

URBAN DEVELOPMENT SOLUTIONS

PERSPECTIVE OF URBAN DEVELOPMENT

India is poised to have nearly fifty per cent of India living in urban areas in next decade and that poses a challenge for the urban development and renewal task. With large scale urbanization comes the need to plan and develop urban areas in a systematic manner, invest in infrastructure and improve the quality of life in our cities. There is an urgent need to address the downside of proliferating slums, increasing homelessness, growing urban poverty and crime, of relentless march of pollution and ecological damage.

One of the major requirements for urban development is to have the accurate and timely information – information in geo-spatial forms that allows generation and use of different maps, GIS data and applications. Information of urban areas that characterizes the Social and economic environment, Physical Environment, services and amenities are critical in planning and development of urban areas. At the same time, the urban area also requires Urban Management as details of town planning or municipal functions – especially, regulation of land uses, building by-laws for management activities in urban planning, taxation and revenue, urban amenities planning, urban infrastructure management etc.

Every urban area needs GIS – a comprehensive map-based Geographical Information Systems (GIS) that powers urban planning and urban management. The GIS must meet the needs of the city – at different levels of administration/planning/management, be based on modern data sources such as satellite and GIS databases, provide GIS-Decision Support System (DSS) for urban planning/management.

SPECIFIC GOVERNMENT PROGRAMS

Most of government's urban programmes stress the foundation of a GIS – like, Jawaharlal **Nehru Urban Renewal Mission (JNNURM) of Ministry of Urban Development (MUD)**, aimed at creating economically productive, efficient, equitable and responsive cities and there is a need for GIS-Ready Data and GIS Solutions for Urban Planning and Management in every of the 7000+ city in the nation; **National Mission Mode Project (NMMP)** on e-Governance in Municipalities where improvement of service delivery mechanism and citizens' involvement in governance is the focus and this too would require city-specific detailed GIS-Ready data and specific customized GIS Solutions of Urban-governance and Citizen-GIS solutions; **Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT)** for improving infrastructural facilities and requiring detailed maps and GIS Applications for planning and developing urban infrastructure and Municipal Administration; **Rajiv Awas Yojana (RAY)** that envisages each State to prepare a State Slum-free Plan of Action (POA).

MAPMYINDIA OFFERINGS

URBAN PLANNING: With the pace of urbanisation happening in India, Development authorities and Town Planning departments in various cities are looking at creating fresh master plans of their cities to accommodate the needs for next couple of decades.

- GIS Mapping and demarcation of current status of development and landuse in various cities becomes the first task in order to accomplish preparation of such master plans.
- MapmyIndia has vast experience in developing such maps for multiple town planning departments and development authorities in various cities.
- Preparation of existing Landuse map of the Planning Area in GIS format includes demarcation of all urban and rural settlement areas, agriculture land, orchards, residential, commercial, industrial, mixed land-use, old city limit, and community facilities, hierarchy of Public facilities and services such as : education, health, communication, drinking water, sanitation, electricity, fire stations, police stations, etc. In addition, the activity also includes mapping of transportation

- network, bridges, water bodies, high tension lines, forest, barren and wetlands etc
- Further, GIS mapping also includes superimposition and digitisation of cadastral maps. Creation of contours is also made a mandate for completion of GIS mapping.
- Once, this basic GIS infrastructure gets created, MapmyIndia also has the capability to support Town Planning in creation of Master Plans by assessing needs of the city for several decades in future and analysing gaps from current state of the city.

Tools and techniques used:

- Procurement and use of high resolution satellite imageries
- DGPS surveys and collection of Ground control points
- Total Station Surveys
- Auto level surveys
- Groundtruthing
- Vectorisation and Landbase creation
- Cadastral mapping



Digital data preparation using the surveyed data and this data contain ward boundaries, foot prints of each building including contour information.

URBAN LAND RECORDS AND TAXATION – Urban local bodies/ULBs like Municipal Corporations, Municipal Councils, and Municipal Committees in various cities have the mandate from Ministry of Urban Development (MoUD) of Government of India (GoI) to use GIS technology to manage land/property records and taxation processes.

MapmyIndia has played a vital role in creating GIS map data infrastructure for ULBs in multiple cities. The process includes

- Creation of high resolution base map of the city and then adding attributes with respect to land records and property taxation.
- Producing property maps is the next step to provide an improved information base for addition of property level attribute data.
- ULB may also require superimposition and vectorization of cadastral boundaries to get right-off-records (RoR), micro level land-use and utility services
- Our teams engage with ULB engineering and planning staff to carry out property and utility mapping for ULB and to ensure long term sustainable improvement in ULB record keeping through upgrading skills in, and systems for, storage and collection of information on properties and services and for development of GIS applications.
- Household surveys are conducted to capture ownership details, occupancy details, plot areas/carpet areas of every property. This acts as base data for setting up processes for property Taxation.

Tools and techniques used

- Procurement and use of high resolution satellite imageries
- DGPS surveys and collection of Ground control points
- Groundtruthing
- Image processing and Registration of cadastral maps
- Property and Road (RoW) surveys
- Contact surveys in every household/property
- Vectorisation and Landbase creation

eGOVERNANCE & MUNICIPAL GIS – The government of India has implemented a comprehensive programme to accelerate eGovernance at all levels of the Government to improve efficiency, transparency and accountability at the Government-Citizen Interface. Idea is to provide better services to the citizens through single point delivery mechanism which is available centrally on an online platform.

MapmyIndia has huge expertise and have made available such platforms to Urban Local Bodies.

- Once the GIS data infrastructure is put in place for Urban land records and property taxation, MapmyIndia can provide an online interface through ULB's official website that can take care of various aspects of eGovernance.
- Key services under eGovernance and Municipal GIS initiatives include
 - Issuance of birth/death certificates,
 - Payments of water bills,
 - Property taxes,
 - Citizen feedback and Grievances,
 - Objections,
 - RTI etc.

Tools & techniques used:

- MapmyIndia GIS ready maps for All India and respective ULBs
- MapmyIndia's Web mapping engine and technology
- Other GIS engines including ESRI and Pitney Bowes MapInfo solutions
- Data modeling and architecture
- Expertise on defining User Interface
- Service expertise for co-ordination with citizens on behalf of ULBs

MAPMYINDIA EXPERIENCE WITH URBAN DEVELOPMENT

1. GIS mapping of Jammu and Srinagar city under JKERA
2. GIS mapping and property taxation surveys for city of Meerut and Allahabad
3. Municipal GIS for city of Gurgaon
4. Urban Planning including creation of Master Plans for cities like Bulandshaher, Khurja, Rai Bareilly etc.
5. Topography surveys and cadastral mapping for multiple cities in various states

EXAMPLES OF MAPMYINDIA URBAN SOLUTIONS

JNNURM Project

MapmyIndia successfully developed GIS and Property Mapping for multiple cities under Jawaharlal Nehru National Urban Renewal Mission (JNNURM) government program whose objective was to encourage reforms and fast track planned development of identified cities. The focus was on efficiency in urban infrastructure, service delivery mechanisms, community participation, and accountability of urban local bodies.

MapmyIndia has unique knowledge, expertise and capability in providing location, geo-spatial and navigation solutions.

MapmyIndia developed multi-scale GIS solutions for planning and administration of urban areas and optimizing tax-collection whereby assisting urban local bodies in strategic planning, resource utilization, municipal taxation, management functions, planning and management of day-to-day operations. The project was completed in three stages. In the first stage detailed large scale maps were developed using the state-of-the-art technology of GPS, Image processing and data capture. The second stage focused on property mapping and development of GIS. The third stage involved implementation of bill generation, distribution and collection of property taxation system