



Terms of Reference (TOR)

Engaging the Service of an IT Consultant for the Enhancement of the DILG Roads and Bridges Information System (RBIS)

- A. Project Title: Paving the Roads to SDGs through Good Local Governance
- B. Project Description and Objectives

Efficient, resilient, and well-planned road networks ensure that no one is left behind in the drive for inclusive growth. This is why roads are considered as an important foundation for the Sustainable Development Goals (SDGs), and a prerequisite for bringing communities together.

At present, only 24.6% of all provincial roads in the Philippines are of acceptable quality. Of the 12,726km of provincial core roads, 57.2% are unpaved and in need of upgrading, while 20.2% are in poor condition and in need of rehabilitation. The situation is similarly dire for the 19,098 km of non-core roads, with 67% needing upgrading and 7% in need of rehabilitation.

To address this situation, the Department for the Interior and Local Government (DILG) has launched the **Conditional Matching Grant to Provinces (CMGP)** initiative to improve the quality of the local road network across the country, by providing both financial investment for capital outlay, as well as strengthening the governance processes so that provincial governments are themselves able to effectively plan, design, implement and maintain their road networks. The Program addresses the underinvestment in local roads, and improvement of national-local roads connectivity to increase economic activity and improve public access to facilities and services in the provinces.

The Office of Project Development Services (OPDS) is currently in the phase of establishing a comprehensive inventory database of local roads in the country. A Road Board-funded project, the Establishment of Provincial and City Locational Referencing System (LRS), is providing the required data that are being uploaded in the Roads and Bridges Information System (RBIS), a web-based system developed in 2010 under the auspices of the Australian Government Department of Foreign Affairs and Trade through the Provincial Road Management Facility (PRMF). The RBIS is designed to be the central repository of comprehensive, appropriately accurate, up-to-date road and bridges information. It is currently deployed in a local cloud server being managed by OPDS.

The system's main objective is to provide DILG, specifically the OPDS Local roads Program, with timely information to support policy formulation, budget allocation, monitoring, and reporting initiatives and functions, including project development. It also aims to support the Local Government Units (LGUs) in road planning and priority setting for road improvement and maintenance, not to mention other entities

whose business interest will require access to local road data and information.

The present RBIS (Version 1) is already an improved edition of the original. LGUs are currently being oriented on its features, operation and utilization. But just like any web-based information system, it must continually be enhanced and updated to adapt to the rapid development in information technology, improving government policies in the sector, and increasing need for various road data /information formats. Enhancing the capacity of the system to provide information in a dynamic and enlightening manner is crucial to its sustainability and usability.

A number of tasks aimed at optimizing and improving efficiency of the systems have been identified. With increased reliance on cloud computing and the fast approaching migration to public cloud for most government systems and productivity tools, it is important to ensure the RBIS infrastructure is well prepared and aligned with ICT government and corporate standards. Efficiency in ICT infrastructure will additionally improve user experience and subsequently lead to higher productivity.

With the Conditional Matching Grant Project (CMGP) requirement (*validated and updated road data uploaded in the RBIS*) for LGUs to access the Fund, it has become necessary to engage an experienced and highly skilled IT Consultant on detailed assignment to commence on the critical activities that must be completed within the year.

The successful establishment of the RBIS as an online information system is expected to create an impact in the programming and service delivery of the DILG, and the performance of LGUs in road management and maintenance. Similarly, it is expected to support the Government's thrust in ensuring transparency and accountability in government transactions.

Objective

To Improve the RBIS's interactive features, and enhance functionality, operability, usability and performance:

C. Scope of Work

The Roads2SDGs Project Manager and the Roads Manager shall have direct supervision of the Vendor in coordination with the DILG CMGP. They may assign a focal person who shall coordinate with the Vendor.

The Vendor shall undertake the following in relation to the Learning Session cum Assessment Workshop:

Under the general supervision of the OPDS Director or her designated representative, the Consultant shall at a minimum undertake and complete the following tasks and provide the following services:

Task:

- 1.1 Conduct system analysis, identify the system requirements and consult with OPDS thru the RBIS Team, on the enhancements to be undertaken;
- 1.2 In close coordination with the RBIS Team, formulate a Web Development Plan for the RBIS;
- 1.3 Develop backup link installation and related link load balancer configuration;

- 1.4 Enhance the data visualization feature of the Dashboard to include data on bridges and analytics;
- 1.5 Develop web mapping applications and geo-processing tools to support GIS feature of the RBIS;
- 1.6 Developed a variety of charts, pivot tables, KPI widgets, and tabular view components;
- 1.7 Develop an Application Programming Interface where project implementation data and data on the performance of the Provinces and Cities may be displayed;
- 1.8 Conduct series of application testing;
- 1.9 Establish appropriate end-user database and application system access control levels;
- 1.10 Develop and design editing
- 1.11 Formulate and implement necessary data security guidelines;
- 1.12 Assist in the subscription of Clouds Servers
- 1.13 Update the RBIS User’s Manual and Systems Manuals for the databases and application systems;
- 1.14 Perform other tasks that may be requested.

D. Expected Outputs and Deliverables

The Vendor shall deliver the following outputs, with the corresponding timeline:

Deliverables/Outputs	Estimated Duration to Complete	Target Due Dates	Review and Approvals Required	Name and Email address of designated person who will review and accept the output
1. Inception Report (System analysis, identify the system requirements and enhancements to be undertaken as consulted with OPDS through RBIS team);	2 Weeks upon contract signing	2 nd week of April 2019	Road Sector Manager (RSM) and Project manager (PM), R2SDGSS	Abelardo Cea/ abelardo.cea@undp.org Cleto Bravo Gales Jr./ cleto.gales@undp.org
2. Web Development Plan for the RBIS as consulted with RBIS team;	2 Months after approval of the Inception Report	2 nd week of June 2019	Road Sector Manager (RSM) and Project manager (PM), R2SDGSS	Abelardo Cea/ abelardo.cea@undp.org Cleto Bravo Gales Jr./ cleto.gales@undp.org
Upgraded RBIS Data Base - to allow users from a gradually increasing number of LGUs to access, view, validate and correct their production data and to cope up with functionalities that requires content management purposes and data visualization				
Data (Shapefiles) Cleansing mechanism – this will remove any duplication of Road ID’s, Carriageway ID’s and other features from the				

baseline data (shapefiles)				
System Requirements (Software and Hardware requirements specification)				
Enhanced Dashboard data visualization and features (includes data on bridges and analytics);				
Application Program Interface (API) services developed – this will provide a set of routines, protocols, and tools for building software applications. This will also allow RBIS to interact to other available software's / systems.				
3. Advance data dashboards established to track the key performance indicators (KPIs)	2 months Upon submission and acceptance of Deliverable #2.	2 nd week of August 2019	Road Sector Manager (RSM) and Project manager (PM), R2SDGSs	Abelardo Cea/ abelardo.cea@undp.org Cleto Bravo Gales Jr./ cleto.gales@undp.org
Data visualization projected on the Road Maps Module				
Provision of a web portal for Local Road Network – this portal will serve as a tool for displaying geographic information of the Local Road Network, analytics and provide effective management for the shareholders.				
Development of background jobs every 24 hours – this will transform RBIS data, road segment and other road features to geo spatial format for the GIS server.				
Provision, set-up and development of GIS Server – to create distinct map layers for different types of information, and then to combine them in any way desired or needed. Each layer consists of geographic, or spatial, data linked to descriptive, or tabular, information.				
4. Assisted and facilitated provision of cloud servers under the account of DILG – for GIS, Database Server of RBIS and for the Files server	1.5 Months upon submission and acceptance of deliverable #3	End of September 2019	Road Sector Manager (RSM) and Project manager (PM), R2SDGSs	Abelardo Cea/ abelardo.cea@undp.org Cleto Bravo Gales Jr./ cleto.gales@undp.org
Updated User's Manual				

E. Institutional Arrangements

The Roads2SDGs Project Manager and Roads Manager shall directly supervision of the consultant re the overall RBIS enhancement processes, in coordination with the DILG OPDS Director through the CMGP

management office. Technical focal person may be assigned to closely coordinate with and monitor the progress of enhancement.

UNDP, through the Roads2SDGs Project, shall be responsible for the following:

- Make available to the Vendor all necessary information concerning the Roads to SDGs project, including background reference materials;
- Review, provide comments and recommendations, and approve all submissions of the Vendor on a timely basis;
- Arrange meeting/s with the Vendor particularly concerning the review of deliverables

The Vendor is also expected to:

- Respect the confidentiality of information as may be deemed necessary by UNDP, partners, and informants
- Report to the Project Manager through the Road Sector Manager, promptly and in writing, matters that may affect the conduct of the workshop and the quality and timely submission of the written outputs and reports and/or other deliverables
- Attend meetings as may be arranged by UNDP, particularly concerning the review of deliverables and presentation of findings.

F. Duration of Work

The services under this TOR are expected to be accomplished in six (6) months from the date of the contract signing.

- a. The engagement is spread within the timeframe of April 1 to September 30, 2019.
- b. The target starts and completion dates, may change depending on what have been finalized and sealed by UNDP Procurement Unit and other logistical considerations.

G. Duty Station

The engagement is output-based and will not require physical and daily reporting to UNDP. The Consultant shall report to the **DILG Central Office OPDS** and attend meetings for activities related to the project. Equipment, transportation, communications cost and rental fees required for carrying out the assignment shall be borne by the Vendor. Taxes will not be withheld by UNDP and shall likewise be borne by the Vendor.

H. Qualifications of the Successful Individual Contractor

Qualification	Points Obtainable (100 points)
<u>Education</u> Graduate of BS Computer Science, Information Technology (IT), Electronics and Computer Engineering (ECE) and other related courses	20
<u>Experience and relevant training</u> <ul style="list-style-type: none"> • At least 5 years of experience as web/application/mobile system developer in the government or private companies; 	20

<ul style="list-style-type: none"> Have a background on the Road and Bridges and Information System (RBIS) and its Geospatial functions and process flow or development of similar system; 	20
<ul style="list-style-type: none"> Experienced Web/Cloud/Mobile developer using latest Technology such as Bluemix, Cloudant NoSQL, Cloud Foundry and other technology like NodeJS, MongoDB, Angular IONIC and Python 	30
<p>Knowledge and expertise in:</p> <ul style="list-style-type: none"> HTML5 CSS3 JavaScript MySQL JQuery Object Oriented Programming Responsive Web Design ES5, ES6, Angular6, typescript, D3, lodash MongoDB, Postgres Redis Node Python, Java, or Rust GIS (QGIS, Leaflet, Google maps) Docker, Kubernetes Git Familiarity with version control (SVN) and working in a multi-developer environment; Familiarity with NetBeans or other IDE for development and connecting to source repository; Familiarity with UNIX environment and web server setup, knowledge of nginx configuration is desirable; Familiar in microservice design; Extensive knowledge of and experience with cross browser web development for IE, Firefox, Opera, Safari and Chrome. Should have experience in developing an interactive Application Programming Interface (API); 	
<p><u>Language</u> English and Filipino</p>	10
Total	100

I. Scope of Price Proposal and Schedule of Payments

The offer must-be all-inclusive to cover the actual professional services rendered, inclusive of allowances for land transport, meals during travel, and communication expenses which are necessary to perform tasks and accomplish the deliverables for this engagement.

Payments shall be processed and paid in tranches upon acceptance by the Roads2SDGs Project Manager through the Road Sector Manager of the following deliverables submitted by the Vendor:

TRANCHE	DELIVERABLE	TARGET DUE DATES
1st Tranche (20%)	Upon submission and acceptance of the Inception Report	2 nd week of April 2019
2 nd tranche (30%)	Upon completion and acceptance of the outputs under deliverable # 2.	2 nd week of June 2019
3 rd tranche (30%)	Upon completion and acceptance of the outputs under deliverable # 3.	2 nd week of August 2019
4 th tranche (20%)	Upon completion and acceptance of the outputs under deliverable # 4.	End of September 2019

J. Recommended Presentation of Offer

To ensure the use of the same criteria for all the offers, the applicants are requested to present the following documents for uniformity:

- a. Duly accomplished **Letter of Confirmation of Interest and Availability** using the template provided by UNDP as shown in the Annex;
- b. **Personal CV or P11**, indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- c. **Brief description** of why you consider yourself as the most suitable for this assignment;
- d. **Financial Proposal** that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs, as per template provided. If an Offeror is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under Reimbursable Loan Agreement (RLA), the Offeror must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

K. Criteria for Selection of the Best Offer

To select the best offer for this post, the combined scoring method will be used where the qualifications and methodology will be weighted a maximum of 70% and combined with the price offer which will be weighted a maximum of 30%.