ALFRED NZO
DISTRICT MUNICIPALITY

ALFRED NZO DISTRICT MUNICIPALITY THIS IS TO CERTIFY THAT FUNDS ARE AVAILABLE ON THE ABOVE STATED BUDGET ITEM.
BUDGET OFFICER: .....
DATE: .....
BUDGET AVAILABLE: R.....
FUNCTION CODE: .....
ITEM DESCRIPTION: .....

TERMS OF REFERENCE

SUPPLY, LICENSING AND TRAINING ON THE USE OF DRONES

2023/24 FINANCIAL YEAR

Issued and Prepared by:
Alfred Nzo District Municipality
ERF 1400 Ntsizwa Street
P/Bag x 511
Mount Ayliff
4735

Head of the Centre: Disaster Management– Mr. O. Diko
Contact Person: Ms. P. Maquvana
Tel: 039 254 5101
Fax: 039 254 0343

See comments inside
29/03/2023

TABLE OF CONTENTS

1. BACKGROUND AND OVERVIEW OF THE PROJECT

1.1 INTRODUCTION

The Alfred Nzo District Municipality is susceptible to a number of hazards originating from natural, human made and natural processes which because of various vulnerability and exposure factors lead to disasters that causes or threaten to cause death, injury or diseases and also damage to property, infrastructure and the environment. The ANDM Disaster Management Centre is mandated by the Disaster Management Amended Act No 16 of 2015 to coordinate activities that will reduce the susceptibility of the district to disasters for the safety and the betterment of the lives of its population. The socio-economic status of the district municipality ranging from low income-levels and limited and unsustainable rural development leads to communities settling in areas that are high risk to disasters. When these disasters occur the adverse impacts are noted as it causes destruction to property, infrastructure, and the livelihoods also causes death.

Disaster management is defined as a process or practise that encompasses mitigation, readiness, response, and recovery, regardless of the sort of disasters or emergencies that happened. Due to the lack of coordinated operations by many authorities during a crisis, accurate data collecting may be quite challenging in emergency situations. However, it has been asserted that new approaches and technologies are needed to conceptualise systems that combine a combination of telecommunication tools, remote sensing, and spatial/temporal-oriented databases in order to increase disaster management effectiveness. The inescapability that comes with disasters induces the establishment of provocative safety measures. Revolution in the space of disaster management and control is immensely required and acknowledged concerning technological advancements.

1.2 OVERALL AND SPECIFIC OBJECTIVES OF THE PROJECT

1.2.1 Overall objective

Enhance the preparedness of a Disaster Management Centre as the applications of drones can help in the early detection or prevention of any eruption before a disaster occurs. After a disaster it can offer management real-time monitoring, primarily through delivering timely information for

mitigation or intervention. Using the data collected by the drone, the disaster's effects can be decreased more effectively, and all relevant information can assist decision-making. After a tragedy, drones can swiftly and accurately examine the damage, and they can also help with recovery when it comes to large-scale activities.

1.2.2 Specific Objectives

The specific objectives of the project require the undertaking of the following:

- Availability of the system that will deliver data that is nearly real-time to support decision-making in disaster risk management.
- Quick and efficient system that will be implemented in the pre-planning and post disaster phases of disaster management to reduce the risk of disasters and subsequently protect assets.

Enhance the skills of the Disaster Management Practitioners with regards to integrating technology to the function.

2. SCOPE & EXTENT OF WORK

Quotations are invited from suitably qualified professional service providers to prepare and submit proposals to undertake the SUPPLY, LICENSING AND TRAINING ON THE USE OF DRONES for the Alfred Nzo Disaster Management Centre.

The following gives a high level indication of activities to be undertaken;

- Supply, delivery and licensing of two drones.
- 2 days training on how to use the drones
- Provision of after-sales service for a period of 12 months

Specification

Number	Description	Quantity	Unit Price	Amount
1.	1.1 Weight: (Battery & Propellers Included) – max 1400 g, Diagonal Size:(Propellers Excluded) – max 350 mm, Max Ascent Speed : 6 m/, Max Descent Speed : 4 m/s, Max Speed : 45 mph (72 kph), Max Service Ceiling Above Sea Level :6000m, Max Wind Speed Resistance: 10 m/s, Max Flight Time Approx. :30 minutes, Operating Temperature Range: 32° to 104°F (0° to 40°C), Satellite Positioning Systems: GPS & GLONASS, Hover Accuracy Range, Vertical: ±0.1 m (with Vision Positioning) ±0.5 m (with GPS Positioning), Horizontal: ±0.3 m (with Vision Positioning) ±1.5 m (with GPS Positioning). 1.2 Vision Positioning System : Forward, Backward, Downward, Velocity Range ≤31 mph (50 kph) at 6.6 ft (2 m) above ground, Altitude Range 0 - 33 feet (0 - 10 m), Operating Range 0 - 33 feet (0 - 10 m), Obstacle Sensory Range 2 - 98 feet (0.7 - 30 m) FOV Forward: 60°(Horizontal), ±27°(Vertical) Backward: 60°(Horizontal), ±27°(Vertical) Downward:	02		

	70°(Front and Rear), 50°(Left and Right), Measuring Frequency Forward: 10 Hz Backward: 10 Hz Downward: 20 Hz, Operating Environment Surface with clear pattern and adequate lighting (lux>15), ISO Range - Video: 100 - 3200 (Auto) 100 - 6400 (Manual) Photo: 100 - 3200 (Auto)100-12800 (Manual), 1.3 Camera: Sensor- 1" CMOS, Effective pixels: 20M, Lens: FOV 84° 8.8 mm/24 mm (35 mm format equivalent) f/2.8 - f/11 auto focus at 1 m - ∞, Mechanical Shutter Speed: 8 - 1/2000 s, Electronic Shutter Speed: 8 - 1/8000s, Image Size: 3:2 Aspect Ratio: 5472 × 3648 4:3 Aspect Ratio: 4864 × 3648 16:9 Aspect Ratio: 5472 × 3078, PIV Image Size: 4096×2160 3840×2160 2720×1530 1920×1080 1280×720 Still Photography Modes: Single Shot Burst Shooting: 3/5/7/10/14 frames, Auto Exposure Bracketing (AEB): 3/5 bracketed frames at 0.7 EV Bias Interval: 2/3/5/7/10/15/20/30/60s, Video Recording Modes: H.265 C4K:4096×2160			

	24/25/30p @100Mbps 4K:3840×2160 24/25/30p @100Mbps 2.7K:2720×1530 24/25/30p @65Mbps 2.7K:2720×1530 48/50/60p @80Mbps FHD:1920×1080 24/25/30p @50Mbps FHD:1920×1080 48/50/60p @65Mbps; Max Video Bitrate: 100 Mbps, Supported File Systems: FAT32 (≤32 GB); exFAT (>32 GB), Photo: JPEG, DNG (RAW), JPEG + DNG, Video: MP4/MOV (AVC/H.264; HEVC/H.265), Supported SD Cards: Micro SD Must support maximum capacity of 512GB 1.4 Charger: Must include suitable charger 1.5 App/Live View: Must have dedicated mobile app, Live View Working Frequency: 2.4 GHz ISM, 5.8 GHz ISM, Live View Quality: 720P @ 30fps, Latency: 220ms (depending on conditions and mobile device), Required Operating Systems: iOS 9.0 or later and Android 4.4.0 or later. 1.6 Gimbal: Stabilization: 3-axis (pitch, roll, yaw), Controllable Range Pitch: -90° to +30°, Max Controllable Angular Speed Pitch: 90°/s, Angular Control Accuracy: ±0.02° 1.7 Infrared Sensing System:Obstacle Sensory Range: 0.6 - 23 feet (0.2 - 7			

	m), FOV: 70° (Horizontal), ±10° (Vertical), Measuring Frequency: 10 Hz, Operating Environment: Surface with diffuse reflection material, and reflectivity > 8% (such as wall, trees, humans, etc.) 1.8 Remote Controller: Operating Frequency 2.400 - 2.483 GHz and 5.725 - 5.825 GHz, Max Transmission Distance 2.400 - 2.483 GHz (Unobstructed, free of interference) FCC: 7 km CE: 3.5 km SRRC: 4 km 5.725 - 5.825 GHz (Unobstructed, free of interference) FCC: 7 km CE: 2 km SRRC: 5 km, Operating Temperature Range 0° to 40°C, Battery 6000 mAh LiPo 2S, Transmitter Power (EIRP) 2.400 - 2.483 GHz FCC: 26 dBm CE: 17 dBm SRRC: 20 dBm 5.725 - 5.825 GHz FCC: 28 dBm CE: 14 dBm SRRC: 20 dBm, Operating Current/Voltage 1.2 A@7.4 V, Video Output Port USB, Mobile Device Holder Tablets and smart phones 1.9 Intelling Flight Battery: Capacity (min) 5870 mAh, Battery Type LiPo 4S, Net Weight (max) 468 g, Max Charging Power 100 W 1.10 Other Items: Aircraft operational with battery, camera, propellers, remote and all necessary			

	accessories and software to make it operational as described above, Additional Flight Batteries, Protective Aluminium Cases, ND2-400 Filter, Multi Charging Hub capable of charging three batteries at a time, Petal Hood Cover, Additional Propellers, Landing Gear Extenders, Landing Pad, Range Extenders, Short iOS Cable, Short USB type C cable for Android, Universal USB Card Reader, Lanyard, Quick Detachable Propeller Guards, Sunshields for all device types, Thumb Toggle Controller, Remote Control Dampers			
2.Intelligent Flight Battery	Capacity (min) 5870 mAh, Battery Type LiPo 4S, Net Weight (max) 468 g, Max Charging Power 100 W	02		
3. Training of officials	Training for 7 Disaster Management Officers in basic Flying and Operations of the drone.	07		
After Sales Service	After-sales service to be provided for a period of 12 months	12 MONTHS		
Total Exclusive VAT				
VAT @ 15%				
Total Inclusive VAT				

NB: A compulsory briefing session will be held to clarify the Scope of Work with prospective bidders on the _____ 2023/2024.

3. PROJECT TIME FRAME

The project time frame will be ONE MONTH from the date of appointment of the service provider, which is anticipated to take place on the 01 September 2023.

4. KEY OUTPUTS/PROJECT MILESTONES/DELIVERABLES

- Supply and delivery of 02 drone machines
- Licensing of 02 drones with ANDM proxy
- Training of 07 Disaster Management Officials
- Provision of after sale service for a period of 12 months

5. STAKEHOLDERS CONSULTATION

The main consultation with regards to the project will take place between the stakeholders involved which are the client and the appointed service provider. The successful service provider will be required to undertake stakeholder consultations and engagements as it is a vital and an ongoing requirement to ensure support and buy-in towards the successful completion of the project

6. PROJECT MANAGEMENT

In cases where the appointed service provider appoints the services of other consultants, the appointed service provider will take responsibility of the work. The client will deal with the contracted service provider. The project is to be coordinated and managed by an operational team led by Alfred Nzo District Municipality

7. REPORTING MECHANISM

There will be no report needed to be submitted by the service provider, however the service provider must inform the ANDM on the status of procurement weekly.

8. SUBMISSION OF BIDS

Quotations must be emailed to tenders@andm.gov.za referenced with **Supply, Licensing and Training on the use of Drone Machines and Bid Number: .....** Failure to do so will lead to disqualification.

9. CAPACITY TO EXECUTE THE WORK

Evaluation criteria of the Quotations;

The Quotations will be evaluated in two stages, namely:

- Stage 1- Capacity to Execute Work
- Stage 2- Price and Specific Goal

Only Bidders who score 70% or more on stage 1 would be evaluated further and therefore eligible for the award

ITEM	Scoring
STAGE 1 OF EVALUATION – CAPACITY TO EXECUTE THE WORK	**100**
• **Previous Experience**	**50**
• **Capacity and Expertise**	**50**
Total Scoring	**100**

Price and Preference

Quotations will be evaluated according to the 80/20 Point System in compliance with Preferential Procurement Policy Act (5/2000) and Preferential Procurement Regulations 2022.

Preferential Procurement Goals	**Proof to be Attached to Claim full Points**	**Points**
Price	N/A	80
Specific Goal		20
Bidders will score Specific Goals as follows		

Bidders will score Specific Goals as follows		
Empowerment of Women	Attach ID Certified Copies of Directors Claiming Specific Goals; for Bidders to obtain full points the percentage of equity held must be 51% or more	6
Youth	Attach ID Certified Copies of Directors Claiming Specific Goals; for Bidders to obtain full points the percentage of equity held must be 51% or more	5
Rural	Attach Proof of Residence of the Business or Lease Agreement	2
Disabled	Attach a Signed Letter from Health Practitioner	4
Black Owned Companies	Attach CK and ID Certified Copies of Directors Claiming Specific Goals; for Bidders to obtain full points the percentage of equity held must be 51% or more	3
Total Scoring		**100**

Previous Company Experience **Note: The scoring in this section is not cumulative**	
Traceable record for successful completion of a minimum of 05 or greater supply and delivery of GIS or Survey Equipment projects to the value of no less than R50 000	50
Traceable record for successful completion of 04 supply and delivery of GIS or Survey Equipment projects to the value of no less than R50 000	40
Traceable record for successful completion of 03 supply and delivery of GIS or Survey Equipment projects to the value of no less than R50 000	30
Traceable record for successful completion of 02 supply and delivery of GIS or Survey Equipment projects to the value of no less than R50 000	20
Traceable record for successful completion of 01 supply and delivery of GIS or Survey Equipment projects to the value of no less than R50 000	10
Total Scoring **Note COMPULSORY attachments for verifying work done:**	**50**

1. The ANDM Assessment Bidder Form must be completed, stamped, and signed by the previous employer as a means of verifying references for each project undertaken. If 5 Projects were done, 5 Assessment bidder forms must be completed. **2. In ADDITION to the above, a traceable record will be evaluated on the basis of:** **- An Appointment Letter or Official Purchase Order specifying the contract amount for each completed project.**	

Capacity and Expertise to Undertake the Project **Note: The scoring in this section is preferably cumulative, unless justifiable to the Specification Committee**	
A Project Team with the following areas of expertise:	
Team Leader must have a minimum of NQF Level 6 qualification in Geographic Information System (GIS); Disaster Management; Environmental Science or Geology or Land Survey	20
One or more personnel must have a minimum NQF Level 6 Qualification in Project Management	15
One or more personnel must have a minimum of six months valid license to operate drones and must have an ability to train the users	15
Total Scoring **NB: Attach CV and certified copies not older than 3 months for all qualifications**	**50**

For any queries regarding this tender, please contact : Pumza Maquvana for project related queries; on (039) 254 0748 or; maquvanap@andm.gov.za

Supply Chain Management: Contact for SCM related queries Mr V Cita at telephone number 039-254-5134 during office hours.

Alfred Nzo district Municipality

Erf 1400 Ntsizwa Street

Mount Ayliff

4735

Yours in municipal administration,

ONKE DIKO
HEAD OF THE CENTRE: DISASTER MANAGEMENT

DATE .....

Approved/Not Approved

ZAMILE .H. SIKHUNDLA
MUNICIPAL MANAGER

Date of Approval 27/09/2023

Comments: