

Application of GIS for Urban Planning & Management

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Abstract — Geographical Information Systems (GIS) can be defined as an intelligent tool, which relates to techniques for the implementation of processes such as the introduction, recording, storage, handling, processing, and generation of spatial data." Traditional methods of surveying and land records cannot be successful tools for managing the urban scenario today. 'GIS is one such sophisticated tool' to handle spatial information and sequentially analyze the physical environment with that of its attribute data such as canopy, land uses, land cover, environmental resources, water line, sewer line, etc., and related to its topography apart from the conventional.

Keywords: Geographical Information Systems (GIS), Urban Planning & Management

I. INTRODUCTION

'Geographical Information System (GIS) Software' is used in different departments of India for urban planning. The most important that is performed by engineers, urban planners, and transportation planners, GIS is part of spatial information systems. They process and generate spatial information like photogrammetric and cartographic products, statistical reports, etc.

The rest of the 'aspects' of the infrastructure in Urban areas are Important for Planning. GIS applications have been the work of these seven arias that make up 'Urbanization'. Discuss the situation of various urban 'planning' and business sectors that are randomly imposing themselves on the reality of the situation present on earth. It may solve the problems of planning and public transport in these areas. It states that different regions and areas appeared to be special in urban Planning. Concerning the research, this paper describes specific applications of GIS functions used in the planning and analysis of urban places, and distortions in the urban fabric of the city of India.

GIS technology is very important in planning and effective decision making Software in urban planning and the development of Area. In different urban applications such as road network management, monitoring, health and sanitation problems, analysis of per capita, industrial area planning, and improvements of green space. Drainage systems and many plans are developments are done by use of GIS Software.

II. AIMS AND OBJECTIVES:

Owing to the increased urbanization and also due to the impact of globalization most of the metros face tremendous urban pressure, and infrastructure is at stake in these areas. These metros have become highly dense concrete jungles. The main purpose of this paper is to study, analyze, and choose the best-fit area for urbanization,

- The need for the new town.
- Stages in urban planning models- from large-scale urban theories to the current urban simulations.

- Using GIS as a powerful tool to capture, analyze, and locate the various land uses.

III. METHODOLOGY:

- The base map of the study area was prepared using the existing map.
- Using GIS techniques, the thematic maps have been prepared.
- Digitizing, editing, and labeling the various thematic maps, integration, and preparation of derived maps using GIS software.

IV. STUDY AREA:

The study area selected for such study to demonstrate the newer concepts of site suitable for urban planning and land value study on the priority basis of Jaysingpur City, Shirol Taluka, Kolhapur District, Maharashtra.

A. Benefits:

Implementing the "smart city" concept with GIS solutions has many advantages for businesses, urban environment development, and its inhabitants. Overall, it enables better resource allocation, and cost optimization, as well as benefits the quality of life of city residents and visitors.

It has also a decent potential for improving and optimizing various aspects of the urban ecosystem, including transport, infrastructure planning, public places, tourist routes, and more. Now, let's discover the upsides of the application of GIS in urban planning in detail.

- Enhanced mapping process.
- Increased access to vital information.
- Improved teamwork & communication.
- Increased quality and efficiency for public services.
- Increased support for strategic decision-making.
- Site selection & land acquisition.

V. CONCLUSION:

Urban planning is a very intense exercises that involves a lot of related fields. The first generation of planners had a common platform with sociologists, economist and related designers. The second generation became a step advanced with the advent of 'GIS' – 'which has proven itself as very strong tool. The present third-generation urban planning trend takes the utmost benefits of information technology, decision-making systems, and simulation models and applies them to the GIS models. Thus (GIS) is now "not only a tool for capturing and analyzing data, but much ahead of it in taking exclusive land-related decisions too." The 'GGLSS' 'model of urban design' for Jaysingpur City, Kolhapur District, using 'GIS' has been successfully conducted.

REFERENCES:

- [1] Sharmand Engineering Consultants, 1998, the Methodologies of Realization of Urban Developments Plans in Iran (In Persian), Vol. 1, Center for Urban Planning Studies.
- [2] Yeh, A. G-O (1999): Urban planning and GIS, In Geographical Information System, Principal and Technical Issues, Eds. Longley P.A., Good Child M.F., Maguire D.J., Rhind D.W., John Wiley and Sons, USA, Vol. 1.
- [3] Sharmand Engineering Consultants, 2000, the Methodologies of Realization of Urban Developments Plans in Iran (In Persian), Vol. 3, Center for Urban Planning Studies.
- [4] Zorica Nedovic '-Budic` 2000, Geographic Information Science Implications for Urban and Regional Planning, URISA Journal, Vol. 12, No. 2.
- [5] Bansal V K (2008), "GIS-based projects information system for construction management" Asian Journal of Civil Engineering, Vol. 7(2), pp. 115-124.
- [6] Bansal V K (2012), "Application areas of GIS in Construction project management,International Journal of Construction Management, Vol. 12(4), pp. 17-36.
- [7] H. S. Sudhira, T. V. (2009). Urban Sprawl Management: Need for an Integrated Spatial Planning Support System. Research Gate. Retrieved from <https://www.researchgate.net/publication/251574500>
- [8] Verma R.K, Kumari S and Tiwary R K (2011), "Application of Remote Sensing and GIS technique for efficient urban planning in India" Accessed September 13, 2011, at <http://www.researchgate.net/publication>.