

Government of Nepal
Ministry of Physical Planning and Works
Department of Roads

**Road Sector Development Project
Institutional Strengthening Component**

Notice No:RSDP/HMIS:01/2011-12

Expression of Interest

(Date of First Publication: August 23, 2011)

The Government of Nepal, Ministry of Physical Planning and Works, Department of Roads has received a grant from the International Development Association (IDA) and intends to apply part of the proceeds of this grant to payments under the contract for Road Sector Development Project, Institutional Strengthening Component.

The service includes defining the frame work of an appropriate Highway Management Information System in Department of Roads for the purpose of sustainable planning, development, maintenance and management of road networks. The duration of the service is 2 months.

The Government of Nepal, Ministry of Physical Planning and Works, Department of Roads now invites eligible individual international consultant (Road Management System Expert) to indicate his/her interest in providing these services. Interested consultant must provide information indicating that he/she is qualified to perform the services which includes, interalia, details of similar assignments successfully completed. The individual consultant must at least possess a Bachelor's degree in Civil Engineering/ Transportation Engineering/ Transport Economics/ Transportation Planning or equivalent with minimum 15 years of experience in planning, design and construction of roads with over 5 years of experience in roads asset management including design of appropriate information system. The assignment is of 2 months' duration and expected to commence from February 2012.

A consultant will be selected in accordance with the procedures set out in the World Bank's Guidelines: Selection and Employment of Consultants by World Bank Borrowers, May 2004; revised October 1, 2006 & May 1, 2010).

Interested consultants may obtain Terms of Reference for the mentioned job from Notice Section of www.dor.gov.np

Expressions of interest must be delivered to the address below by 5.00 PM, September 21, 2011

Government of Nepal
Ministry of Physical Planning and Works
Department of Roads
Asset Management, Contract Management & Quality Control Project
Highway Management Information System Unit
The Unit Chief
Babarmahal, Kathmandu, Nepal
Phone: +977-1-4262693, Ext 2254
Facsimile: +977-1-4257409
Email: fcb@dor.gov.np

Terms of Reference and Scope of Works

1. INTRODUCTION

The Department of Roads (DOR), under the Ministry of Physical Planning and Works (MOPPW), is implementing Road Sector Development Project (RSDP) under the grant assistance from the World Bank (IDA Grant H339-NEP).

The project has following components:

- Road Development,
- Institutional Strengthening and Policy Reform.

This Terms of Reference (TOR) is part of the second component. This component consists of enhancing the capability of different units of DOR within the framework of approved three-year Business Plan.

This particular component, under Institutional Strengthening and Policy Reform programme, is aimed at improving the capability of HMIS Unit and establishing and implementing a sustainable Road Asset Management System within DOR. This is one of the sub-components being implemented under Institutional Strengthening and Policy Reform Programme within RSDP.

To accomplish this programme, DOR intends to engage one international consultant: Road Management System Expert / Highway Management Information System Expert.

1.1 Background of Client's Organization:

Extent of Road Network:

Road network in Nepal is divided in the following categories.

- National Highways
- Feeder Roads
- Urban Roads
- District Roads
- Village Roads

Strategic Road Network (SRN) of Nepal comprises of National highways and Feeder Roads. DOR is responsible for construction development, improvement and maintenance of SRN. The total road network under DOR consists of 10835 Km. Out of this, 4952 km is blacktopped, 2065 Km Gravelled and 3818 km earthen.

Organization:

DOR is headed by Director General and assisted by four Deputy Director Generals, two Project managers, Administration and Account Section Chiefs in central office. Different units and sections are functioning under DDGs in the department. Highway Management System (HMIS) Unit is one of the units and it is working under Project-in-Charge, Asset, Contract and Quality Control Project (previously under DDG, Planning & Design Branch). Five Regional Directorates are functioning at the regional level and 25 Division Road Offices at the district level. Apart from this, various independent projects are established to execute other road construction, improvement and rehabilitation works.

Details of DOR and its activities are available at: <http://www.dor.gov.np/>

1.2. Highway Management System (HMIS) Unit of DOR

HMIS Unit was established under Planning Branch of DOR in 1994 as a computer based road data management system. At present, the Unit office is located at the DOR central office headed by a Unit Chief and supported by an Engineer and two Data Entry Operators. The responsibility of HMIS Unit consists of store and process road inventory, road condition, traffic and other related data. The objective of HMIS Unit is "improve and maintain the central reliable Strategic Road Network database and support DOR in effective planning of network development and road maintenance works". The following presents the ongoing initiatives of HIMS and their status:

| Activities | Present Status |
|---|--|
| 1 Review of Strategic Road Network | Continuing process |
| 2 Updating of Road referencing System | About 4000 km completed in 1993-1994 |
| 3 Road Roughness Survey (IRI) | Started since 1992-1993 and done annually for about 4000 Km (with Merlyn Cycle, TRL method). Data maintained in isolated spread sheets. |
| 3 Surface Distress Index Survey on SRN. | Started since 1992-1993 and done annually for about 4500 Km Data maintained in isolated spread sheets. Survey work is carried out manually on visual basis. Previously done at the basis of 10% sampling and at 20% sampling basis since last 4 years. |
| 4 Traffic Count Survey | Ongoing once in a year manually since 1992-1993 at 72 hours count basis. |

| Activities | | Present Status |
|-------------------|--|--|
| 5 | Axle Load Survey | Generally done on project basis |
| 6 | Structural Capacity of Pavement, pavement type, thick ness, history (CBR, DCP, BB) | Done on project basis |
| 7 | VOC model (simple spread sheet) | In 1992, with initiation of MRCU, VOC relationship practiced in India was customized for condition of Nepal (with assistance of transport economist from TRL) |
| 8 | Use of HDM III model in DOR (a working calibration of the model is carried out) | The application is limited to individual projects. |
| 9 | Improvement, updating of GIS map, road data and Statistics of Strategic Road Network | Continuing work |

Publication

| | | |
|----|--|--|
| 10 | HMIS News Publication and update information in DOR website | Continuing work |
| 11 | HMIS Capability Development in GIS mapping and Accessibility modelling & HDM application (HDM 4) | Done during Priority Investment Plan 2007 study. Ten Years maintenance plan developed with HDM 4. Accessibility modelling work initiated only. |
| 12 | Preparation and updating of computer based road asset register | Software developed, pilot inventory work completed, needs further updating inventories of whole road network. |
| 13 | Preparation of Annual Road Maintenance Plan based on road condition data, pavement history and traffic data. | Done annually by Maintenance Branch, DOR |

Envisaged future development of Highway Management Information system:

Short-Term & Medium Term:

- Development of efficient computer based system for storing, processing and report presentation of road data including inventories, condition and traffic data.
- Identification of appropriate and effective data collection parameters and procedures. Setting out programs for data collection to serve long term goals of HMIS.
- Procurement /Installation of appropriate equipments/technology for data capture
- Extensive use of GIS application for network planning and presentation works.
- Provision of adequate logistic support and motivated /competent manpower in functioning of HMIS Unit.

Long-Term:

- Institutionalize use of expenditure planning tools / economic model applications for carrying out DOR activities like periodic maintenance, rehabilitation, upgrading and widening of roads.
- Use of modern technology in the process of data capturing and processing.

2.0 OBJECTIVES

Objective of this consultancy service is to define the framework of an appropriate Highway Management Information System for DOR which will help in the sustainable planning, development, maintenance and management of SRN.

3.0 SCOPE OF SERVICES

In order to accomplish the short, medium and long-term goals of HMIS Unit, the expert among others shall perform (but not necessarily limited to) the following tasks,

- (i) Review of the existing systems: A detailed review of the existing systems available within HIMS Unit and other offices (including field offices) and projects within DOR and an assessment of their efficacy in the sustainable planning, development, maintenance and management of achievement of SRN. The following aspects (but not necessarily limited to) needs to be considered ;

Existing Road Management System: Efficacy of the existing system that exists at headquarters, regional, division and project levels.

Network Data: Availability of the network data (including condition data), their relevancy and completeness.

Computer Hardware and software: systems adequacy, hardware, relevancy of the software, use and effectiveness of the software etc.

Data collection: types, methods, frequency, quality assurance procedures

Tools and Equipments: Availability of tools and equipment, their use, effectiveness and their relevancy.

Organizational Development: Organizational structure at HIMS unit, regions and divisions in relation to the sustainable Road Asset Management System within DOR.

Private Sector Involvement: Extent of involvement of the private sector in the implementation of the system, its roles and responsibilities and effectiveness.

Training Component: Level of expertise of the personnel linked to the planning and implementation of a system for sustainable planning, development, maintenance and management of SRN.

- (ii) Definition of a Sustainable Framework: Define a framework of most suitable systems for sustainable planning, development, maintenance and management of SRN. The systems should be defined taking into consideration the organizational, technical capabilities, as well as financial resources availability, of DOR. It should contain detailed definition of systems that are achievable in the short, medium and long terms. While developing the systems the issues mentioned in (i) should be elaborated in detail;
- (iii) Development of an Action Plan: Develop an action plan that will contain activities that needs to be undertaken in the short, medium and long-term to implement the framework proposed in (ii). The action plan will comprise the following: activities, responsibility, timeframe, indicators. Estimates of resource requirements to implement the activities should also be provided.

4.0 PROJECT TIME TABLE

The Project is expected to be implemented by [February 2012](#). The total man month for the engagement of RMS Expert will be 2.0 months. If needed part of the total man month may be used within home station.

5.0 QUALIFICATION/EXPERIENCE

The person should be academically qualified and with international experience in Road Asset Management. More specifically, the qualifications should be as follows:

- Minimum bachelor's degree Civil Engineering, Transportation Engineering, Transport Economics, Transportation Planning or equivalent ;
- More than 15 years of experience in planning, design and construction of roads with over 5 years of experience in roads asset management;
- Experience of working as a RMS Expert in Asia with all aspect of Network Referencing, Data processing and analysis, Data Quality Assurance, etc.

6.0 CONSULTANTS FACILITIES

The consultant shall be responsible for his accommodation, transport facilities, personal communication, laptops etc.

7.0 DATA AND FACILITIES TO BE PROVIDED BY THE CLIENT

The client will ensure that the Consultant has access to all relevant information and data in the client agency that is deemed necessary to the performance of the Services. The consultant will be assisted by DOR engineers during his service period.

The client will make available suitable office space for the Consultant, during postings or on-site visits. The office will be equipped with basic office furniture.

8.0 DELIVERABLES AND TIMETABLE

The Consultant will submit the following reports as per the time-table given below: The reports are to be provided in English and should cover all aspects mentioned in the scope of works.

| | |
|--------------------|---|
| Inception Report | Within first week and discuss/finalize with DOR officials |
| Draft Final Report | Within 1.5 months after the start of the assignment. |
| Final Report | Within 2.0 months after the start of the assignment. |

The Consultant should make a presentation on the draft final report. The presentation will be attended by DOR officials and other stakeholders as found appropriate by DOR