**ANTIGUA AND BARBUDA**
**Department of Environment**

# Terms of Reference
## Geographic Information Systems (GIS) Expert

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| **Type of Contract:** | Individual Contract |
| **Position:** | Geographic Information Systems (GIS) Expert |
| **Languages Required:** | English |
| **Duration**: | 12 months (possibility to extend based on performance) |
| **Location:** | Department of Environment Office<br>Victoria Park Botanical Gardens<br>St. John's, Antigua |
| **Date of Issue** | November 7th 2018 |
| **Application Deadline:** | November 28th 2018 |
| **To Apply:** | Please email the Procurement Officer at: doe@ab.gov.ag copied to:  antiguaenvironmentdivision@gmail.com, jasonp.williams@ab.gov.ag<br><br>1. Cover letter<br>2. Recent CV<br>3. Contact information for three references |

### 1. Background and context

The Department of Environment (DoE) is a Government agency within the Ministry of Health, Wellness and the Environment, governed by the Environmental Protection and Management Act (EPMA) 2015 and several other pieces of legislation.  The Department is also the national focal point for climate change and several other important international Conventions. The main focus of the Department is coordinating the national response to the impacts to the environment in Antigua and Barbuda.  This coordination role involves over 40 agencies, the NGOs and the private sector.  The Department has established a Monitoring, Evaluation and Data Management Unit (DMU) to support our mandate by providing the best available data and information on environmental resources in the country.

The DMU is responsible for monitoring and evaluating the implementation of environmental projects, coordinating field data collection and managing environmental databases. This Unit has developed a M&E Framework that has been applied to the internationally funded projects and is in the process of developing a similar Framework for its ongoing environmental programmes. DMU also implements traditional mapping techniques, to include biodiversity baseline data collection and an environmental monitoring programme. In addition to this, the Unit utilizes technology-based mapping methods such as Global Positioning Systems (GPS) and Unmanned

Aircraft Systems (UAS). Another responsibility of the DMU is to manage the various environmental databases of the DOE.  These databases include the environmental Geographic Information Systems (GIS) database, i.e. the Environmental Information Management and Advisory Systems (EIMAS), the Environment Statistics database and the Knowledge Information Management Systems (KIMS). These systems were developed to directly support Part IX (Environmental Information), sections 74 – 79 of the EPMA, 2015

The Government of Antigua and Barbuda has nominated the Department of Environment as the Accredited Entity to the Green Climate Fund (GCF), the Focal Point of the Global Environment Facility (GEF) and the Adaptation Fund (AF). Presently, the DoE is implementing a series of projects funded by the GCF, GEF and AF that directly supports its mandates to coordinate the national response to the impacts to the environment. The GIS Expert will provide the DMU with technical support to collect geospatial data and manage the EIMAS.

### 2. Objective

As GIS Expert, the objectives of this consultancy are to undertake work to:

**a)** Collect geospatial data in the field using GPS and UAS Technology;
**b)** Develop the EIMAS through cataloguing the various environmental datasets;
**c)** Support the baseline data collection for ongoing and upcoming environmental projects;
**d)** Collaborate with partner agencies in developing their GIS capacity.

### 3. Recipient

The recipient is the Government of Antigua and Barbuda, specifically the executing agency – the Department of Environment.

### 4. Scope

Key **specific detailed tasks** of the GIS Expert are namely to:

i) Conduct a review of the EIMAS dataset inventory and provide recommendations to organize in appropriate catalogue (database);
ii) Carry out an inventory of all relevant environmental datasets and provide appropriate methodologies for updating of these datasets;
iii) Provide support to partner agencies, to include the Ministry of Works, Development Control Authority, etc. in the development of their GIS programs;
iv) Collect and compile datasets generated from partner agencies to include the Ministry of Works, Development Control Authority, etc. and add to the EIMAS inventory;

v) Work in collaboration with the environmental monitoring programme for the input of relevant datasets into the EIMAS;

vi) Work in collaboration with the biodiversity monitoring programme for the input of relevant datasets into the EIMAS;

vii) Updating the EIMAS Protocol and the UAS Operational Manual, taking into consideration the advancements;

viii) Provide training on Introduction to GIS, Spatial Analysis, Spatial Data Management, Remote Sensing and Digitization, Web-based GIS, GIS Customization, etc.;

ix) Describing current situations as well as modelling future trends in GIS, to include erosion, flooding, sea level rise and environmental risk modelling;

x) Respond to data requests from partner agencies and/or the public;

xi) Represent the DoE at national, regional and/or international meetings, trainings, workshops, conferences or seminars;

## 5. Deliverables

The GIS Expert will be supervised by the Data Manager and together will update the EIMAS section of the DMU Results Framework. The GIS Expert will provide monthly reports to the Data Manager no later than 5 working days after the end of each month. After the first six months, the GIS Expert will be subject to a performance evaluation.

## 6. Qualifications and Experience

To be eligible for this assignment the GIS Expert should meet the following criteria.

- Possess a recognized degree or higher (Master's degree) in GIS or a similar related field from a tertiary institution. A Bachelor's degree with additional years experience can be accepted as the equivalent to a Master's degree;
- High level knowledge of ESRI ArcGIS;
- The GIS Expert should have undertaken at least two assignment of similar nature and should possess at least 4 years of experience in GIS field;
- Possess knowledge and experience in modelling climate change impacts, i.e., flood hazard, storm surge, erosion modelling, etc.;
- Knowledge and background in coding using GIS and modelling rainfall data, geological features, socio-economic and hydrology data would be a plus;
- Knowledge and work experience with ArcGIS and Quantum GIS is a must;
- Knowledge and work experience with ArcHydro, HEC-HMS or HEC-RAS would be considered favorably
- Previous experience in teaching or providing training in GIS;

- Ability to work with senior government officials, research institutes, non-governmental organizations (NGOs), and local communities;

- Fluency in written and spoken English and strong analytical and communication skills.

## 7. Base of Operation:

The GIS Expert will be based in the Monitoring, Evaluation and Data Management Unit of the Department of Environment.

## 8. Evaluation Criteria

The evaluation criteria and weightings that will be applied to these terms of reference are as follows:

| Category | Description | Weighting |
|---|---|---|
| 1 | Qualifications of consultant and availability to report for assignment | 30 |
| 2 | Adherence to TOR specifications and related requirements | 30 |
| 3 | Experience with similar work | 20 |
| 4 | Demonstrated track record of success, supported by references | 20 |
| | Total | 100 |