AMAJUBA DISTRICT MUNICIPALITY
INVITATION TO BID
BID No.: T2022/09

REQUEST FOR PROPOSALS FOR DEVELOPMENT OF ROAD ASSET MANAGEMENT SYSTEM (RAMS) AND PROFESSONAL SUPPOR FOR A PERIOD OF THREE (3) YEARS

Bids are hereby invited from Software service providers registered on the Central Supplier Database for the development of Road Asset Management System (RAMS) and professional support with a software for a period of three (3) years.

Bid documents will be emailed to the bidder upon producing proof of payment of a non-refundable fee of R500.00 per document. Deposits must be made into the Amajuba District Municipality bank account: Standard bank account Nº 062156624 with the reference number 20229. Bidders are required to email proof of payment, name of bidding company and its contact details before 12h00, 25 February 2022 to khethiwem@amajuba.gov.za. Evaluation of bids will be done on bid companies that submitted their proof of payment before the closing date 25 February 2022. Cash payments are not accepted at the Amajuba District Municipality office.

NB: This bid will be evaluated on price and functionality in terms of the 80/20 preference point system as prescribed in the Preferential Procurement Policy Framework Act (No 5 of 2000) and for this purpose the enclosed forms must scrutinized, completed and submitted together with your bid. The tender validity period is 90 days after tender closing date.

Bidders are required to submit original tax clearance certificate/ Tax Compliance Status Pin or CSD number and valid B-BBEE Status Level Verification Certificates or certified copies thereof together with their bids, to substantiate their B-BBEE rating claims. Failure to submit the proof of B-BBEE Certificate will result in forfeiting the points.

Completed bid documents in sealed envelopes endorsed **"Bid number: T2022/09 –The development of Road Asset Management System"** must be deposited in the Municipality's tender box located in the reception of the Amajuba District Municipality on or before the closing date, whereby bids will be opened in public. Bid envelopes that are not sealed and numbered will not be considered. Late bids will not be accepted. The Amajuba DM is not obliged to award the lowest or any bid.

All technical enquiries should be directed to **Siphamandla Mabizela** on 034 329 7200 or by email: **Siphamandlam@amajuba.gov.za** regarding the bidding procedures, kindly contact **Sabelo Zulu** on 034 329 7200 or by email: sabeloz@amajuba.gov.za.

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Closing date: Friday, 04 March 2022 @12h00 noon

MRS. S.C.N. MDAKANE
ACTING MUNICIPAL MANAGER

1. Introduction

Bids are hereby invited from IT companies involved in System Development for the provision of a Road Asset Management System, system deployment and configuration in Amajuba District Municipality Server, Information and decision support system are indispensable for the effective management of the road network at both the operation and strategy level, to ensure good governance outcomes and optimal service delivery. In South Africa and throughout the world the road asset has suffered from decades of under-investment due to:-

1.1 Lack of investment in planned or periodic maintenance.

1.2 The lack of whole cycle management strategy.

1.3 Lack of effective and efficient routine and periodic maintenance.

1.4 Level of service has been budget driven rather than performance based.

As a result, many roads from strategic routes through to unclassified local roads are in a critical condition requiring capital investment to raise them to the desired level of service and thereafter to maintain them.

2. Background

The National Department of Transport (NDoT) has identified forty-four (44) rural district municipalities in the country as beneficiaries of their Rural Road Asset Management System grant to assist and support the management of rural roads through the development of a Road Assets Management System (RAMS).

The scope and purpose of this grant is to assist rural municipalities to setup rural roads assets management system and to collect rural data in line with the Road Infrastructure Strategic Framework for South Africa (RISFSA) with the following measurable outputs:

2.1 Collection of road inventory data including condition assessment and traffic data; and

2.2 Setting up pavement and bridge management system compatible with national standards.

3. Statement of Work

Amajuba District Municipality (ADM) is looking for a Professional Service Provider to supply a Rural Road Asset Management System (RRAMS) under a subscription basis for a period of 36 months.

The objectives of the project are to provide the Amajuba District Municipality with a sustainable spatial data subscription solution that meets the technical requirements of the Rural Road Asset Management System grant and assists the district to collect and maintain data in a timeous and accurate manner.

All roads' authorities should conduct roads condition surveys regularly, for both surfaced and unsurfaced roads. Such information coupled with increased levels for roads should aim at reducing the capital and maintenance backlog on the South African road network.
The need to access the current backlog with respect to the road provision and maintenance needs has been identified. Through Visual Surveys use of surveillance equipment, a combined analysis of both

paved and unpaved roads, we will be able to get the status of deterioration of roads such as potholes, rutting, corrugations, broken edges, erosion, shoulder wear and deformation.
Once the Road Network Assessment has been done, an Optimum Maintenance Fund Allocation can be done accordingly to address the current backlog of the South African Road Network Condition. Knowing the condition of the road network, the managers and engineers will be able to maintain and improve the quality of our roads.

4. User Requirements

The system must be able to collect, store, process and present RRAMS data in accordance with the RRAMS grant requirements as outlined below.

Serve Hardware
• **>=**12 core@>=2.1Ghz • **>=**64GB RAM • >=2TB Storage

Backup Storage Hardware
• NAS[OR] separate dedicated server • >=5TB

Baremetal Hypervisor OH(Host)
• Windows Server 2016+ with HyperV [OR]VMWare ESXi installed • Virtual Machine Back software installed

Application Serve (Virtual Machine)
• **>=12 VCPUs** • **>=32GB RAM** • **500GB hard disk** • **In/outbound ethernet configured** • **Ubuntu 16.04LTS installed**

Database Server(Virtual Machine)
• **>=12 VCPUs** • **>=32GB RAM** • **>=500GB hard disk** • **In/outbound ethernet configured** • **Ubuntu 16.04 LTS installed**

Backup Regine
• **Application and Database virtual machine added to Backup software"s automated backup configuration**

Network Connectivity
• Isolation subnet in the DMZ for the host and Virtual Machines • External Access to the subnet via VPN • External Fixed IP for the Application Server • Routes configured to allow TCP in/out non VPN traffic on posts 80 and 443 to the Application server via the External Fixed IP

4.1 Data Collection

The system must have an integrated mobile application that can collect data in off-line mode (able to function in areas where there are no network/data coverage) in support of the RRAMS data collection processes as outlined below:

4.1.1 Road network inventory – road geometry, name, length, surface type, administrative regions, and classification (RSFSA)

4.1.2 Road condition data – visual condition data in accordance with THM9 and TMH12 guidelines.

4.1.3 Traffic data – traffic volume data reported by calculating average daily traffic (ADT), annual average daily traffic (AADT), vehicle kilometres and percentage heavy vehicles.

4.1.4 Roadside furniture – this includes guardrails, road signs, road markings, bush shelters, and minor retaining structures as per THM22.

4.1.5 Bridges – bridge inventory data (condition assessments can only be carried out by a qualified and registered bridge inspector).

4.2 Calculations

The system must be utilised, to identify and prioritise the maintenance requirements within the relevant budget limit, to improve condition of the roads and extend the lifespan of road infrastructure. To determine treatment actions, the system must perform calculations from the visual condition and traffic data. The system must support the calculation of functional and engineering indices as per the TMH22 guidelines and include (but not limited to):

4.2.1 VCI – Visual Condition Index (aggregate and deduct methods).

4.2.2 RCI - Reseal Condition Index (aggregate).

4.2.3 MNI- Maintenance Need Index.

4.2.4 SCI- Surface Condition Index.

4.2.5 STCI- Structural Condition Index.

4.2.6 FCI-Functional Condition Index.

4.2.7 CCI-Crack Condition Index.

4.2.8 PIROAD – Priority Index for Road.

4.2.9 EVU - Equivalent Vehicle Units.

4.2.10 VKM- Vehicle Kilometres.

4.2.11 AADT – Annual Average Daily Traffic.

4.2.12 %HV – Percentage Heavy Vehicles.

4.2.13 NCN – Network Condition Number.

4.3 Report and Data

The system must provide interactive and on-line maps and reports for reporting on various metrics in accordance with the TMH22 guidelines, including (but not limited to):

4.3.1 The extent of the road network in the municipality.

4.3.2 The condition and condition trends of the network in the municipality.

4.3.3 Technical maintenance needs and treatment programs.

4.3.4 Road usage, asset value and depreciation.

4.3.5 The status of the municipality's RAMS.

4.3.6 The proportion of municipal roads with updated data captured on its RAMS.

The municipality is also responsible for submitting RRAMS data to NDoT on an annual basis. The proposed RRAMS must assist the ADM in the above reporting and data submission requirements.

4.4 System Specification

The system must comply to the following specification:

4.4.1 Web/mobile-based.

4.4.1.1 The system should be accessible via a modem web-browser (on a desktop PC or smartphone) so that it is accessible to a wider audience without requiring specialised software to be installed.

4.4.1.2 The web interface should have an interactive map interface so that spatial data, such as the road network or road condition, can be visualised and edited (if the user has sufficient permissions).

4.4.1.3 The system must support cloud-hosting or client self-hosting options.

4.4.2 User-customisable charts and reports.

4.4.2.1 The system should have functionality that allows users to explore and query data in the system and produce saveable output reports and charts.

4.4.2.2 The system should allow the sharing (to other authorised users) of output reports and charts.

4.4.2.3 The system should come pre-configured with standard reports as described in the applicable TRH/TMH manuals.

4.4.3 System/user documentation

4.4.3.1 The system must be sufficiently documented in terms of how to use and administer the system.

4.4.3.2 The documentation should preferably be available online and should be searchable*.*

4.4.4 Database-driven

4.4.4.1 To ensure data integrity, the system must utilise a suitable relational database to house and manage data.

4.4.4.2 The database should be spatially enabled so that all road and related features can be stored therein.

4.4.5 Search and filter

4.4.5.1 The system must have search functionality that allows users to find specific features of interest e.g., show all the paved roads within a certain Municipality, Ward or Town.

4.4.6 Importing and Exporting

4.4.6.1 The system must support importing of data exported from other systems or applications (e.g., MobiCap). The following import formats must be supported: csv, xlsx, ESRI shp file.

4.4.6.2 The system must support direct exporting of data in the formats prescribed by the prevailing TMH18 manual.

4.4.6.3 The system should support exporting spatial data in the following spatial formats: ESRI shp and Google Earth km'.

4.4.6.4 The system should support exporting non-spatial data in the following formats: csv, xlsx.

4.4.7 GRMS & PMS Calculations

4.4.7.1 The system should include calculations specified in the applicability RAMS-related TRH/TMH manuals.

4.4.8 Mobile Data Collection

(The service provider must also provider the MACHINES or TEBLET and GPS that will suit the system)

4.4.8.1 The system should have a supporting mobile application, preferably Android-based, that allows for viewing, capturing, and updating of information in the field (mobile data collection) on a smartphone or tablet device.

4.4.8.2 Data collected via the mobile application must automatically flow to the system.

4.4.8.3 The mobile application must include support for capturing photos and GPS co-ordinates of features as points (e.g., for roadside furniture) and lines (e.g., for road geometry).

4.4.8.4 The mobile application must be able to view, capture and update information when not connected to the Internet (offline mode) and synchronise changes back to the server when Internet connectivity is available.

4.4.9 Data review and validation

4.4.9.1 The system should have functionality that allows an administrator/manager to review and authorise (accept/reject) data that has been submitted to the system from the field (via mobile data collection).

4.4.9.2 The system must implement the specified.

4.4.10 Systems Integration

4.4.10.1 System data must be accessible from mainstream Desktop GIS packages (e.g., QGIS and ArcGIS) so that geospatial data can be maintained, geospatial analysis performed, and printable map layouts produced.

4.4.10.2 The system should allow administrators to create authorisation groups and set appropriate user/group access rights and permission levels (e.g., can view, can edit, can add, can delete).

4.4.11 User/group access control and permissions

4.4.11.1 The system should support multiple users.

4.4.11.2 The system should allow administrators to create authorisation groups and set appropriate user/group access rights and permission levels (e.g., can view, can edit, can add, can delete).

5. Bid Requirements

5.1. Bidders must be registered with the Engineering Council of South Africa (ECSA) as a Professional Civil Engineer and have a minimum tertiary qualification of NQF 7 in Civil Engineering.

5.2. Registered GIS practitioner with the South African Geomatics Council and a minimum tertiary qualification of NQF 7.

5. Functional/Technical Evaluation Criteria

Evaluation criteria are a standard or test used in the evaluation of Bids/Proposals to select the Most Advantageous Bid/Proposal which best meets the requirements and offers the best value for money (VFM).

The evaluation of the functional / technical detail of the proposal will be based on the following criteria.

FUNCTIONALITY	SUB WEIGHTING	TOTAL WEIGHTING
EVIDENCE OF RRAMS PROJECTS WITHIN THE LOCAL GOVERNMENT SECTOR & REFERENCES	15	**15**
Relevant evidence of RRAMS projects undertaken within the Local Government Sector coupled with references for projects (provide evidence of projects in either a soft or hard copy and reference letters with traceable referee's details for the projects) • Evidence of one project & reference = 5 points • Evidence of two projects & references = 10 points • Evidence of three and above projects & references =15	 5 10 15	
DESKTOP RRAMS INTERFACE	20	**20**
Snap/screen shots examples by the bidder of the system installed at the municipalities mentioned on the above criteria.	20	
PRESENTATION OF PROPOSED SYSTEM	30	**30**
• Compliance TMH18 requirements • Cost estimation measure and roads prioritization for maintenance/refurbishment/upgrades • System accessibility to various stakeholders and reporting.	10 10 10	
TOTAL SCORE		**65**
MINIMUM SCORE REQUIRED		**50**

NB: A bidder that does not comply with the mandatory requirements and a bidder that score less than 50 points for functionality will be deemed non-compliant with the bid specifications and will not be evaluated any further. Bid companies scoring 50 points and above will be called for presentation.

6. Returnable documents

6.1 All MBD documents must be completed and signed,
6.2 Central Supplier Database (CSD) registration number
6.3 Certified proof of BBBEE certificate/Original sworn affidavit
6.4 Company municipal rates, electricity or water account not older than 3 months, proof of Residential lease or rental or sworn affidavit if the business operates at a place of residence
6.5 Supporting document for requirements and functionality criteria

TERMS OF REFERENCE APPROVED/NOT APPROVED

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MRS SCN MDAKANE
ACTING MUNICIPAL MANAGER