

GIS in Heritage Conservation & Management

Narsingarh: A Case Study



Anusha Saxena



Ritika Mandhyan



Ankur Dwivedi

anusha020389@gmail.com 09981835399
mohi.mnd@gmail.com 08878151141
dwivediankur89@gmail.com 09713091095

Students, B. Planning, Maulana Azad National Institute of Technology, Bhopal, India

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BRIEF BIOGRAPHY – ANUSHA SAXENA

I am a student undergoing graduation in Planning from National Institute of Technology, Bhopal, India. I have keen interest in the field of urban planning. My article on Role of JNNURM in helping modern India was published in ITPI newsletter June 2009 edition. I have worked under projects like Socio-Economic study of slum dwellers in Bhopal- project under UK Government, Impact Assessment of JNNURM on Bhopal, Performance Assessment System (PAS) for water supply and sanitation in Maharashtra. I like to engage in social activities and help the needy. I feel that GIS can bring a revolution in the field of Planning and Management.

INTRODUCTION

Narsingharh is a small quiet town in the Rajgarh district of Madhya Pradesh. The town of Narsingharh stands picturesque in a valley, enclosed by hills, encircling a very fine lake, excavated by ParasRam. Narsingharh lies on NH-12 (Jabalpur- Jaipur). Located at 23°42'N 77°06'E 23.7°N 77.1°E it has an average elevation of 483 meters. Located in the central part of India in Malwa plateau this city has uneven elevation and has small hills within its boundaries. As of 2001 India Census, with a population of 27,657 Narsingharh is like a small paradise for the visitors

The desire of people for total renewal has and is continuously destroying the urban heritage seriously, which has especially led to the diminishing of historical district space. It is urgent to protect and reutilize the urban heritage effectively. Sustainable development is a significant goal in urban planning, and it is considered that urban heritage conservation is an important content in sustainable development. Facts show that taking diversified methods for conservation, renewing selectively with the banishing of total renewal, and endowing urban heritage with new use are effective means for realizing sustainable development

HISTORY

The state of narsingarh was formed by Paras ram, its first chief, in A.D. 1681, on the site of the village of Toplia Mahadev. During the 17th century the two states of rajgarh and narsingarh were linked as the chief of two settlements were brothers i.e. Dudaji and Udaji. In 1681 an actual division of territory took place, and Paras Ram, leaving Patan, his former residence, founded the town and state of Narsingarh. According to the Master Plan, the saharia tribes stayed here and made baskets in 1861. The reason for very large number of temples in the town is the queens' demand for separate temples for each queen. Several temples were built by the members of the former ruling family.

PILGRIMAGE TOWN

This pilgrimage town has its own image and needs a different planning approach. This town has historical background and is sensitive where both conservation and development have their own importance. The proportion of floating population to the local residents is increasing rapidly and is mainly due to the people coming in seasonal fairs during festivals. This religious town is rising rapidly due to the inflow of money and increase in the commercial potential due to faith and religious sentiments of the pilgrim tourists. Unfortunately the spontaneous and unplanned growth is and will be in future causing civic problems as well as degrading the image of religious and natural hierarchy of the town.

With regard to urban heritage conservation, several values should be concerned on and be realized: First is for the common good. Urban heritage reflects the uniqueness and context of a zone, a city or a region. Urban heritage conservation means the protection of public wealth and common good, which is helpful to improve people's life quality, to enhance people's sense of belonging, and to evoke people's emotion.

Traditional research methods cannot meet the need of collecting, manipulating and analyzing mass data, which is just the superiority of GIS technique. A GIS-based plan will be designed for urban heritage conservation in this paper.

PLANNING AREA

The planning area was selected according to the influence area for tourism and heritage development which comes to a total of approximately 6320 hectares. Besides the usual resident population the town receives a huge influx of people every season at the time of fairs.

NEED AND RELEVANCE

Narsingarh has a unique cultural heritage. It has a vast array of monuments, temples, fort, palace, lakes, fairs, etc spread throughout the length and the breadth of the town and nearby areas. Our planning area has almost 31 heritage sites. The conservation, preservation and integrated development of the area around these temples and heritage sites provides a rare opportunity for growth and expansion of cultural tourism.

Places of interest	establishment	Description
1. Baijnath mahadev mandir(toplia mahadev)	11 th century	Historical temple. On every Mahashivratri big fair is held.
2. Chota mahadev mandir & dharamshala	11 th century	In august month every monday there is fair.
3. Shyamji ka mandir	16 th century	Historical temple, famous for its archaeological & architectural value. Yearly fair is held.
4. Solah khamb	1000 years old	Historical and archaeological value.
5. Kotra ka rajprasad	1000 years old	Historical value
6. Haji ali ka dargah	14 th century	Mama-bhanje and ghulam's mazahar, historically and archaeologically famous.
7. Bodh stupa kotra	Same period as ashoka	Famous by name of kotra bihar.
8. Narsingarh fort	1681	Historically famous built by king Paras Ram .
9. Paras Ram sagar	1681	Made by king Paras Ram
10. Jal madir	1681	Temple located in paras ram lake
11. Narsingh mandir	1681	Built by king paras ram for his deity from whom the name of the town is derived. The idol is made up of ashtdhatu.
12. Hinglaj Mata mandir	Ancient(time not known)	-
13. Charbagh	1681	Chatriyas made by magnificent marbles of kings of Narsingarh's Royal Kingdom .
14. Hanuman garhi	100 years	Made by king Paras Ram
15. Karni mata mandir	100 years	Made by king of Jaipur.
16. Vindhya parvat shreni	100 year	Hill ranges spread over approximately 57 km area, known for its natural beauty.
17. Chidikho lake	1935	Surrounded by hill range

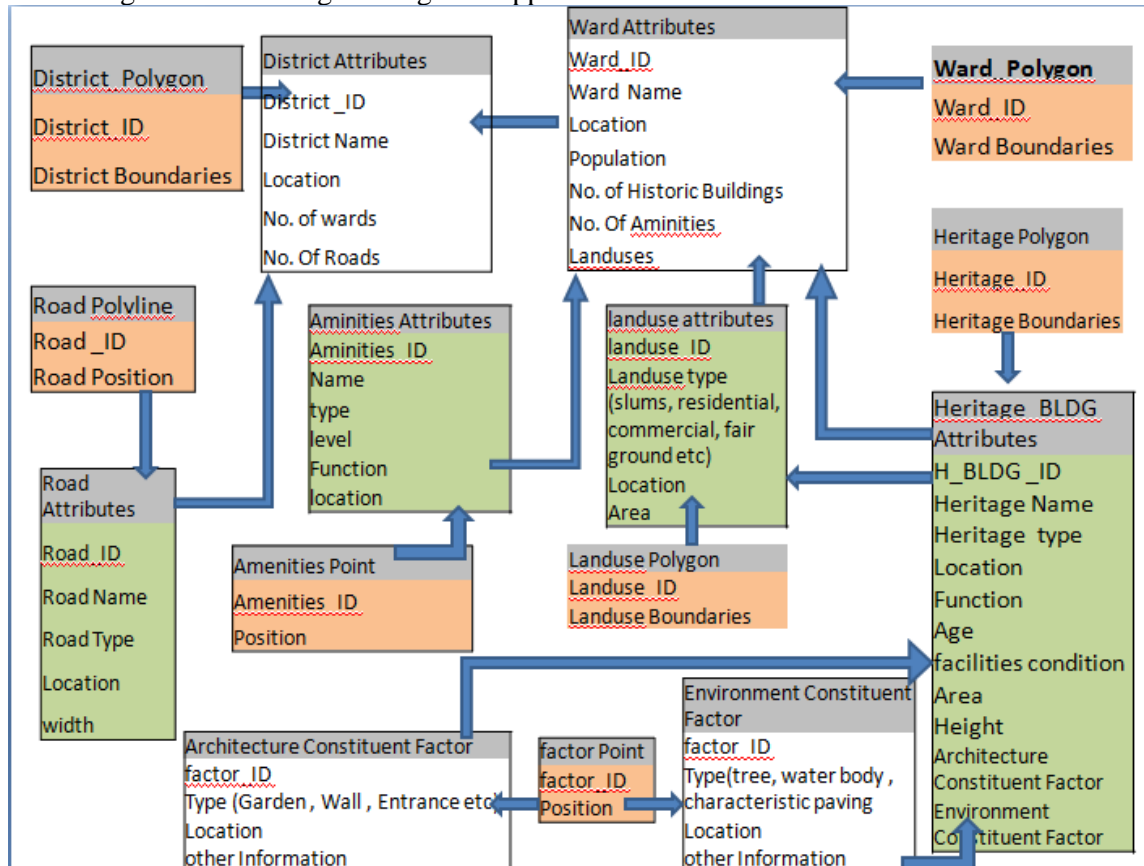
18. Chidikho wildlife sanctuary	1975	Spread over 57 km. In which may species of fauna like peacock, leopards, tigers etc.
19. Nadiya pani	Ancient	Located in forest area and suitable for sight seeing. Nadeshwar mahadev temple is present there which is surrounded by beautiful water falls.
20. Kodupani	Ancient	Known for Natural beauty. kodeshwar temple is present there and has many water falls around.
21. Churpani	Ancient	Beautiful Green field located in hill ranges.
22. Panchkund	Ancient	Two hills present face to face at 90 °, between them a water fall is there while gradually moving down along the fall there are five kund's in which first kund has warm water and moving towards last has cold water.
23. Gau ghathi	Ancient	On the way to chhota mahadev which is adjacent to a water body.
24. Kantoda hill	Ancient	Located behind the fort, known for its dense forest.
25. Kak shila	Ancient	Has a huge rock looking like crow's beak.
26. Dhuali shetra	Ancient	Foggy area near the bottom of hills which gives very magnificent look to the area.
27. Bhaisatol	Ancient	Behind the rest house ,huge round rocks are there which gives the look of buffaloes.
28. Gupteshwar mahadev	Ancient	
29. Khujur pani	Ancient	
30. Sarvdhram dwar	Ancient	
31. Jama masjid	14 th century	Near haji vali's dargah

AIMS AND OBJECTIVES

- a) To conserve the religious environment of the town.
- b) To conserve the hierarchy of elements of religious importance such as buildings, water bodies, etc.
- c) To conserve the image of the town.
- d) To conserve any further pollution and heritage degradation.

For heritage conservation we require not just conserving the built heritage but also making it feasible for the city's future. For this purpose mere conservation of heritage will not be

sufficient, its management through a combined development approach to support that heritage through tourist attraction is also required. Increase in the floating population till 2025 shall be at a rate of 0.0035 per year. This increase in the Floating Population will lead to the requirement of various factors like accommodation of visitors, housing for local people specially the informal sector, Hotels and Restaurants, Transport and connectivity, Infrastructure, Accommodation for religious ceremonies (fairs), heritage sites' maintenance, Heritage zones etc. This paper covers the factors that are required for heritage conservation and management of heritage through the application of GIS.



The model for urban heritage inventory reflects the general information about urban heritage that involves district, wards, land uses, heritage ,roads, amenities constituent factor and details of building from big to small. In the above figure, orange means entity part, while white and green represent attribute part, in which green part is the core of model including land use, historic building and roads and amenities. Generally, entity part can be used to reflect the spatial distribution directly and attribute part is useful for management, analysis and decision-making.

CONSERVATION PLAN

Heritage Zones identification -

Defining the importance of urban heritage in the socio-economic and cultural profile of the city -

- Determining the legal framework for conserving urban heritage

- Identifying the institutional set-up
- Planning the infrastructure for servicing urban heritage
- Providing a financial profile

The Conservation Plan will focus on areas identified as Heritage Zones of the city. These Zones will be co-terminus with the Wards of the city. This enables undertaking planning and making investment decisions in different areas of the city.

For purposes of preparing a Plan for heritage protection, conservation and development, it is essential to begin by recording and analyzing the role that heritage plays in the socio-economic and cultural life of the city, by using such indicators as the number of visitors, number of persons dependent for their livelihood on heritage, income that heritage generates for the city, and the like. Specifically, this component should look at the following:

- (i) Number of visitors to heritage sites and the number of visitors expressing interest in non-tangible component of heritage, and trends in the numbers over a period of five years,
- (ii) Composition of visitors i.e. domestic and foreign; pilgrims-local and from other parts of the country; age, sex and income composition of visitors and other characteristics of the visitors to the extent those are known;
- (iii) Estimated number of persons dependent for their livelihood on heritage;
- (iv) Estimated annual income generation from heritage; and
- (v) Year-round importance, or seasonal, or specific days.

Heritage is classified under two categories, viz., tangible heritage which includes buildings and physical elements of architectural and historical significance, like Narsingarh fort, temples, wildlife etc and intangible heritage, comprising movable artifacts, handicrafts, folklore, myths, legends, spirituality, traditional knowledge, rites and rituals, festive events, visual and performing arts, music, literature, language, dialects, traditional medicine, culinary traditions etc. which are intimately linked to the built heritage.

Unprotected heritage needs to be identified through a process of listing. A list of total 36 heritage sites in and around Narsingarh has been prepared. Both protected and unprotected heritage buildings and sites will be located on the town map, in relation to road connectivity and other major infrastructures.

The purpose of mapping was to identify significant concentration of listed buildings within Wards of a city. These Wards were then identified as Heritage Zones. Each Heritage Zone / Ward would form an integral part of the legal Urban and Regional Plans and the Development Plan.

A databank of heritage properties with details on the status, condition, and type of properties was prepared using GIS. The listed properties were mapped in the Town Plan in order to identify the Heritage Zones for planning purposes and were preceded with determination of the potential and priorities for heritage-related tourism

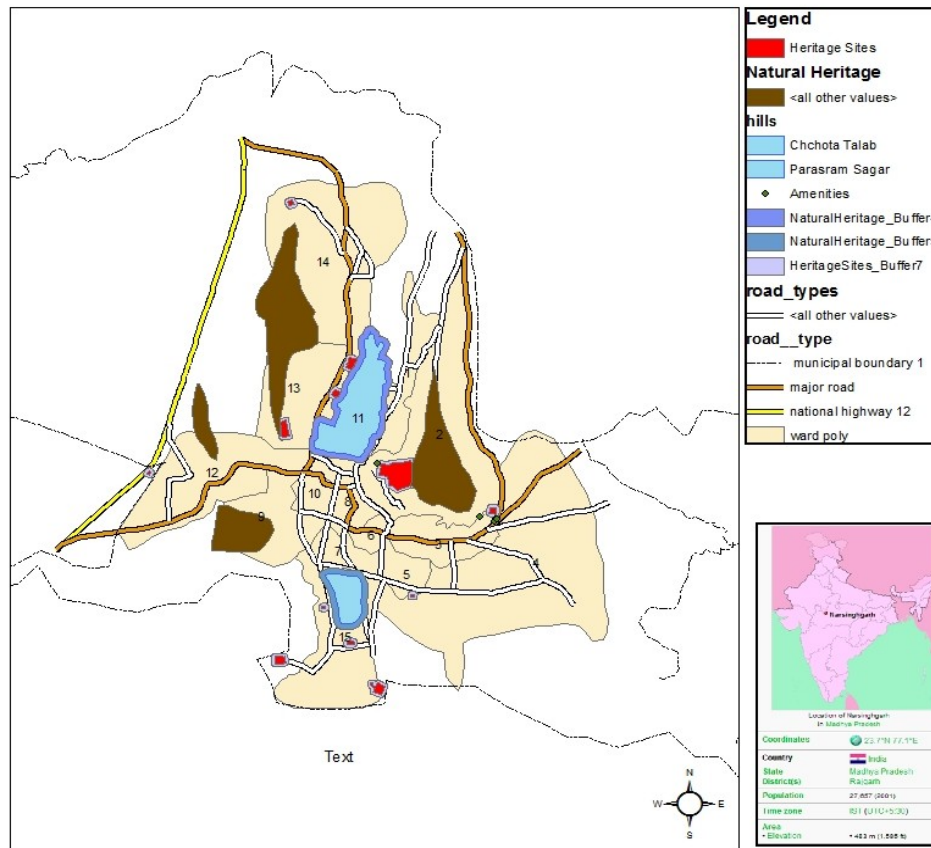
- The listing and grading of heritage buildings, heritage precincts and natural heritage of the state will always be a continuous process

- New construction activities shall be regulated in heritage precincts and alterations to heritage buildings shall be restricted, with due regard to conservation practices. Narsingarh has to give special emphasis on its buildings and natural heritages
- Identified heritage sites shall be provided with buffer of 50 meters for buildings and 100 m for water bodies representing areas to be left open for conservation of heritage, no construction activity can take place in the buffer zone
- The 264 cave paintings identified would be preserved and chemically treated to prevent them from further deterioration
- The intersection of high density areas with the buffer of heritage sites defines the shelters that should either be cleared or relocated.
- Use or reuse of heritage building is a critical issue. For heritage properties, careful adaptive use / reuse of the buildings shall be done. Such a practice can contribute to the longevity of such properties and will prevent their disuse or misuse. The fort shall be converted into a cultural hub of the town.
- Intersection of Slums with the buffer of heritage sites gives areas to be cleared that cause deterioration of the heritage due to slums.
- Sustainable heritage tourism shall be promoted. The sustenance of heritage tourism lies in conservation of heritage, whether manmade or natural.
- Height Control Zones are generated by the buffer function so that the visual and aesthetic values are maintained and conserved
- The conventional building controls ‘type designed for modern constructions’, will be relaxed exclusively for heritage buildings and precincts. If not, the rules will compel such buildings to shed the architectural features associated with them.
- Zoning regulations shall give special focus on the skyline, precinct wise architectural design vocabulary and adaptive uses and reuses. The typical land use zoning shall be avoided in heritage precincts.
- Buffer zone around the natural Wildlife sanctuary gives the restriction area for no construction zone
- The Government and other agencies shall refrain from implementing projects, which are ‘Injurious’ to the heritage precincts. Areas for no Foot over bridges, large display boards, buildings, Industries etc; which are likely to obstruct or spoil the visual quality of the heritage built space, shall be specified.
- All these suggestions need the support of a strong legislation. Appropriate provisions regulations under Town Planning legislation has to be brought in, as advised by the central government for legitimizing the above aspects.
- Sustainability will serve as a guiding star for the new policy. No one engaged, directly or indirectly, in the tourism industry will be allowed to secure short-term gains by any means. Neither over-exploitation of natural resources will be permitted



- Improvements and environmental up gradation of the protected monuments and the areas around them will be considered as a source of support for the tourism industry.
- Classification according to age of heritage buildings gives the level of need of repair and renovation
- Infrastructure inadequacies have been identified to some extent and provisions for those would be provided.

MAP OF NARSINGARH WITH HERITAGE SITES AND THEIR BUFFERS



CAMPING MELA GROUND FACILITY:

In order to provide healthy environment in the area, the following facilities are to be provided to camping sites for the pilgrims and tourists.

1. Sanitary facility (w.c. bath and refuse bins)
2. Rubbish /waste bins
3. Laundry facility
4. Site maintenance
5. Spaces for recreation
6. Circulation facilities, with well- lighted pedestrians alleys.
7. Water supply, drainage and sewage treatment including pumping station and disposal of waste from sewage holding tanks.
8. General shopping for the tourists and pilgrimages with permanent shops structure.

Total tourist arrival

45814

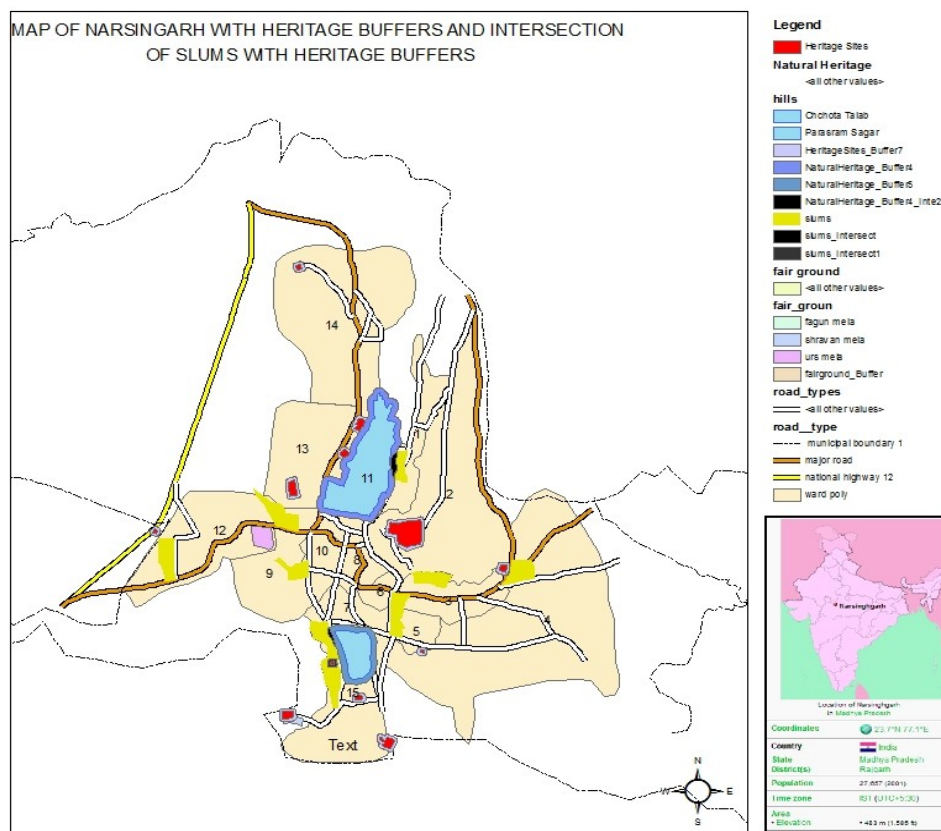
Domestic tourist arrival

2000

Peak and seasonal tourist arrival

43814

- Fair ground are majorly used during 3 months during Fagun mela(March) at Bada Mahadev Temple, Shraven Mela(July) at Chota Mahadev Temple, Urs Mela At Baba Ki Mazar. The services and amenities required as per this large floating population with their buffer zones gives their area of influence.



POTENTIAL FOR COMMUNITY BASED REGENERATION AND HERITAGE TOURISM

- This significant heritage resources are located in fast-deteriorating historic urban areas, and are threatened by over-use or inappropriate uses, property speculation, poverty of the inhabitants and inadequate infrastructure. area-level conservation, adaptive reuse, visitor interpretation and cultural tourism is significant

- Identification of mechanisms to ensure linkages between appropriate adaptive reuse and reutilization of selected heritage buildings for provision of community infrastructure, facilities and amenities for cultural tourism.

CONCLUSION

Overlaying and combining information in GIS with considerable analysis and visualization methods can provide an important contribution for the sustainable development of the historic areas. Usage of GIS for the documentation of the heritage of Narsingarh should be useful for the development of economy and tourism also. This tool can be really helpful in identifying, analyzing and managing areas like Narsingarh which have ample of scope for development through their varied natural and built heritage.

Beyond that further usage should be considered in preservation of monuments and historic buildings, in different planning procedures, in local history and education

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