

GIS-based Master Plan Formulation

Introduction:

The urban settlements of the country have experienced relatively rapid population growth and the percentage of India's population living in urban areas has more than doubled from 14% at the time of Independence, to 31.8 % in 2011 (Census of India). This is expected to increase even further to nearly 40% by 2026 and is expected to be more than 50% by 2051.

Most of the urban settlements, especially smaller urban settlements, are characterized by haphazard and unplanned growth, non-conforming land uses, mushrooming unauthorized colonies, and land conversion from agriculture to urban resulting in environmental degradation and poor quality of life. The proper management of urban areas calls for accurate and vital information to be available on a regular basis in order to formulate a spatial planning framework.

The most crucial information for formulating a Master Plan is an accurate and updated Base Map of the planning area, showing roads and building layout, spatial extent of development and information on the use of each parcel of land etc. Use of Satellite Images and GIS can support this very effectively and also help in quick analysis of land form, soil, vegetation, settlement pattern etc. on the basis of which strategies and proposals for a horizon year may be developed.

Satellite Images and GIS correlated with socio-economic data contribute immensely in monitoring and management of urban areas. Most of the Master Plans formulated are based on accurate and up to date base maps prepared using Satellite and Aerial Platforms.

Out of 7933 towns and cities in 2011, 1233 urban settlements have approved master plans in force and 653 master plans are in the process of being formulated. This is as per information obtained from State Town & Country Planning Depts. i.e. only 24% of towns and cities have statutory master plans.

Cabinet Secretary vide DO no. 601/2/1/2014-15-TS dated 09.12.2014 on the subject "Leveraging tools of space technology in efficient governance" has desired that action points for effective utilization of latest tools of space technology in urban and regional planning must be identified and a programme may be taken up with close interaction with States who are partners and implementers. Accordingly, the present and prospective applications of space technology in urban and regional planning have been identified in close coordination with State Governments.

The Proposal :

It is proposed to take up formulation of GIS-based Master/ Development Plans for 4041 statutory cities/ towns in India as per Census 2011 with budget outlay of Rs. 1591.76 Crore. This would include four major components:

- i) Generation of geo-spatial database for all 4041 cities/ towns at 1:4000 scale or higher

- ii) Formulation of master/ development plans for 4041 cities/ towns including attribute data collection
- iii) Establishment of GIS Cell in urban local bodies (ULBs)
- iv) Capacity building

In this connection, an Interactive Workshop with Chief Town Planners and representatives of State Governments was held on 17.02.2015 under the Chairmanship of Chief Planner, Town & Country Planning Organisation (TCPO) and Nodal Officer appointed by the Ministry of Urban Development (MoUD) for effective utilization of space technology for urban and regional planning. In this workshop, the proposal for “GIS-based Master Plan Formulation” for 4041 statutory towns was discussed in detail and inputs from States have been taken to formulate the Scheme which is under the consideration of Working Group on Urban Development.

Since State Governments are the implementing agency under the scheme, State Town Planning Departments will be the State Nodal Agencies. MoUD/TCPO will coordinate with the States for identification of selection towns and area of interest. The State Nodal Agencies identified under the Scheme will be the focal points for implementation at State level. MoUD will provide the funds for implementing the scheme. State Governments/SNAs will submit a detailed proposal covering schedule, implementation and monitoring mechanism, deliverables, roles and responsibilities, establishment of GIS cell, capacity building, requirement of funds, etc. to MoUD. At State level, State Coordination Committee (SCC) constituted under the chairmanship of Principal Secretary, Urban Development will approve the proposals submitted by the State Town Planning Departments and monitor the scheme.

The Standing Committee on Urban Development (SC-U) under the National Natural Resources Management System (NNRMS) under the chairmanship of the Secretary (UD) will be the apex body to oversee and monitor the implementation of the scheme. Technical Advisory Committee (TAC) under the chairmanship of Joint Secretary (UD) will approve the proposals submitted by the States and monitor the scheme at National level.

Actions Initiated:

With respect to the Scheme, the following actions have been initiated. The details are as under:

- Ascertaining the Unit Costs: TCPO, Ministry of Urban Development in co-ordination with NRSC, Department of Space has worked out unit cost of geospatial data generation at 1:4000 scale for 4041 towns, using very high resolution satellite data, for formulation of master plans, at 1: 4000 scale.
- Ascertaining area of mapping: Ministry of Urban Development has requested Registrar General of India to provide areas of 7933 cities/ towns as per Census 2011 in order to ascertain the total mapping area and work out the cost of the scheme. Till date the information is yet to be received. However, TCPO has projected the areas of the towns based on 2001 census to work out the cost.

- TCPO has also requested State Town Planning Departments to demarcate extent of cities/towns including future urbanisable areas on Survey of India topo sheets. The responses are yet to be received.
- An interactive meeting with States, who are partners and implementers, was held on 17.02.2015 under the Chairmanship of the Chief Planner, TCPO to discuss the proposal in detail.
- Design & Standards for the Scheme: Ministry of UD has constituted a Committee under the chairmanship of Deputy Director, NRSC to work out Design & Standards, methodology for the scheme. The meetings of the Committee were held on 12.03.2015 and 14-15.07.2015. The Committee has finalised the Guidelines and Design & Standards which are being circulated to all the States for comments.
- Thereafter, the Guidelines and Design & Standards will be placed before the Technical Advisory Committee of the Ministry of Urban Development chaired by JS (UD) and NNRMS (SC-U) under the chairmanship of Secretary (UD) for approval.
- A Technical Advisory Committee (TAC) for coordination and implementation of the 'Formulation of GIS-Based Master Plans' Scheme has been constituted by the Ministry of UD.
- The Working Group on Urban Development under the chairmanship of Secretary (UD) approved the proposal in its meeting held on 11.04.2015.