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Fringe area transformation of historical Satara village at Aurangabad city

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ABSTRACT

Rapid Urbanization has led to the expansion of cities with changing land use and occupation. These changes have transformed the city hinterlands into Fringe areas / peri-urban settlements. In India, city fringe areas are largely neglected in policy and practices (Randhawa and Marshall, 2014) as they do not belong to any municipal limit and therefore migrants find it easy to settle in these areas. These Fringe areas face serious problems due to inadequate land-use planning and governance. The aim of the research is to study the transformation of historical settlements in fringes of Aurangabad city. By detailed studying the settlement history, character and land use pattern, issues and challenges are listed. Based on these listed Issues, the paper highlights the Solutions and Guidelines for the cautious development of these Fringe areas.

Keywords– Fringe area, Urbanization, Transformation, Urban growth, Issues, Governance

1. INTRODUCTION

India has been experiencing phenomenal urban growth within the previous couple of decades, with its million-plus cities rising from 23 in 1991, and 35 in 2001, to 53 in 2011 (Census of India 2011). The share of person living in urban areas rose by 3.35% in the decade 2001 to 2011, and 2.10% in the decade 1991 to 2001. (Census report, GOI- 2001). People migrating to cities for economic activities are unable to live in cities due to high cost of living. So, they settle along the periphery of the city known as 'Fringe area' or 'Peri-urban area'. Typically, Fringe areas can be located at the borders of the built-up area at the urban outskirts and appear to comprise a fragmented pattern of settlement of lower density and urban clusters around transit hubs. These expansion results in transformation of land use and occupation on the city fringes.

Fringe areas have multiple meanings associated with them. The general characteristic of the many different forms of space that are called city fringes is that they are spaces of transformation with a certain degree of urban and rural interconnection.

In India, Fringe areas play different roles for different people. A Poor find it easy to settle in these areas and acquire land to perform agriculture. Middle class people find these areas as a good place for big houses with personal open spaces. The local government use these areas for waste dumping, landfills, airports and also for noisy & toxic industries. Industries see it as a source of materials like brick clay, sand & gravels, limestone, etc. The environment enthusiast considers fringe areas as a valuable land of eco-system. These consideration of various people about fringe areas has led to the mismatching of the land use in the urban outskirts all over the India.

A number of departments, including Nagar Panchayats, Panchayats, Town & Country Planning Department of State Government District Administration, MPC's, DPC's, Development Authorities, govern the development in the Fringe area. These bodies are not clear with the role and responsibility of city peri urban areas. Such bodies lack certainty about their position, which leads to confusion and mis-coordinating.

These lack in urban governments which give rise to low quality of life, as the panchayats are not capable to deal with the changing characteristics that are caused by urbanization. This unplanned development thus leads to various issues i.e., lack of Infrastructure, services, open spaces, reduced agricultural zones, poor mobility, pollution and slum like settlements.

The objective of this research is to highlight the urban issues which settlement face in these areas due to city expansion. As city fringe areas has more potential to play a positive role in urban growth. Cities all over the world are facing challenges which urban

sprawl face due to urban expansion. As this Urbanization process is continuously growing through following decades. Therefore, there is a need of attention for the Fringe area development.

The goal of this research is to foreground the theoretical clarity about the ground realities of existing fringe areas settlements. The comprehensive study and analysis of problems and then provide a practical solution to these problems.

1.1 List of Fringe area Issues

All over the world, there are enough evidences to prove that city fringe areas are under great pressure of transformation due to urbanization. These transformations give rise to various issues in these areas which are listed below:

i. Disintegrated growth

Non regulated growth is seen in the peripheries of the cities due to absence of local governing bodies. These growth fails to fulfill the building safety norms/ byelaws. The local governing bodies are not equipped to control such violations which further leads to complications in future development. Such lack in planning encourage people for illegal constructions. There are cases of private builders and developers creating colonies in these areas.

ii. Land Use Change

Such non-regulated and illegal growth eats up the vacant and agricultural lands. Private builders convince the farmers to sell their land on low rates and built colonies over there for their profit. Such constructions leads to shrinking of agricultural lands. This land acquisition has a great impact on change in occupation of the people. Such change in land use also disturbs the food chain of the city. Poor people also acquire by building their shelters on vacant lands near their work places

iii. Slum Like Condition

People settling on vacant lands near the work places does not get any basic services and infrastructure. Peri urban localities try to fulfill (provision) their basic needs of water by digging bore wells and sanitation needs by creating naala or septic tanks. These bore wells has created imbalance in the underground water table. Open drains and waterlogging become breeding ground for mosquitoes leading to health hazards to the population.

iv. Poor mobility

Poor mobility is also one of the consequences of Improper settlement. Roads of these areas are usually are of poor quality i.e. no dividers, potholes and also no pavements for walking. The connectivity between the city and peri urban area lacks in transport facilities which forces people to use private vehicles. Increase in number of motors on road causes traffic congestion and also air pollution.

2. TOPIC RELEVANCE

Globally, Urban cities are under pressure due to urbanization which are leading to fringe area transformation. Various researchers have been working on it to attract the attention of the government and planner. As fringe areas are usually neglected by the municipal corporation or development authorities. Thus, these areas face various urban issues i.e. lack of Infrastructure, services, open spaces, reduced agricultural zones, poor mobility, pollution and slum like condition. These issues led to effect the environment and public health. Therefore, there is an urgent need to look upon the issues and provide a necessary solution to it.

3. AIM AND OBJECTIVES

The Aim of this research is to understand the fringe area transformation issues & challenges of Historically settled Satara village due to Urbanization, and also providing solution to overcome these Challenges. The Objective is to study the dynamics of city fringes, its urban growth patterns and also identify the issues and finally outlining the solution proposals.

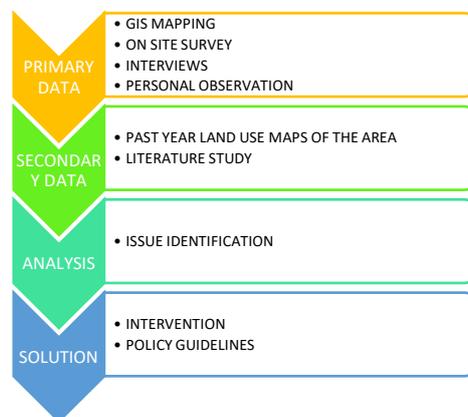


Chart 1. Methodology flow chart

4. METHODOLOGY

The research highlights the Theoretical framework of Fringe areas. The paper focuses on site study and comparative research, GIS mapping, quantitative data gathering and analysis along with interviews of fringe area residents and government authorities. Starting with the Theoretical definition of Fringe areas and choosing the best site accordingly. The site GIS mapping will be conducted to study and analyze the land use of the settlement. Quantitative data will be gathered through primary data from questionnaires and personal observations. Secondary data will be collected from literature study. Comparative analysis will be done using the satellite

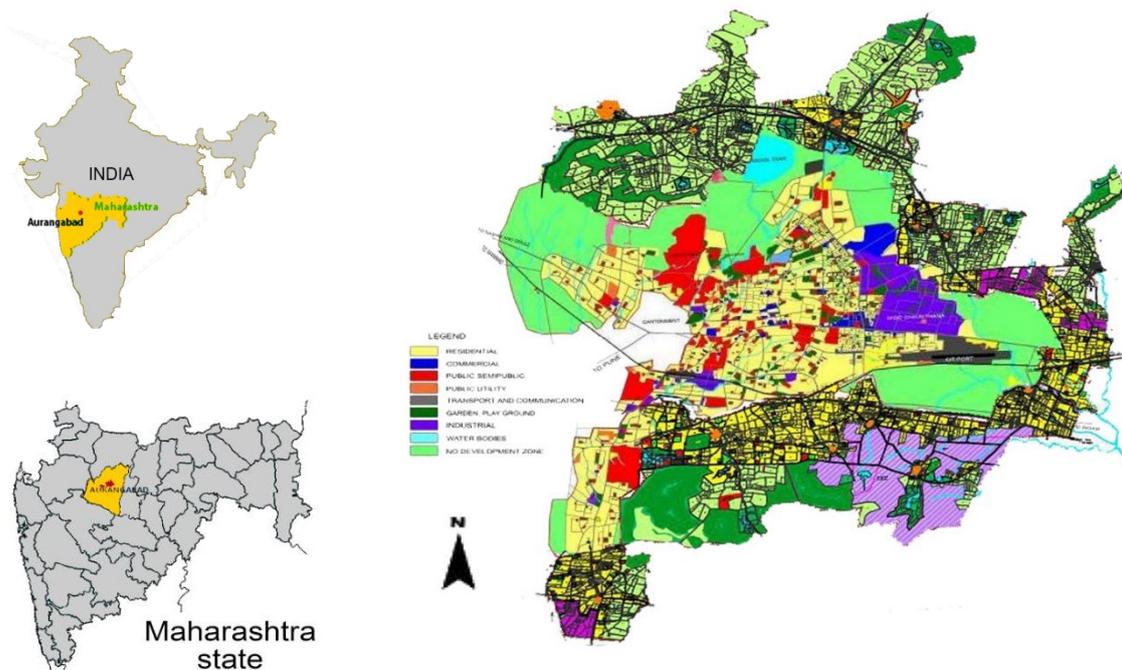
data of past years to understand the settlement growth pattern. After analyzing all the gathered data, issues will be identified. According to the issues, design and policy solutions will be proposed at individual and area level.

5. BACKGROUND OF AURANGABAD CITY

Aurangabad city is the capital of Marathwada region located on the banks of Kham River of Maharashtra state. The city was found by Malik Ambar in 1610 initially known as ‘Khadki’. Aurangabad is also tourist capital due to its rich art and Architecture, city is also known as ‘City of Gates’.

Geographically, the city stands in the Dudhana Valley between the Lakhwaras range on the North and Satara hills on the South, generally spreading within 16 Kms. Aurangabad city is fast developing into a major educational, commercial and industrial centre of the Marathwada Region and it is estimated to have a population of about 12 lakhs today (Report for Draft Development plan of A’bad,2006).

The population of Aurangabad is presently expected to be 1,599,927 in 2021. Aurangabad had a population of 65,453 people in 1950. Since 2015, the population of Aurangabad has increased by 41,515 people, a 2.66 percent yearly increase. The current version of the UN World Urbanization Prospects provides these population figures and predictions. These figures indicate Aurangabad's urban agglomeration, which generally includes the city's population as well as nearby suburban regions.



Map 1. Aurangabad city
Source- Aurangabad Municipal Council

Considering the city rate of urbanization, fringe areas were under pressure. To map these growth Govt. of Maharashtra appointed CIDCO as the Special Planning Authority for Aurangabad fringe areas. The Aurangabad fringe region spans around 16,397 hectares and is comprised of 28 villages located outside of the Aurangabad Municipal Corporation. Comparing the population & area density of all 28 villages, Satara has the highest no of growth rate with Residential area dominantly.

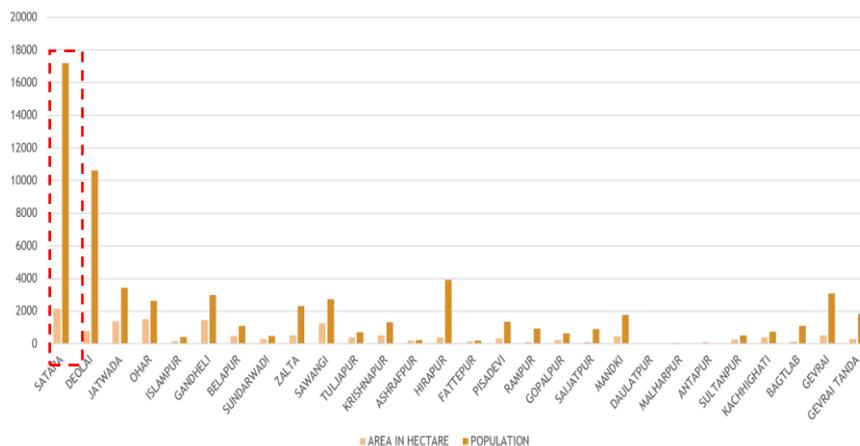
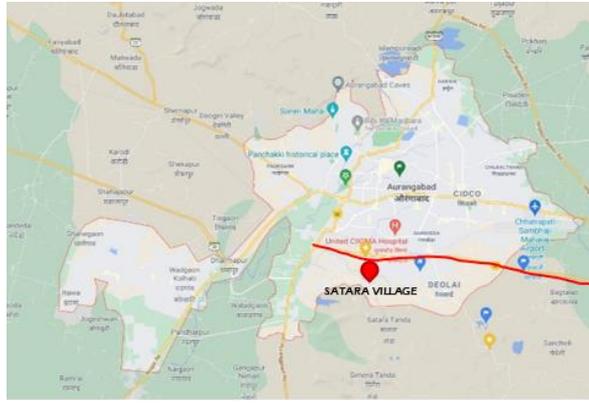


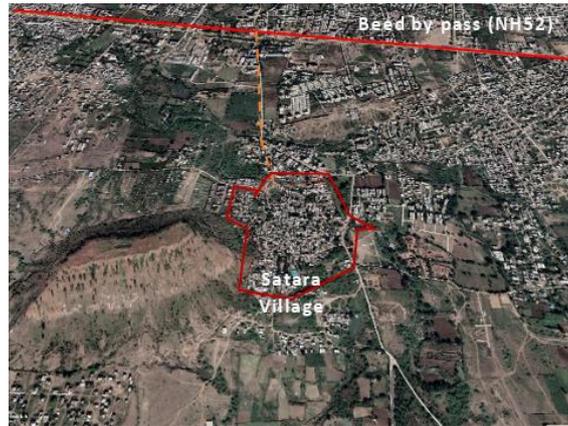
Chart 2. Population & Area Ratio of Fringe area Villages
Source- Author



Map 2. City map showing Satara village location

6. ABOUT SATARA

Satara is an Ancient village located in the southern part at a distance of 8 Km from Aurangabad city. Village is spread in 45 Acre of land with One tree hill on the south-west side. Satara has short & easy connectivity through roads to city Transport system, but no transport system caters it. Beed by pass (NH 52) passing near it has acts as a major mode of connectivity and also reason for rapid urbanization in this area. It has a total population of 9065 in which, 4725 are male and 4340 is female population (Census 2011). The village has a Ancient *Khandoba temple* which is 500 yr old and which is listed under ‘*Maharashtra Ancient Monuments, Archeological site & Remains act,1960*’. Khandoba Temple is the famous tourist spot and also major reason of this village settlement.



Map 3. Satara Village connectivity with NH52

Source- Google maps

Satara is a famous tourist spot due to Khandoba Temple and One tree hill beside its. Jatra is also been carried out for 9 days in the month of December. Around 5 to 7 lakhs of Pilgrims visit the temple during this time period. Khandoba Darshan and Rituals are performed by the pilgrims and full night Jagran is carried out. On the 9th day Palki yatra is carried to Dandekar wada in morning and back to temple at Night. Due to Beed by pass National Highway, city is growing more in this direction compared to other villages in city fringe. Slowing the farmlands around the village has been swallon up by the buildings and cosidering the rate of growth, the reamaining farmlands will also vanish in next 10 yrs. Soon this village will also be the part of city loosing its original Identity.

7. SITE STUDY AND DOCUMENTATION

Satara area existing Land use and other building maps were compiled and studied through GIS Mapping technique. This map was generated to Understand the land use pattern of this area. In Satara 55% of land is under Residential use and 10% is open space with 10 % roads and Mix, commercial, amenities and other types are below 5% area. Various layers of Building Type, Typology, Height, Age and Condition were studied. Building Type & Typology is to study the no. of old building type (Wadas) present currently which can be restored or demolished. Building Heights map for analyzing the Building byelaws followed or not as Satara Belongs to Gaothan area was also compiled. Existing Drainage & water lines were also marked to study and help make sure services reach every structure. Detailed Documentation of Monuments i.e. Khandoba Temple & 2 Baroi was done to understand the Existing condition and scope of Restoration.

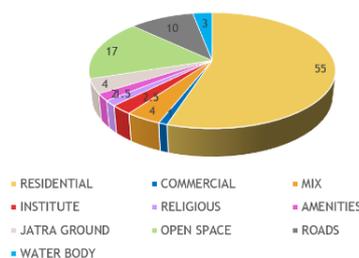
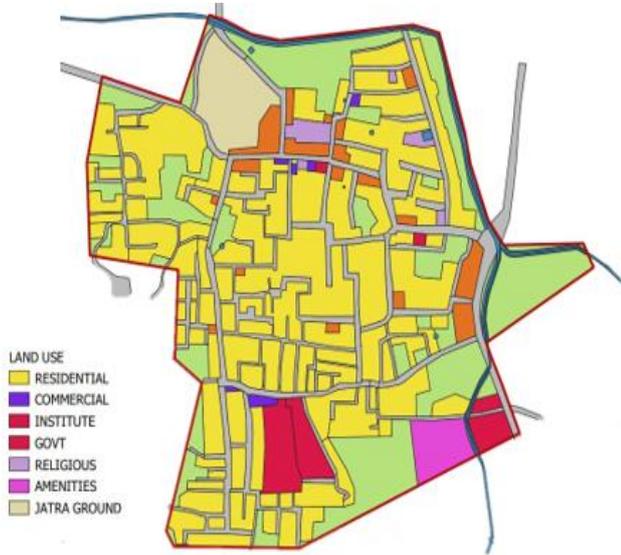


Chart 3. Existing land use pie

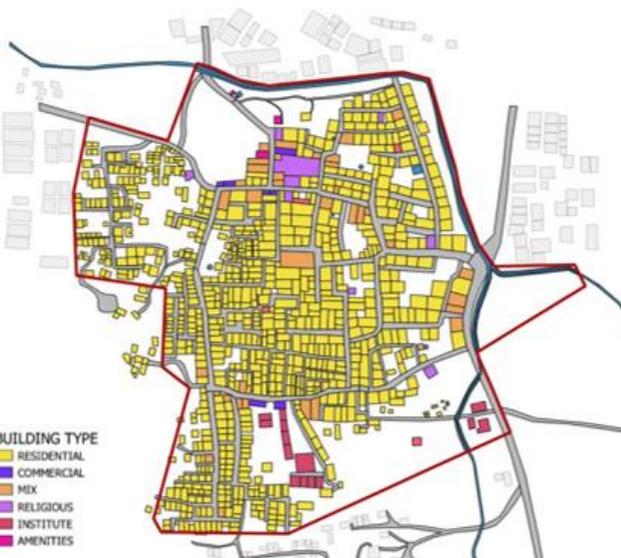
Source- Google maps



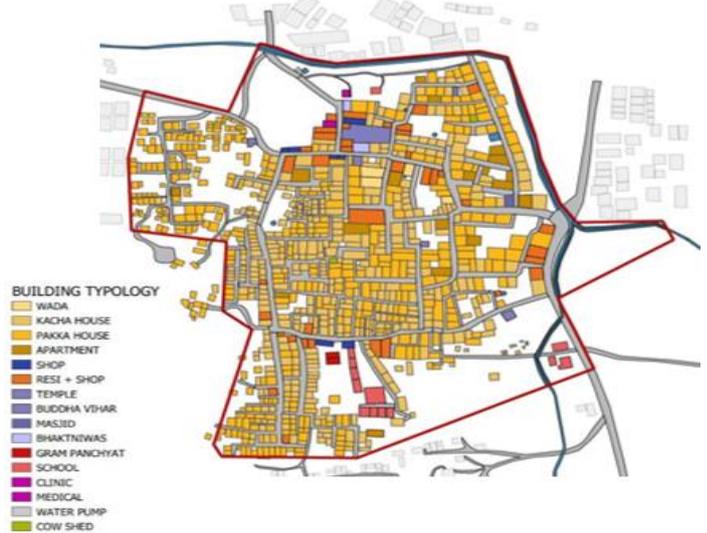
Map 4. Satara Existing Land use



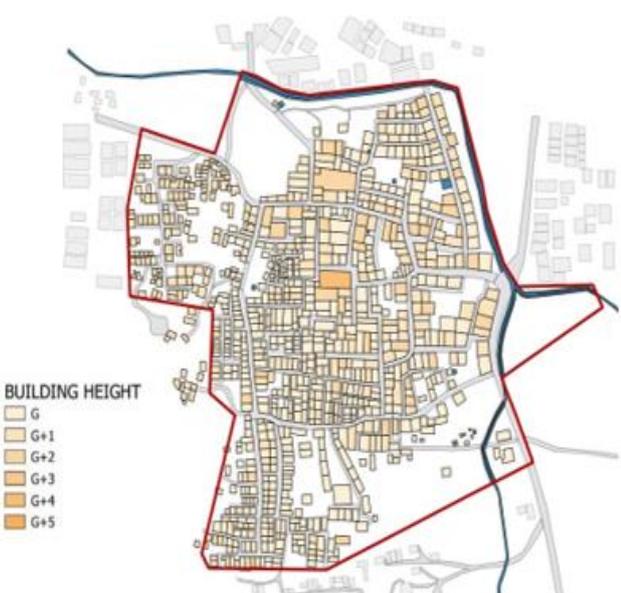
Map 5. Road Networks



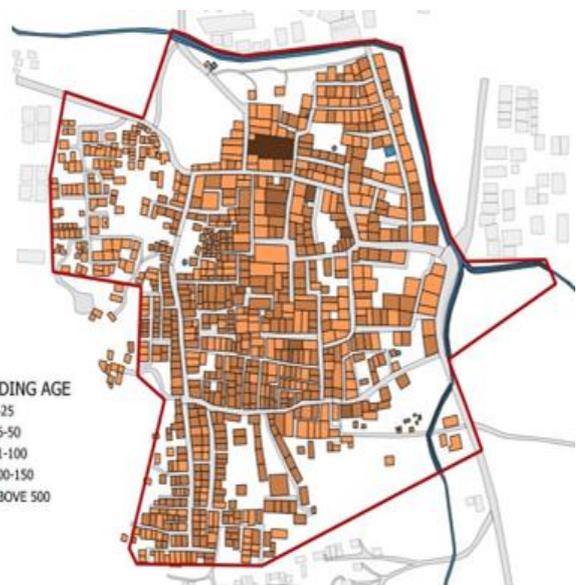
Map 7. Building Type



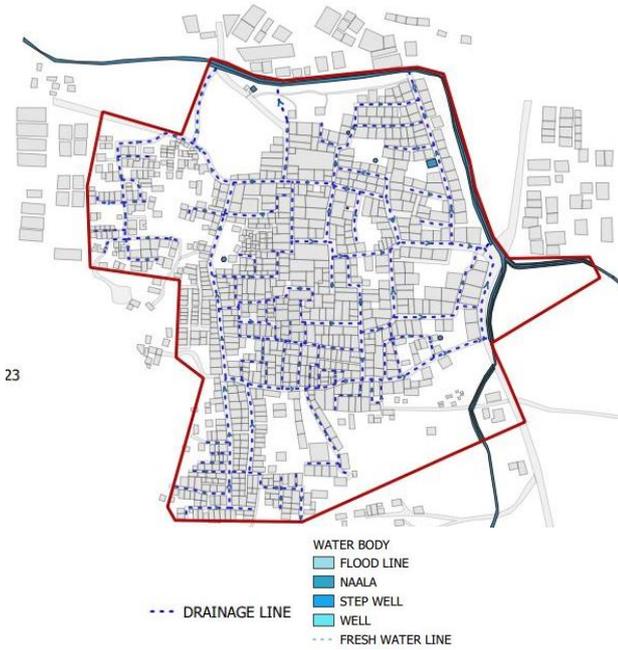
Map 8. Building Typology



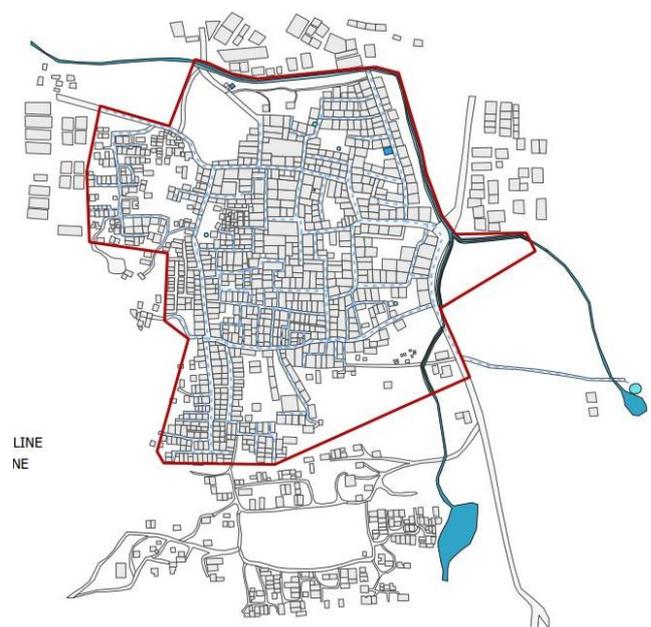
Map 9. Building Height
Source- Author



Map 10. Building Age
Source- Author



Map 11. Existing Drainage Line



Map 11. Existing Water Line

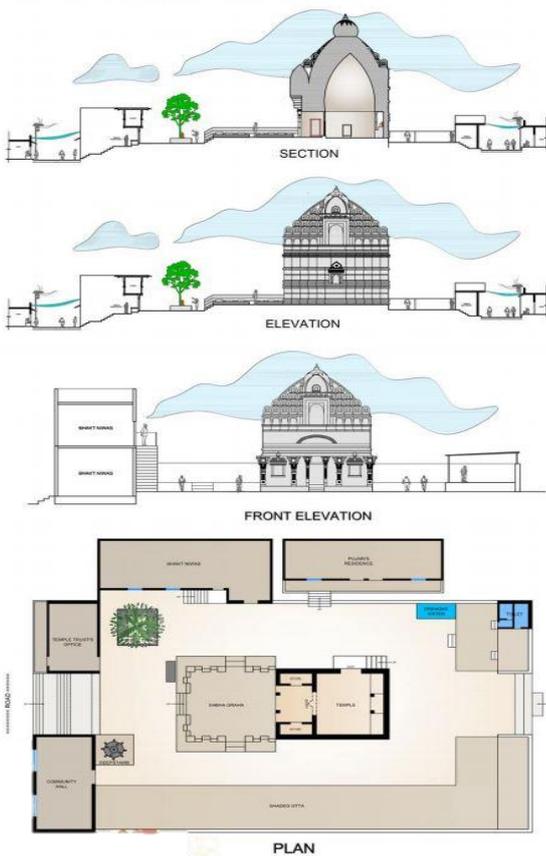


Fig 1. Khandoba Temple
Source- Author

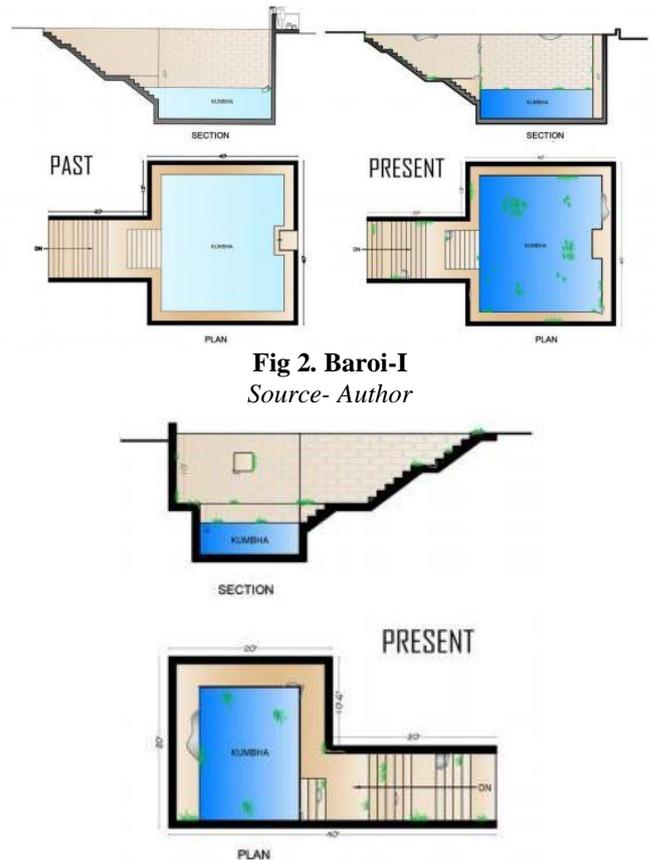


Fig 2. Baroi-I
Source- Author

Fig 3. Baroi-II
Source- Author

8. ISSUES AND CHALLENGES

8.1 Lack of Maintenance

- Due to lack of Proper Maintenance, Temple plinth and Deepstamb in poor condition.
- The 2 Baroi Loacted in front and back of the temple has lost its connection with the temple due to residencial growth around it.

8.2 Missing Building Guidlines

- Missing building Guidlines creating conflicting scenarios between old wada and new modern buildings.
- No temple precinct guidlines followed making temple hidden behind the buildings.
- No. specific Building height, setbacks & projection guildlines.
- Hanging hoardings & wires around the Temple precinct make space look shabby.

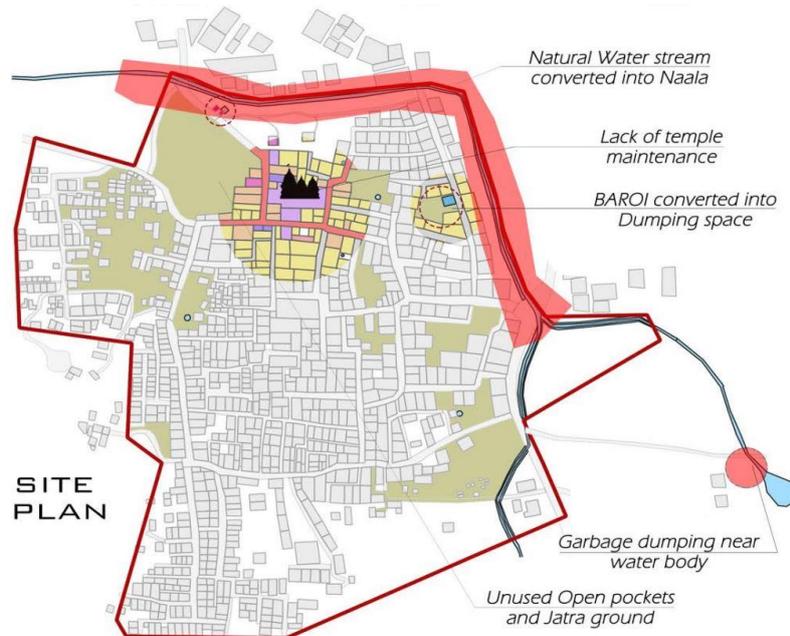
8.3 Unplanned Settlement

- No Public spaces i.e. public park and market spaces.
- Unused Vacant spaces.

- Jatra ground is used as dumping ground by locals.

8.4 Roads and Services

- Village does not have any tar roads only Murum roads can be seen with uneven road widths and bad condition
- Unorganised vehicular and pedestrian traffic creating chaos around temple precinct
- Even Drainage & water lines are laid throughout the village, still they are not in service.
- Water stream running around the temple boundary has converted to Naala due to Drainage line outlets in it.
- No proper Garbage collection method making people through garbages on near Baroi and vacant lands.



Map 12. Satara Village map with highlighted Issues

Source- Author

9. DESIGN SOLUTION AND INTERVENTION

Some Planning policy and Guidelines has been listed specific to the site issues which can help in guiding and improving the Development of the satara village.

9.1 To conserve and enrich the cultural assets-

- Restoring the Temple structure and Deepstamb.
- Restoring the step wells (Baroi) and creating public space around it.

9.2 To improve visual experience and legibility-

- Proposing building development guidelines for controlled development. By creating height restrictions and form zonal based laws for temple precinct development.
- Creating visual corridor for the visitors of the temple.
- Detailed Guidelines for building height, Facade, setbacks, parking and projections will also be provided.

9.3 To create a village level recreational space-

- By Utilising Jatra ground into public park, weekly market and recreational space.
- Converting small open pockets into green pockets for social gathering activities.

9.4 To preserve the natural water stream-

- By treating the existing naala and proposing a separate sewage line towards kanchanwadi STP, will help stream water purification.
- Treating of Baroi water and making it open for public use.

9.5 To fulfill infrastructural demand-

- Creating guidelines to avoid further water impurity and wastage.
- Improving the road quality and proposing tarroads throughout the village.
- Segregating vehicular and pedestrian traffic within the temple streets.

9.6 To empower village community and create awareness-

- Providing further commercial and alternate economic activities.
- Conducting awareness programs related to temple structure conservation and skill.

10. CONCLUSION

Fringe areas in India are one of the most active areas in the country, and they require immediate attention in order to comprehend the dynamics of urbanization and urban change. Policy practice and planning go hand in hand in order to improve quality of life in these regions as well as tackle urban infrastructure challenges in future cities. Special attention to be given to such old settlements by the governing body to help them easily merge in the urban fabric without losing its character. Solutions established through this research enquiry and followed design intervention envision to incline the existing situations towards a hopeful future, with better

functioning and management of fringe areas. Once implemented and monitored for performance, this solution can be proposed prototypically for the other Historical settlements in the city Fringes for the upliftment of and transformation from rural to urban areas.

11. REFERENCES

- [1] Manita Saxena and Suman Sharma, "Periurban Area: A Review of Problems and Resolutions," *International Journal of Engineering Research & Technology*, 4 (9), September 2015
- [2] Report of Draft development plan of Aurangabad Fringe area (MR & TP act , 1966)
- [3] Raju. U. Kharat; Kalpana. R. Kamble; & Dr. Parag. A. Khadke, "Geographical analysis of Population growth and Urban Expansion of Aurangabad city using Geoinformatics" , *RESEARCH REVIEW International Journal of Multidisciplinary*, 3(9), September 2018
- [4] Mrinalini Goswami, "Conceptualizing peri-urban-rural landscape change for sustainable management", *The Institute for Social and Economic Change*, Bangalore
- [5] Neha Goel, "Dynamic Planning and Development of Peri Urban Areas: A Case of Faridabad City", *Institute of Town Planners, India Journal* 8 - 3, July - September 2011, 15 – 20
- [6] Rumi Aijaz, "India's Peri-Urban Regions: The Need for Policy and the Challenges of Governance", *ORF Issue brief*, Issue no. 285, March 2019
- [7] L. Sun, C. Li, J. Gwilliam & P. Jones "Challenges to sustainable peri-urban settlement development in China: an analysis by empirical evidence in Tianjin", *School of Architecture, Tianjin University, China & Welsh School of Architecture, Cardiff University, UK*
- [8] Fiona Marshall, Jonathan Dolley, "Transformative innovation in peri-urban Asia", *Science Policy Research Unit (SPRU), University of Sussex, Falmer, Brighton, BN1 9RH, United Kingdom; 2011*