Formulation of GIS-Based Master Plans for 500 AMRUT Cities

OBJECTIVE

The objective is to develop common digital geo-referenced base maps and land use maps using Geographical Information System (GIS) and Master Plan Formulation for 500 cities that are selected as AMRUT Cities.

RATIONALE

Use of geospatial technologies is expected to contribute to AMRUT cities in the following ways:

- Formulate a master plan for decision-making;
- Effective landuse management and utilization;
- Spatial growth management;
- Enable project planning; and
- Urban management.

These GIS-based Master Plans will help in different types of urban planning exercises, e.g. preparation of master plan, development plan, zonal plan, utility plan, infrastructure plan, etc. to be simplified by using IT tools. The National Remote Sensing Centre (NRSC) provides Q-GIS on Bhuvan Portal, which is open source software and tools to prepare different types of plans. This will be made available for all AMRUT cities on the Bhuvan Portal.

MAJOR DELIVERABLES AND ROLES& RESPONSIBILITIES

Final base maps in the form of user-friendly spatial products at the functional scale of 1:4000 having defined layers as per Design & Standards. The major deliverables are:

Base Map& Thematic Maps: City /town base map and thematic maps including existing landuse map as per Design & Standards which is prerequisite for formulation of master plan and other plans.

Urban Database Creation: Sector-wise data collection and data analysis report of 25 aspects as per Design & Standards.

Formulation of Master Plan: Formulation of Master Plan of city as per State Town & Country Planning Act which includes demand assessment, identification of issues, projected requirements, development strategy and draft proposals on the GIS base map and sector-wise data analysis.

The satellite data acquisition and final base map preparation at 1: 4000 scale will be undertaken by NRSC, Department of Space. The demarcation of area of mapping of towns/cities will be done by respective State Town Planning Departments. The State Town &Country Planning Departments/ ULBs will formulate the master/ development plans. The MoUD/ Town and Country Planning Organization (TCPO) will monitor and coordinate the implementation of the scheme besides preparation of model RFP for States/Cities for

procurement for consultancy services for the Master Plan Formulation component of AMRUT.

TIMELINE

Total time period for base map generation including data acquisition, geo-referencing, GPS Survey, data processing, ground truthing, generation of thematic layers, etc. as per Design &Standards for 500 cities would be 24 months.

Time period for urban data collection, data analysis and master plan formulation upto draft proposal stage will be 36 months.

The work will be undertaken in four phases. The details are as under:

Phase	No. of towns	Duration (Months)	Initiation of work	Activities
A. **Base Map Generation** **Implementation Agency: NRSC and TCPO**				
I	100	6	Sept 2015	Data acquisition, geo- referencing, GPS survey, data processing, ground truthing, generation of thematic layers
II	100	6	Mar 2016	
III	150	6	Sep 2016	
IV	150	6	Mar 2017	
B. **Master Plan Formulation** **Implementation Agency: State Town Planning Departments and TCPO**				
I	100	36	Mar 2016	Attribute collection, vetting of maps, primary and secondary surveys, data collection and analysis, formulation of master plan
II	100	36	Sep 2016	
III	150	36	Mar 2017	
IV	150	36	Sept 2017	

BUDGET ESTIMATE

The total cost is estimated to be Rs. 515.00 crores, of which geo-spatial database creation is about Rs. 115.90 crores, cost of plan formulation including data collection & analysis is Rs. 388.25 crores and Capacity Building is Rs.10.85 crores. This will be met out of AMRUT Scheme from the State share of Administrative & Office Expenses (A&OE).

CHALLENGES

- Interest on the part of the States/ULBs as they will be overseeing and monitoring the project.
- Lack of coordination among Town and Country Planning Departments, Development Authorities, ULBs, Parastatals and Line Departments.
- Spatial attribute data collection and vetting of maps from line departments and other concerned agencies is a time-consuming process.
- Lack of adequate capacity and trained professionals within ULB who are familiar with GIS.

- Availability of legible cadastral maps and other information for incorporation into GIS formats.