

---

**RESEARCH PAPER “PLANNING AND DEVELOPMENT OF SATELLITE CITY”****Shubhangi Jadhav\*1, Raunaque Ansari\*2, Tanuja Deshmukh\*3,****Anjali Gore\*4, D.W. Gawatre\*5**

\*1,2,3,4UG Student, Department Of Civil Engineering Sinhgad Academy Of Engineering,  
Pune-48, (M.S), India.

\*5Faculty Of Department Of Civil Engineering, Sinhgad Academy Of Engineering, Kondhwa , Pune  
411048 Maharashtra, India.

---

**ABSTRACT**

Cities are transforming the world. The majority are rapidly declining. The increase in population, failing infrastructure, and sprawling development are all factors contributing to this decline. Industrialization developed in an unplanned and haphazard manner. In today's world of globalization and privatization, Indian satellite cities are ignoring inherited traditional design features and planning concepts, environmentally friendly construction work, unemployment, and the city's economic strength, all of which have played a key role in the revival of satellite city culture. Planned cities are satellite cities. They are intended for a major city to expand in all possible ways by utilizing land, such as by creating an artificial tourism theme. Individuals may create a desire for the current settlement to be developed into a satellite city. Satellite cities are completely independent cities that have been planned and developed outside of metro areas. They are self-contained, autonomous cities. The main goal of this project is to collect all necessary information in order to control problems that arise in satellite cities, such as Metro blockage, ecology and environment, economy, and unemployment, and another.

**Keywords:** Development, Urbanization, Satellite City, Inclusive, Evolution, Green Development Policy.

---

**I. INTRODUCTION**

The satellite city is one of the popular concepts in the urban planning. It is the small metropolitan area is located near to the large metropolitan area. The satellite town has the traditional downtown that surrounded by the neighbour hoods of inner city. The man-made satellite city was successfully launched because of the satellite city concept. The urban sprawl is managed by the satellite city or satellite town. The satellite city is the most effective option to urbanization issues. Urban development in parent city results in various problems which a city faces. For example traffic problem in central city and the high land value makes it expensive for people and businesses to relocate to other areas.

The growing urbanization of large cities has been a major concern for planners in terms of what should be done to control it since the twentieth century. Many experts argue that the problems arising from unprecedented urbanization and population growth in the world's largest cities are qualitatively different from previous urban problems, necessitating a new approach to urban planning. Sustainable development means: - Using current resources while keeping future societal needs in mind, so that resources are not depleted. It should not disrupt the ecological cycle, preserving the environment as a result. Planning of land utilization and environment friendly construction with effective management and development to improve the living standard.

**Examples of Indian satellite cities:-**



**Fig 1:** Pimpri-Chinchwad, satellite city of Pune, India



Fig 2: Navi Mumbai, satellite city of Mumbai, India

### Objectives:-

- **Decongestion** :- Metro blockage is one of the significant issues looked because of an excessive number of vehicles and individuals. For example, Gurgaon and Noida-satellite towns are very fruitful against metropolitan clog in Delhi. To overcome form blockage problem planning and implementation in satellite city.
- **Ecology and Environment** :- Climate degradation and urbanization are intimately connected. The city's air and water quality will degrade at a faster rate as it grows. The loss of green cover and the creation of concrete jungles are the primary causes. Human utilization is more optimal and beneficial. Satellite cities could be a solution to the corruption fixation variables. By providing "GREEN DEVELOPMENT POLICY" to protect ecology and environment .
- **Optimum land utilization:-** The most important and limited resource available is land. The need of the hour is to make the best possible use of the city's assets in order to ensure the city's long-term suitability. Such as parking slot, library, school, city halls, play ground, theaters, park, zoo etc.
- **Economy:-** The potential of a satellite town for regional growth is more optimum and beneficial to humans when resources are properly utilized. Artificial tourism concept helps in financial growth of satellite city with the help of natural surrounding.
- **Converting Labor Force to Workforce:-** A satellite city's comprehensive development requires equal opportunities for its labor force. Unemployed, poor migrants, and seasonal unemployed agriculture labour are all needed in the surrounding manufacturing and construction industries. Small and medium-sized businesses can help achieve this goal by creating jobs.
- **Aesthetic:-** Architectural finishes cover a large variety of structure, designs components, it gives pleasant appearances. Architectural control on public/semi-public buildings, historic, ancient buildings etc.

### New Vision of the Satellite city:-

- Climate change and Green policy
- Sustainable Development and Financing sources

### Problem Statement:

The urban areas of countries like India irrespective of their sizes have been under constant pressure from growing population and subsequently their various social-economic demands. As a result of this pressure, residential areas, commercial areas, services, infrastructure, and public buildings are being expanded in a haphazard and unplanned manner. This type of expansion gradually expands and sprawl over the limited spatial extent of urban areas, thus occupying agricultural as well as open lands lying at the outskirts. These dynamics in the growth of the urban areas, in all the corners of the country today, are paradoxically making most of the Indian cities to reel under the problem of infrastructure collapse and its subsequent implication on the urban dwellers.

This type of growth called as urban sprawl, is not of sustaining nature and takes into its grasp the existing green cover and letting the area to become more susceptible to the recent variations of climatic variables that have been observed during the recent decades. Whereas there the days during Mohenjo-Daro civilization that city planning was so scientific that it formed the fundamental of the modern urban city planning system. Taking this glory, our country treated a history of a planned civilization, but as time passed by, it's started to loss its lustre with growth in urban migration and population pressure on the cities and metros. The cities and metros

happened to be landed of up in the haphazard mix as a residence started to mushroom and gave no space and time for plan cities to creep in. Cities are getting crowded because of the variety of business and social opportunities offered to the people. Due to increase in population density and intensive construction, open spaces children can use are decreasing.

## II. LITERATURE SURVEY

[1] **Annapurna Shaw**, "Satellite town development in Asia: The case of new Bombay, India (1995)" The original goal of the city in this paper was to create a self-contained counter-management to the old city. With strong commuting link to old city such an outcome is unlikely even in future. Also, should suitable for linking to the old city by railway in future under a development of Gov.

[2] **Mr. Ashish Upadhyay**, "A real time study for a town planning scheme. (2003)" These Papers deals with the land classification in town. Using RS and GIS can help in following manners:

- Computerization of records (through RS and GIS, old surveys) help an easy access to each Govt. Department as well as to common people, as well updating record simultaneously on in conjunction with drawing is possible.

[3] **Dr. Avanti Bambawale**, "Design Concept of New Urbanism for Planning Second Renaissance in Developing Fringes of Metropolitan Cities: Case Example of Pune, Maharashtra, India. (2017)"

- Pune's landscape exposes a mix of kuccha and pucca elements, alternated with authorized and unauthorized structures, as the new country approaches.

- Modern Pune's urban sprawl and built up development is controlled by theoretical rules or mechanisms of floor space index. However, in practice they are blatantly ignored.

- The existing planning policies of development rules and implementation need to be modified.

- The reality is that there is serious mismatch between socio-economic structure and the speed in which inward migration outgrows infrastructure.

[4] **Mr. Isher Ahluwalia**, "Planning of Urban Development in India." The study of achievement of rapid growth that is both inclusive and sustainable, presents formidable challenges for urban planning.

- Limitation of floor space index.

- Integration of transportation and land use: A good road network, combined with an efficient public transportation system, helps cities improve their "working efficiency" by reducing commuting costs, travel time, traffic congestion, and pollution.

- Economic planning of town and study of land use planning and transportation.

[5] **Shahneez Haseeb**, " Satellite Cities Of The Twentieth Century: A Sustainability Analysis Of Milton Keynes And Reston, May 2017.

- Infrastructure planning with all technical details is possible using the various base maps.

- Property details (buildings type, no. of dwelling units, area, density pattern over a particular area, taxation and payment information, etc.) are easily retrievable.

[6] **Jerome Pratter**, " Legal Implementation of a Satellite City Plan: The Planned Disposition of Public Land, January 1969.

- It is hoped that this article has given further impetus to the idea of developing the Penal Farm as a satellite community. In this case study to explore the often neglected, yet critical, problem of implementation of the planner's objectives. Clearly, if programs such as the Penal Farm sub city are undertaken, the legal and governmental systems must be made flexible enough to accommodate completing such developments. The process planning technique may offer a means of organizing the public-private effort which the Memphis project requires. However, the presentation of this technique in this article is not meant to slight the difficult problems which this method creates for public agencies.

[7] **Md. Mehedi Hasnat** , "Developing Satellite Towns: A Solution to Housing Problem or Creation of New Problems, February 2016.

- For a densely populated country like Bangladesh scope for new development is very limited. The developed countries with vast open spaces and even the developing countries with much less densely populated areas have the scope of experimenting with new township development. However, in a heavily populated area like

Dhaka, finding free land on the outskirts to expand the city is difficult. The government's ongoing projects are a do-or-die situation in the current situation. It would be a complete and irreversible mistake to squander the opportunity.

- As a result, it is critical to integrate land use, transportation, urban design, and local plans in order for these projects to serve as models for future development. The open spaces and bodies of water must be protected. Waste water treatment and solid waste management solutions must be implemented immediately in satellite city.

**[8] Nan Nan, Li Song,** "Research on satellite urban transportation and land spatial planning in big data environment.

- Big data important role play in urban traffic division. The accuracy and scale of big data will help designers to design and make decisions more effectively. With the rapid development of information technology, traditional data acquisition methods have been unable to meet society's demands. Big data technology has become an indispensable basic data collection and analysis.

### III. METHODOLOGY

- Based on the fact that satellite cities vary in their characteristics and conditions of development depending on the problems experienced by the mother city and the adopted policy of urban planning, this required to reply on a methodology based on the theoretical references related to urban growth in large cities, as well as published scientific researches to find out the most important case studies on the role of satellite cities in reducing the pressure on the mother city and resolving issues that these satellite cities face

#### 1) GREEN DEVELOPMENT POLICY

Guiding Principles :- The goal of the Green Development Policy is to ensure that the satellite city develops as a developed with built-in environmental sustainability so that future generations can benefit from it in the long run through participatory and inclusive economic growth based on the green development concept.

"GREEN DEVELOPMENT" is a pattern of development that reduces poverty through an inclusive economy in which resources are used efficiently and without waste, ecosystem services are supported, and greenhouse gas emissions and waste are reduced; "Green industry" is an industrial process that uses energy and resources efficiently, with reduced greenhouse gas emissions, and without harming or risking humans or the environment.



**Fig 3:** Green satellite city

#### • Strategic objective :-

Develop and implement a climate-change-aware population settlement strategy that takes into account natural resource availability and regional resilience. Reduce pollution in the air, water, and soil by implementing a better plan for urban land use, construction zoning, and infrastructure provisioning, as well as establishing a legal structure for personal responsibility.

- Waste water treatment and solid waste management solutions must be implemented immediately in satellite city.

#### 2) Land utilization :-

Understanding the rural residential land utilization characteristics in the satellite city In rural residential areas, there are many land use types, with industrial land and warehouse land being the most important, reflecting rural economic activities, particularly in some cities' industrial land areas.

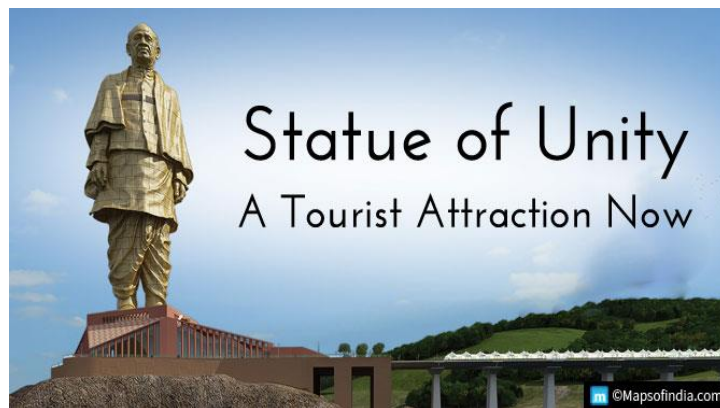
•With the growth of the rural economy, there is a need for rural residential land management and planning. Reform and development are intimately connected. In order to optimize land utilization for long-term satellite city growth. For example, parking spaces, libraries, schools, city halls, parks, theatre, and so on.

**3) Importance and benefits of artificial tourist attraction :-**

Artificial Tourist attractions contribute significantly to the tourism industry. They typically reap economic benefits of tourism. Some tourist attractions are designed primarily to attract visitors.

• A tourist attraction is usually valuable to visitors in one or more of the following areas: historical significance, cultural significance, political significance, nature, natural or built beauty, leisure, amusement, and fun.

**• Tourism environmental impact:-**



**Fig 4:** Artificial Tourism Theme

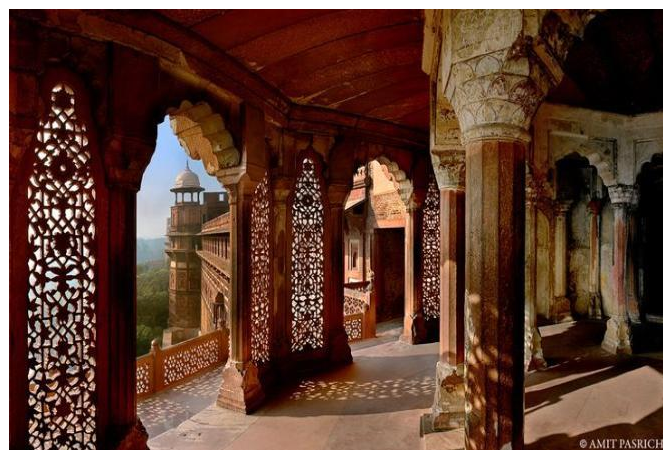
**• Unemployment :-**

- Now a days unemployment is a biggest problem of India.
- sustainable tourism development in solving the problems of unemployment and unbalanced regional growth and inequalities in income and standard of living.
- This is the opportunity help to overcome from unemployment problems.

**• Architectural characters :-**

Satellite cities have their own unique cultures, histories, and economic infrastructure. The built form has taken on a built-to-edge character, with chabutras, balconies, and verandahs responding to the street and fostering close interaction between occupants and members of the public.

Traditional residential structures are mostly ancient structures from the 18th and 19th centuries, with a few temples, mosques, and dargahs dating from before the 18th century.



**Fig 5:** Architectural Design

**4) Artificial tourism themes :-**

Artificial Tourist Attraction	Natural attractions
<p>1) A tourist attraction, also known as a visitor attraction, is a tourist destination that is frequently visited by tourists.</p> <p>2) Generally, artificial there are four main categories of tourist attractions: educational, man-made, sport, events.</p> <p>3) Examples:-</p> <ul style="list-style-type: none"> <li>• Entertainment parks</li> <li>• Wildlife attractions</li> <li>• Museums</li> <li>• Unique built attractions</li> <li>• Historical attractions</li> </ul>	<p>1) A natural tourist attraction is one that occurs spontaneously. In other words, it was not constructed by humans.</p> <p>2) The various types of natural wonders found around the world. Because of the natural attraction, many areas surrounding natural attractions have been developed for tourism.</p> <p>3) Examples:-</p> <ul style="list-style-type: none"> <li>• National parks</li> <li>• Caves</li> <li>• Mountains</li> <li>• Waterfalls</li> <li>• Forests</li> <li>• Beaches</li> <li>• Cliffs</li> <li>• Hills</li> <li>• Islands</li> </ul>

**IV. SCOPE OF THIS PROJECT**

Satellite cities serve a specific purpose to provide a perfect balance between the population and resources, with respect to environment-friendly development. There is an underlying need to develop satellite cities into satellite cities. Accommodation of population growth. Preservation of open space and utilization of land. Supplementing growth of larger cities. satellite cities gives scope to improve economical growth of city.

**V. CONCLUSION**

For a populated country like India, scope for new development is limited. The developed countries with vast open spaces and even the developing countries with much less densely populated areas have the scope of experimenting with new township development.

- The government's on going projects are critical in the current situation. It would be a complete and irreversible mistake to mismanage the opportunity. Satellite cities, when properly implemented, can help to control urbanization in city centers.
- Satellite cities, when properly implemented, can help metro cities control urbanization. To use these project methods for future development of satellite city, priority must be given to integrating land utilization, green policy, economic strength of the city, architectural design of the city, and local plans.
- The preservation of open spaces and water bodies is essential. The satellite city must incorporate a long-term wastewater treatment and solid waste management solution.

**VI. REFERENCES**

[1] Annapurna Shaw, "Satellite town development in Asia: The case of new Bombay, India (1995)"

[2] Mr. Ashish Upadhyay, "A real time study for a town planning scheme. (2003)"

[3] Dr. Avanti Bambawale, "Design Concept of New Urbanism for Planning Second .Renaissance in Developing Fringes of Metropolitan Cities: Case Example of Pune, Maharashtra, India. (2017)"

[4] Mr. Isher Ahluwalia, "Planning of Urban Development in India.

[5] Shahneez Haseeb, " Satellite Cities Of The Twentieth Century: A Sustainability Analysis Of Milton Keynes And Reston, May 2017.

[6] Jerome Pratter, " Legal Implementation of a Satellite City Plan: The Planned Disposition of Public Land, January 1969.

[7] Md. Mehedi Hasnat, " Developing Satellite Towns: A Solution to Housing Problem or Creation of New Problems, February 2016.

[8] Nan Nan, Li Song, "Research on satellite urban transportation and land spatial planning in big data environment.

- [9] Md. Shamsul Hoque, "Developing Satellite Towns: A Solution to Housing Problem or Creation of New Problems."
- [10] Saswat Mishra, "GIS And Auto Desk Modeling For Satellite Cities around Bhubaneswar."
- [11] Hasintha Nawod Kalpana , " Measuring Urban Sprawl Of Small And Medium Town Using GIS And Remote Sensing Techniques: A Case Study Of Sri Lanka.
- [12] H.S. Sudhira, "Urban sprawl: metrics, dynamics and modelling using GIS.22 April 2003.
- [13] Dr. Pragnya Paramita Jena, "Urban Growth And Climate Change. A Study Of Context Of Bhubaneshwar City Of Odisha.
- [14] Christopher D. Johnson,"Legal and Regulatory consideration of small satellite Project"
- [15] Prof.Saswat bandyopadhyay:Planning support to 8 satellite town of the indian megacities for preparation of CDPs under the gol scheme ,"urban infrastructure development in satellite towns of million plus cities"
- [16] Gerben J. N. Bruinsma (Jan 2007) Urbanization and Urban Crime: Dutch Geographical and Environmental Research.
- [17] Irena Bacliija (Dec 2011) Urban management.
- [18] Baba amini (1996) Urban Development plans formulation & implementation.
- [19] T V Ramachandra february 2004, Urban sprawl: metrics, dynamics and modelling using GIS.
- [20] Ashish Upadhyay (december 2003), ROLE OF HIGH RESOLUTION IMAGERIES FOR MICRO PLANNING - A CASE STUDY ON BUILDING TOWN PLANNING SCHEME.
- [21] Prof. Dr. Foued Benghadbane March-April 2020 " The Influence of Mother-City Urban Planning on Satellite Cities: A Case Study of Constantine, Algeria.
- [22] Environmental and sustainable aspects of green building: 2019 F Çiner<sup>1</sup> and N Doğan-Sağlamtimur<sup>1</sup>.
- [23] National Building Code (NBC)
- [24] Maharashtra Regional and Town Planning Act, 1966 (MRTP)
- [25] Development Control Rules of PMC (DC Rule
- [26] (fig 1 ): (Reference :- <https://images.app.goo.gl/Rd2HbG8BEEMLZtDr8>)
- [27] (fig 2 ): (Reference:- [https://en.m.wikipedia.org/wiki/Satellite\\_city](https://en.m.wikipedia.org/wiki/Satellite_city))
- [28] (fig 3 ): (Reference:- <https://images.app.goo.gl/7JL5Mnq3mHXtoDDG6>)
- [29] (fig 4 ): (Reference:- <https://images.app.goo.gl/7XsiXqC8d7kDEFtQA>)
- [30] (fig 5 ): (Reference:- (<https://images.app.goo.gl/KfMc1hb69ARjpPck8>))
- [31] D.W.Gawatre, "Advantages of Green Building", International Journal of Scientific Research. (IJSR) Volume 2 Issue 4 April 2013 (ISSN:2277-8179).Pp 68-70.