in 2013/14. Two wheelers occupy nearly 78% share of the total vehicle population. In 2012/13, the number of accidents reached to 13, 582 in 2012/13 and 1816 people lost their lives with an annual growth rate of about 9.6% over the period of a decade.

At present, there is a Motor Vehicle and Transportation Management Act, 1993 (MVTMA) and Motor Vehicle Transport Management Regulations (MVTMR), 1997. Both VTMA and VTMR are under revision as both of them are outdated. In order to assign increased level of importance, GON decided to promulgate the RSA separately.

Realizing that road safety issues were not addressed adequately in the construction and maintenance of the roads, there was a gap in the government institutions and private sector in the capacity to handle road safety initiatives, a follow up project, named as Road Safety Support Project (RSSP), was created to support the Government of Nepal on its ongoing initiatives to improve road safety. RSSP is contributing mainly in the following three areas:



- Institutional Establishment (Support to National Road Safety Council (NRSC) and Road Traffic Unit (RTU) of DoR)
- Legislation and Capacity Strengthening (Support in formulating Road Safety Act, amending Vehicle and Transport Management Act (VTMA), Vehicle and Transport Management Regulations (VTMR) and Transport Policy to include road safety aspects, providing overseas and in-country training, addressing professional licensing requirements for undertaking road safety and incorporating road safety in regular undergraduate and postgraduate engineering programs of the universities in Nepal, and developing road safety database policy, software and database management)
- Piloting the implementation of planning, design and delivery of road safety works for demonstration purpose

In addition, RSSP is also administering fund for the installation of 70,000 metres of road side barriers and related road safety treatment works on some of the selected black spots and along the high priority sections of these roads identified by road safety audits completed under RSDP. Information on where, when, who, what, why and how road crashes have occurred are important for planners, engineers and policy makers to make and prioritize all investment decisions on road safety improvement works in future as safety has been given high priority by the Government. Realizing this importance, Government of Nepal has decided to use part of this grant proceed for the development of road crash database system and related policy formulation and documentation (crash database use policy, guideline and manual).

#### Existing and **Ongoing Initiatives on Crash Data Collection and Management**

There have been a few initiatives in establishment of crash data management system in Nepal in the past. Some of these are:

- Under UK funded Road Maintenance Project in early to mid-nineties, most of the institutional reform was made under this project with establishment of several units such as Highway Management Information System (HMIS) which managed most of the information required by agencies for planning, design, monitoring and evaluation of road projects in Nepal. Traffic Engineering and Safety Unit (TESU, now renamed to RTU) was established under the Planning and Design Branch of DOR which, under the guidance of overseas specialist developed and implemented a lot of activities related to road safety including the development/ update of crash data collection and management form. Unfortunately, with the closure of Road Maintenance Project and cessation of

Overseas Development Assistance in technical capacity strengthening, these exciting initiatives did not get sustained due to several institutional problems.

- ADB funded Road Connectivity Sector I Project in its report recommended that the system of entering data in the crash record forms needs to be substantially improved and upgraded. Traffic Police should accord this responsibility with high priority. DOR, as the concerned agency for planning and management of road network in Nepal, is ultimately responsible for analyzing road crashes and implementing countermeasures at black spots and hazardous locations. This is the general practice in place globally for effective crash mitigation and reduction. Therefore, DOR should compile all crash data maintained at Traffic Police for comprehensive crash analysis while the latter authority should confine itself to enforcement and collection of crash data at the sites.
- Another World Bank funded Nepal India Regional Trade and Transit Project (NIRTTP) commenced a study which envisages, among others, the development of web based road crash data collection and management system. It is understood that the study is nearing completion. The Study includes the following activities:
  - i. Review of existing practices on crash reporting and recording;
  - ii. On the basis of practical experiences and lessons learned from the past, develop a concept for road crash data management system (web based) including an efficient and effective mechanism to collect the road crash data including the roles and responsibilities for each stakeholders,
  - iii. In case if a new system is to be developed to suite the local requirements, prepare a draft Terms of Reference for developing the necessary software and implement the computerized road crash database including the trainings for the related stakeholders,
  - iv. Develop standard procedures for recording road crashes including investigating the contributing factors of crashes;
  - v. Develop standard procedure for calculating the road crash costs;
  - vi. Review and recommend on provisions of compensation for victims of crashes."

## 2. Objectives

The main objective of the study is to develop policy document for road crash database and crash database system based on Nepalese conditions and incorporating best practices around the globe.

## 3. Scope of Work

The **Nepal Road Crash Database System (NRCDS)** will need to incorporate following components:

**Scope of Consulting Service:** The scope of consulting service is to develop and deliver a sustainable Nepal Road Crash Database System (NRCDS) for use by road safety practitioners in order to make them able to identify black spots and suggest corrective measures on the basis of trends, types and factors contributing to road these road crashes. Use of the proposed NRCDS will enable road safety practitioners to identify cluster of road crashes and suggest corrective measures. Attempts in the past to create such database using complex software platforms were not successful. This Project aims to deliver a simple and workable database based on the best international practice but at the same time ensures the system that would be sustainable, efficient and workable in Nepal's context.

Following tasks are identified for the proposed consulting service to ensure the above objectives are met.

1. **Review and summarise key findings and recommendations of previous studies:** The consultant shall identify causes and suggest measures to address sustainability of the database for discussion with the NRSC or DOR (nominated to oversee the development of crash database system under the proposed service).
2. **Develop Policy Document for Road Crash Database:** The requirement of systematic collection of road crash data should be legislated in the proposed Road Safety Act following which a detailed policy document needs to be developed. The policy document would specify what types of crash data are to be collected, when it is to be collected, how it should be stored and maintained, who should be allowed to access, what data should be made public and what data should be confidential (privacy policy), who should be responsible to collect data and so on. In case of delay in developing Road Safety Act, a policy document can be developed first as a part of this task and the same will have to be supported by the Act. The policy document should also spell out the unified definition of a crash and method of collection. Based on this policy document, a set of data specification, method of collecting data, method of storing data (database), management of database, and eligibility to use data base, obligation of agency to maintain/ update data, source of uninterrupted funding for collecting data set and ongoing management of

database, limitations of data set will be developed. Road Crash Database Policy, which shall be developed to implement the relevant provision (section) of Road Safety Act, represents a higher level document which informs the development of Guidelines for the Development of Crash Database. Guidelines for the development of crash database inform the development of Crash Database Manual, a tool kit to developers and managers on how to validate, enter, manage crash data and Crash Database System. Crash Database Manual can also be used as training materials for ongoing training to staff for entering crash data into the database system and for ongoing maintenance of the database. A User Manual should also be developed to assist end users of the database to use it properly.

3. **Develop Crash Data Coding System:** Identifying cluster of similar types or similar groups of crashes is important for the treatment of crash locations. For example, cluster of rear end crashes at the approach of an intersection could provide clues to safety engineers of the deficiency on roads and design appropriate safety treatments. Depending on the primary and/or secondary contributing factors (high approach speed, low amber time or poor/skid pavement surface etc.), it is possible to suggest appropriate targeted road safety countermeasures to reduce these crashes in future. Similarly, existence of many similar right-through crashes at an intersection may require replacing permissive phase by protective phase of traffic signal. Too many head on crashes at a location may be treated by median strip and /or by providing passing (overtaking) lanes or by banning overtaking. Cluster of road departure crashes may call for the installation of road side barriers (guard rails). These are examples only. There are over 75 different types of crashes used in other developed countries in their crash database. Depending on the nature of crash, each crash should be coded and included in crash database for its meaningful use by engineers. A Crash Database with limited information such as number of crashes by severity type, contributing factors, location etc will be of limited use. The consultant shall develop Nepal crash coding system based on best international practice and upon agreement with key stakeholders (See below) the proposed coding system will be used in developing Nepal Road Crash Database System.
4. **Undertake consultation with stakeholders:** One to one consultation with limited/ selected road safety specialists and Government officials shall be carried out if required. If the comments or feedbacks are deemed to be not relevant or cannot be incorporated in the framework for technical or other reasons, such reasons will be kept in record with reasons. The outcome of the consultation (workshop or one to one) is an agreement on coding system, format and content of the policy documents and type of database system to be developed.
5. **Develop Nepal Road Crash Database System (NRCDS):**
6. **Test and validate NRCDS:** Testing and validating the created database is a common step in any system development process. Testing and validating shall be done by entering crash data for 3 to 6 months period depending on the number of crash records available for this period. Testing and validation shall be demonstrated to the relevant authorities including NRSC, DoR and Traffic Police.

7. **Create template of crash code:** The consultant shall develop a set of templates for crashes that would be used to create /develop crash or collision diagram. These templates shall be included in the Manual. Use of the same template for a particular type of crash will help ensure consistency.
8. **Identify gaps in the collected data and suggest improvements:** It is reasonable to expect some data gaps in the collected crash data using existing form being used by Traffic Police or the new form developed by NIRTTP. These gaps will be identified and crash data collection form developed in NIRTTP will be improved where needed. Also there would be room to add more data item at no additional cost. For instance, Geo-codes of crash locations can be supplemented with Chainage or TDistance (Total Distance) data. This will be investigated and recommendations made for future.
9. **Train database operators for entering crash data on ongoing basis and in managing the created database.** On the job training shall be suggested. The Government (NRSC or DoR) will provide counterpart staff. In case NRSC or DoR will not provide counterpart staff, a brief training will be provided to limited staff nominated by the Government.

#### 4. Methodology

The consultants will prepare an inception report mentioning methodology, process and approach which will be presented to the Road Safety Council meeting.

A variety of database design may be applied in the development of Nepal Road Crash Database System. However, it is plausible to start with simple and easy to understand system and gradually build it into complex and more sophisticated system later if needed. "Keep it simple, stupid" (KISS) represents a sustainable and "value for money" approach in consideration with the difficulties associated with adopting complex system attempted in the past. It is proposed that an Excel spreadsheet based database system may be proposed by the consultant, which will be able to handle the management of crash data at this stage. Excel is a powerful tool to manage and manipulate data and most engineers are comfortable in its use. It is believed latest version of MS Excel can handle storage of crash data of over five years easily. Excel data can be transported to GIS to create GIS layer when required to display data spatially and temporally. However, consultants are free to recommend and, upon agreement, use other platforms of database system such as Access or GIS. Some forms of relational database software may have to be used when crash data grows. Excel based database system should be able to transition into Access based system and to GIS based system in future.

The consultant shall develop at least two examples of collision diagrams drawn for hypothetical sites (one for intersection and the other for section of road) in accordance with acceptable international practice), using the template developed in this task and shall demonstrate how these diagrams can be used to identify counter measures to reduce these crashes. Sample collision diagrams shall contain street names, locality name and a north point. It shall also

include road features like intersection priorities, traffic lanes, islands, markings and significant roadside features. However, if the inclusion of all these features would make the collision diagram too cluttered, these features can be provided as a separate site sketch plan, with the collision diagram showing only the basic site layout. Advanced and more sophisticated crash database systems can automatically generate a collision diagram. It would require complex algorithm. It is envisaged to incorporate these complex features later when sustainability issue is resolved and more fund becomes available. At this stage, a simple MS EXCEL or MS ACCESS platform may be used by the consultant.

## 5. Team Composition

It is expected that the consultant team will comprise of 2 international experts and one national expert. Each member will be jointly responsible for the delivery of the whole works and individually responsible for her/his assignment. Road Safety Specialist will act as Team Leader who will be supported by one Crash Database Specialist International and one Database Specialist National. The estimated key staff input is given in the table below.

S/N	Position/expertise	Nos.	days	Total Person-days
1	Road Safety Specialist / Team Leader International	1	30	30
2	Crash Database Specialist International	1	120	120
3	Database Specialist National	1	120	120
Total		3	270	270

## 7 Qualification and Experience Requirements

Qualifications and experience requirements of key specialists shall be as follows:

### Road Safety Specialist and Team Leader (International)

a) Qualification	<ul style="list-style-type: none"> <li>Minimum of Bachelor's Degree in related Engineering field</li> <li>Preference will be given for a candidate with Master degree or a Ph D in transport,</li> <li>Extensive trainings in the field of road safety</li> </ul>
b) Total Professional Experience	<ul style="list-style-type: none"> <li>At least 15 years of professional experiences in the field of road and transport management</li> </ul>
c) Experiences in proposed field of expertise	<ul style="list-style-type: none"> <li>Work experience as a Road Safety Specialist in a minimum of five projects involving the use and interpretation of crash data for road safety treatments</li> <li>At least 10 years of experience working in road safety projects</li> </ul>

**Crash Database Specialist (International)**

a) Qualification	<ul style="list-style-type: none"> <li>• Minimum Bachelor's Degree with Major in Statistics/ Economics</li> <li>• Preference for Masters' Degree or a Ph D in road safety.</li> <li>• Training in GIS</li> <li>• Trainings on crash database management and/or other database development</li> <li>• Advance skills in the use of EXCEL or ACCESS</li> <li>• Workplace Assessment and Training</li> </ul>
b) Total Professional Experience	<ul style="list-style-type: none"> <li>• At least 10 years of professional experiences in Team Leadership and Management</li> <li>• Project management experience</li> <li>• Road Safety related project experience</li> <li>• Experience in writing manuals and delivering training</li> <li>• Experience in data use/analysis in management to solve problems</li> <li>• Experience in Policy/Procedure writing and input</li> </ul>
c) Experiences in proposed field of expertise	<ul style="list-style-type: none"> <li>• At least 4 years experience in analysis and use of crash data and road safety related projects and database development works</li> <li>• Experience in road safety funding facilitation</li> <li>• Experience in writing road crash data manuals</li> <li>• Experience in road crash data diagram presentations</li> <li>• Experience in training staff to enter road crash data</li> <li>• Experience in supervision of road crash data entry and use</li> </ul>

**Database Specialist (National)**

a) Qualification	<ul style="list-style-type: none"> <li>• Minimum Bachelor's degree in the field of regional planning/ engineering</li> <li>• Preference for Masters' Degree or trainings on crash database management and/or other database development</li> <li>• Advanced training in EXCEL or ACCESS</li> </ul>
b) Total Professional Experience	<ul style="list-style-type: none"> <li>• At least 10 years of professional experiences in projects related to road and transport planning or design of road projects</li> <li>• Experience in conduction training programs</li> </ul>
c) Experience in related field	<ul style="list-style-type: none"> <li>• At least 5 years experience in the field of database development or data management or information management using EXCEL or ACCESS</li> </ul>

## 6. Tasks of Each Team Member

Two international individual consultants will be involved. Each will have the following responsibilities:

### ***Road Safety Specialist Team Leader International:***

- Lead the team and coordinate with all team members;
- Provide overall direction to the team in all road safety related matters;
- Develop policy document for Nepal Road Crash Database System (NRCDS) with the support from the team members;
- Review and summarize key findings and recommendations of previous studies;
- Will be responsible to deliver the Project and to liaise with the client and team members to ensure the project outputs are delivered on time within budget with expected quality;
- To provide overall guidance to the Team Leader ensuring the project objectives are achieved;
- To set up the Project and define the scope of the Project;
- Guide the team in all aspects of the requirements of crash database for use in road safety engineering;
- Liaise with the client at the beginning and end of the development of Nepal crash database system (NRCDS);
- Assist the client in organizing workshops and seminars as appropriate towards the completion of the creation of Nepal Road Crash Database System (NRCDS);
- Incorporate, streamline, synthesize contribution from all team members and deliver final report on the works completed.

### ***Crash Database Specialist International***

The Crash Database Specialist/ Team Leader International will have the following responsibilities:

- Assist the Team Leader to develop policy document for Nepal Road Crash Database System (NRCDS);
- Develop Crash Data Coding System;
- Undertake one to one consultation with key stakeholders;
- Develop framework for Nepal Road Crash Database System (NRCDS);



- Design and develop crash database in suitable platform using the framework described as above;
- Test and validate NRCDS;
- Create template of crash codes;
- Identify gaps in the collected data and suggest improvements in the crash data collection form to suit to the developed database system; and
- Train database operators for entering crash data on ongoing basis and in managing the created database.

#### ***Crash Database Specialist National***

- Get crash data from Traffic Police;
- Interpret crash data obtained from Traffic Police under the guidance of Database Specialist International;
- Enter crash data in the Database developed by the Team Leader under his guidance for the purpose of testing and validating crash data;
- Assist the Team Leader in all matters related to the completion of the Project on time within budget
- Assist the Team Leader and Crash Data Base Specialist International in liaising with the client and stakeholders
- Provide all necessary local support for the successful completion of the project

## **7. Mode of Payment**

The consultant will be paid in three installments. First installment (10% of total remuneration) shall be paid at the end of 2<sup>nd</sup> weeks after submission of Inception Report. Second installment (60% of total remuneration) shall be paid after submission of Draft Report/ Presentation submitted for comments and suggestions. Final installment (remaining 30% of total remuneration) will be paid after submission of Final Report (24 weeks) which shall incorporate all necessary comments and suggestions. Two economy class air tickets for each international expert shall be paid by the client. The local transportation cost as well as per diem allowances shall be paid as agreed between the consultant and the client.

## 8. Timing and Reporting

The consultant will report to the Joint Secretary, member of the NRSC.

### Deliverables and Reporting Schedule

As defined in Section 4 (Scope of Services) the Consultant shall be required to prepare and submit the following reports:

S/N	Deliverables	Time
1	Two copies of Inception Report outlining the outcomes of inception meeting, proposed WBS (Work Breakdown Structure) elements, defining methodologies, work schedule (maximum of 10 page long)	At the end of second week of commencement date
2	Five copies Draft Report containing database framework, database policy guideline and database manual (Max 25 pages long; policy guideline and manual to be included as Appendix to Main Report)	At the end of 16th week of commencement date
3	Five copies Final Report incorporating comments from NRSC or its nominated representative	At the end of contract period (24 <sup>th</sup> week)

. Note: Along with the printed copies a soft copy of each report shall be submitted along with the reports as mentioned above.

## 10. Facilities to be provided by the Client

The client will assist in the facilitation, and with the co-operation of other Government Ministries, Departments and Agencies, as required, for carrying out the assignment and liaison as necessary. The client will give the consultant assistance to gain access to all information required for the proper conduct and completion of the assignment. Client will provide the required office facilities, logistics as required.

NRSC shall provide all available and relevant study reports, legal documents, relevant data as well as available information for the study. It will help the consultant to set up meetings with stakeholders particularly with Traffic Police. NRSC shall be responsible to obtain crash data from Traffic Police and supply to the consultant to test and validate the database during its development phase. NRSC or its nominated representative shall provide counterpart staff / database operator(s) during the development phase for on-the-job training who will be

responsible for entering all crash data at least for the duration of contract period (6 months). The same trained operator shall be responsible to train other computer operators for data entry. NRSC will ensure that trained operators and dedicated fund will be available for sustained operation and maintenance of crash database. An authorized representative from NRSC shall monitor and supervise the consulting services and also be responsible for overall coordination, supply of crash data collected by Traffic Police and for providing assistance to set up meeting with stakeholders.

NRSC would organize stakeholders' workshop and the consultant shall present its database development framework and collect stakeholders' feedback to incorporate in the framework proposed by it if needed.

## **11. Consultants Obligation**

Consultant shall be fully responsible to conduct the study and prepare deliverables as specified above including meeting deadlines for deliverables of the study. Consultants are also required to organize and manage the necessary consultation meetings and stakeholder's workshop (one to one) if required, however the cost of the workshop shall be borne by the client. The consultants shall own a laptop on its own and shall be responsible for his/her own professional indemnity.

September 3, 2015, Kathmandu