

Terms of Reference

Customization of GIS Applications

BACKGROUND

Board of Revenue has initiated a number of activities towards modernization of Land Administration which also includes establishment of Geospatial and Information Management (GIM) Unit. GIM Unit is a centralized facility which will support all GIS operations of Directorate of Land Records and Board of Revenue which includes parcel level mapping. GIM Unit has recently acquired ArcGIS Enterprise solution to manage its GIS data. A number of projects are ongoing in BOR regarding Land Records which include Computerization of Land Records and GIS based Land Settlement in different areas of Khyber Pakhtunkhwa. BOR and Survey of Pakistan is also working together on digitization of public properties. All these projects and activities are focused on creation of data while there is a strong need of web portal to view and share the data.

In order to support the information sharing platform, Web and Mobile applications are required to be developed for GIM Unit. These apps will not only support Board of Revenue in its operations but will also support other departments in accessing required data. It will also include apps for viewing State Land data which is already digitized by the Survey of Pakistan. Terms of reference are given as below:

QUALIFICATION / EXPERIENCE

Education

1. A minimum of Master's Degree in GIS with major in GIS programming / development or any other related degree.
2. Proven experience of development in ArcGIS environment.

Experience / Technical skills

1. A minimum of five (5) years of experience with ESRI technologies especially in ArcGIS Server / Enterprise.
2. Proven technical experience of development of ArcGIS tools.
3. Strong proficiency in understanding client's requirement.
4. Having good command on ArcGIS Enterprise Implementation is a must.
5. Must have strong knowledge of Web Development using HTML, CSS and JavaScript along with its libraries.
6. Experience of Python to develop customized tools.
7. Must be experienced in ArcGIS Online, ArcGIS Pro and other ESRI softwares
8. Must have good command on SQL Server (Enterprise).
9. ArcGIS certification will be an asset.

DELIVERABLES

Requirement Analysis

1. Meet GIS Users including Senior Management, GIS technical staff and field staff to know their requirements for the Web Apps.
2. Assess / identify and recommend additional licenses required for the implementation of Land Administration Workflow using ArcGIS Enterprise. ArcGIS Enterprise with 50 Creator Users have already been purchased.

Implementation of ArcGIS Workflows

1. Configuration of enterprise geodatabase using ArcGIS Enterprise and SQL Server over the local area network.
2. Create multi-user geodatabase environment for GIS Users and Field Staff to mainstream modern Land Administration workflows. It will include to develop mechanism for sharing digitized record with field staff using Field Maps / other tools, as appropriate.
3. Implement versioning control for GIS Users to ensure consistent data management.

Development

1. Development of multiple customized Web Apps using ESRI technology for:
 - a. Searching of State Land. This app will be used by Board of Revenue to search all those properties which belong to state and will aid in decision making for better utilization of the piece of land.
 - b. Searching of Service Delivery Centers (SDCs) / Patwar Khanas. This app would be used by general public to search for SDCs and Patwar Khanas where services are provided to the public. This app would be integrated within Board of Revenue website.
2. Development of native Mobile Apps using ArcGIS AppStudio. This app would be used to give services to general public using their mobile devices.

Training

1. Development of user manuals for the applications developed.
2. Train existing staff on the use and management of Web and Mobile Apps.

TIMELINES

The activity must be completed in six (06) months.