

Spatial Transformations and Urban Conservation of Religious-Historic Towns: A Case of Vrindavan, India

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Abstract

The spatial transformations can be observed at different religious-historic towns of India due to urbanization. Research is based upon fact that there is substantial change in the built environment because of spatial transformations at the religious-historic towns. The process of modernization in the functions and spatial layout is unavoidable at any historic town. The study attempts to focus on various urban historic conservation components, including the look of historic buildings, their earlier uses, and its immediate surroundings to improve the built environment of historic towns. A theoretical framework for the urban conservation of ancient towns is the main objective of study. How to modernize the historic conservation function while preserving the space's texture and integrity. The research started with the investigation of the morphological growth of Mathura district, India through satellite images and in-depth study of the evolution process of street network in Vrindavan town, which is one of the main temple towns of Mathura district. There is a significant difference in the layout & architectural character of old part and the newly developed Vrindavan. Due to increased accessibility and movement, the spatial structure of traditional religious precincts, which were once local integration centres, has significantly changed. Increasing & changing mode of transportation and further increase in the religious tourism might be the cause or a big reason for the spatial transformations and correspondingly there is a challenge to conserve & preserve the religious precincts of historic towns. The study tries to analyze spatial transformations with the help of Historical GIS at different scales of urban form. Suggestive measures to conserve the environmental ambience of religious-historic towns are the outcome of the research.

Keywords

Urbanization, Spatial Transformations, Religious-Historic Town, Environmental Ambience

1. Introduction

This research examines the spatial transformations of religious-historic towns referring to the increasing urbanization primarily due to religious tourism. Large-scale modernizing alterations of old cities have quickly raised severe worries regarding their preservation (Karimi, 2000). Spatial physical transformations are due to alteration in urban functions (Surya, Saleh, & Ariyanto, 2018). It is essential to assess and comprehend the current texture in order to plan for the future and construct the ancient city cores which are going through a rapid transformation process in the current environment in a healthier and more creative manner (Günaydin & Altunkasa, 2022). The study demonstrates how religious-historical settlements develop over the course of decades or centuries as a result of human activity and, secondly, what effects human activity has on the physical structure of the city. As per Mengjia Wang historic layering can be defined as “Cities may expand or contract during history, resulting in distinct historic layering in the city, similar to how different layers of soil have formed underground over time” (Wang, 2015). Historic towns, however, are more than just a collection of distinctive built environments when it comes to historic layering, they also comprise people and other intangible characteristics like festivals and spiritual gatherings. Religious-historical towns’ social and spatial structures are clearly and conclusively related (Metro-Roland, 2016; Rennie, 2007; Moustakas, 1994; Clutterbuck, 2014; Kansas State University, Architecture Department, 2009). The Mathura district in India is well-known for its cultural and religious importance, and it is believed that 50 million pilgrims and visitors come here each year to pay respects at number of temples, *kunds*, and sacred groves which have significant religious value. Vrindavan is one of the most visited religious-historic towns of Mathura district. It is approximately visited by 15 million visitors on annual basis. The research explores the decisive factors which act as a generator and expansion of religious-historic town, Vrindavan. This would help in understanding the process of spatial transformations to further purpose urban conservation strategies which will enhance the built environment. Understanding the stages of spatial alterations of Vrindavan can aid in the analysis of not only internal socio-spatial aspects, but also contextual interrelations between different contexts such as the entire old core, historical districts, and individual heritage sites.

Vrindavan is a typical religious-historical town of a middling size. There has been a significant transformation from small-scale organic street networks to huge contemporary grids. One can observe, the wave of reconstruction and re-

development of historic precincts in addition to new construction along the periphery. In the twenty first century, the town is not only expanding, but also merging with the adjoining urban settlement Mathura, and the total expansion has resulted in a new sort of twin city known as Mathura-Vrindavan. Modern roadways have created a new grid system which also has lagoon on traditional areas. As a result, it is vital to explore in depth various aspects i.e., what is the difference between traditional and modern networks, the present spatial location of the historic core in relation to urbanized area, the impact of interventions on historical areas, and how these interventions affect the religious-historical context.

The objectives of this study are to

- Document the historical phenomena and spatial transformation at Mathura district (1920s-2000s).
- To gain a better understanding of Vrindavan's changing pattern, spatial characteristics, and functional distributions so that strategies can be developed to support conservation or redevelopment decisions.
- To understand correlation between architectural character of historic buildings and environmental ambience of built environment.

2. Research Gap and Methodology

2.1. Research Gap

After the literature review and physical survey, it has been observed that spatial transformations are leading to the change in the overall ambience of the place. Lot of Govt. and non-Govt. organizations are working on the conservation of this town, but the emphasis is limited to the conservation of individual buildings. Through this research authors have boldly put forward the need of urban conservation of the town so that historical ambience can be retained which is the prime reason for religious tourism.

2.2. Methodology

This research can be divided into two broad sections: documenting the spatial transformation and suggesting urban conservation strategies. The application of historical GIS has been carried out to understand the spatial transformations. Geographic information systems (GIS) are a useful tool for processing geospatial data since maps and city plans are necessary for researching the historical and architectural surroundings and provide the most accurate information (Bushmakina et al., 2017). A significant contribution to the sustainable development of the historic regions can be made by overlaying and combining information in GIS with thorough analysis and visualization techniques (Droj, 2022). As historical GIS can visualize and analyze both space and time, as well as handle massive databases, so its application is a highly relevant methodological instrument for this research. Vrindavan, the city of religion and history has been observing rapid spatial transformation due to oversized religious tourism which has been

analyzed through satellite images. The urban conservation strategies for maintaining the built environment of historic areas have been formulated through literature reviews, physical mapping & surveys. Spatial transformation of Mathura district and Vrindavan has been documented through satellite images to record the decadal growth. Historical phenomena of the religious-historic town have been understood through literature review and further the observation at the site has helped to relate the theory with the existence. This has been observed that expansion and transformation of street network has been related to the decadal growth of the city.

The adopted methodology has considered the application of computer technology, literature review and site surveys to get the best possible results.

3. About Mathura District and the Evolution of Temple Towns

The Mathura region, which is situated along the Yamuna River, has a long-standing association to Lord Krishna. According to scriptures, the entire Mathura district was formerly densely spread with sacred *vans* (forest), and urbanization at region began in the early 16th century. It has been noted that from the 16th century to the latter half of the 20th century, particularly the 1960s, observed the inception of majority of temple towns at Mathura district. As per the evidence, there were innumerable attempts by the saints to trace the pastimes of Lord Krishna. The sixteenth century is primarily listed as a major turning point because it gave rise to numerous lineages that were both intrinsically and extrinsically responsible for changing ancient morphology (Carney, 2007).

- In 1514, Lord Caitanya (1486-1533) made his first journey to Vrindavan. Later, he deployed six of his *goswamis*¹ to find Lord Krishna's temples that have gone missing. These six *goswamis* built a lot of temples in Vrindavan.
- Second, in 1509, the temple towns of Gokul and Srinathji were given additional prominence on a map of the Mathura territory created by Vallabhacarya² (1479-1530). (Gokul and Srinathji³, although both are traditional sites of Krishna's youth and are situated across the Yamuna River from Mathura).
- Third, Hit Harivansh, a poet, arrived in Vrindavan in 1534 and established the Radha-Vallabh *sampradaya*⁴.
- An image of Krishna known as "*Kunja Bihari*", now known as "*Banke Bihari*", was worshipped in the 16th century by Swami Haridas, who is the creator

¹The Sanskrit word Goswami may refer to the Vedas or the "lord of the senses" (Go means Vedas). This is also an Indian surname.

²Within the Vaishnava traditions, Vallabha is revered as a guru and acharya (embodiment of a holy personality). The Pushti sect in India and the philosophy of Shuddha advaita were developed by the devotional philosopher Vallabhacarya (pure non-dualism).

³This is location of Lord Krishna related to pastime of miraculously holding the mountaintop loft to shield his childhood friends' cows.

⁴Hinduism, Buddhism, Jainism, and Sikhism are Indian origin religions. Sampradaya (Sanskrit; IAST: Sapradya) can be interpreted as "tradition", "spiritual lineage", "sect", or "religious system".

of the *drupad* musical genre and Tansen (1506-89), mentor to Akbar's court musician. Its temple is the most well-known structure from this formative era and the centre of this *sampradaya*. Now this is also the most visited temple of Vrindavan.

There have also been lot of international pilgrims and tourist after the inception of International Society of Krishna Consciousness (ISKCON).

3.1. Spatial Transformations at Mathura District

The urbanization is happening at very fast pace and with a result the land use has changed consistently over time to facilitate an increase in visitors to the Mathura district's temple towns. The satellite images of the Mathura district from 1973 to 2018 are presented here, illustrating the proportion of built-up and non-built area (**Figure 1**).

The Mathura district which was once covered with dense forest has now been reduced to small patches of sacred groves. Due to rapid industrialization and urban sprawl, even sacred groves are gradually disappearing. The Mathura district, which has a total area of 3340 sq km as per the census of 2011 (**Figure 2** & **Figure 3**), at present only a few small patches of groves are left. According to the findings, the total percent built-up area was 7.12 in 1973 and increased to 23.9 in

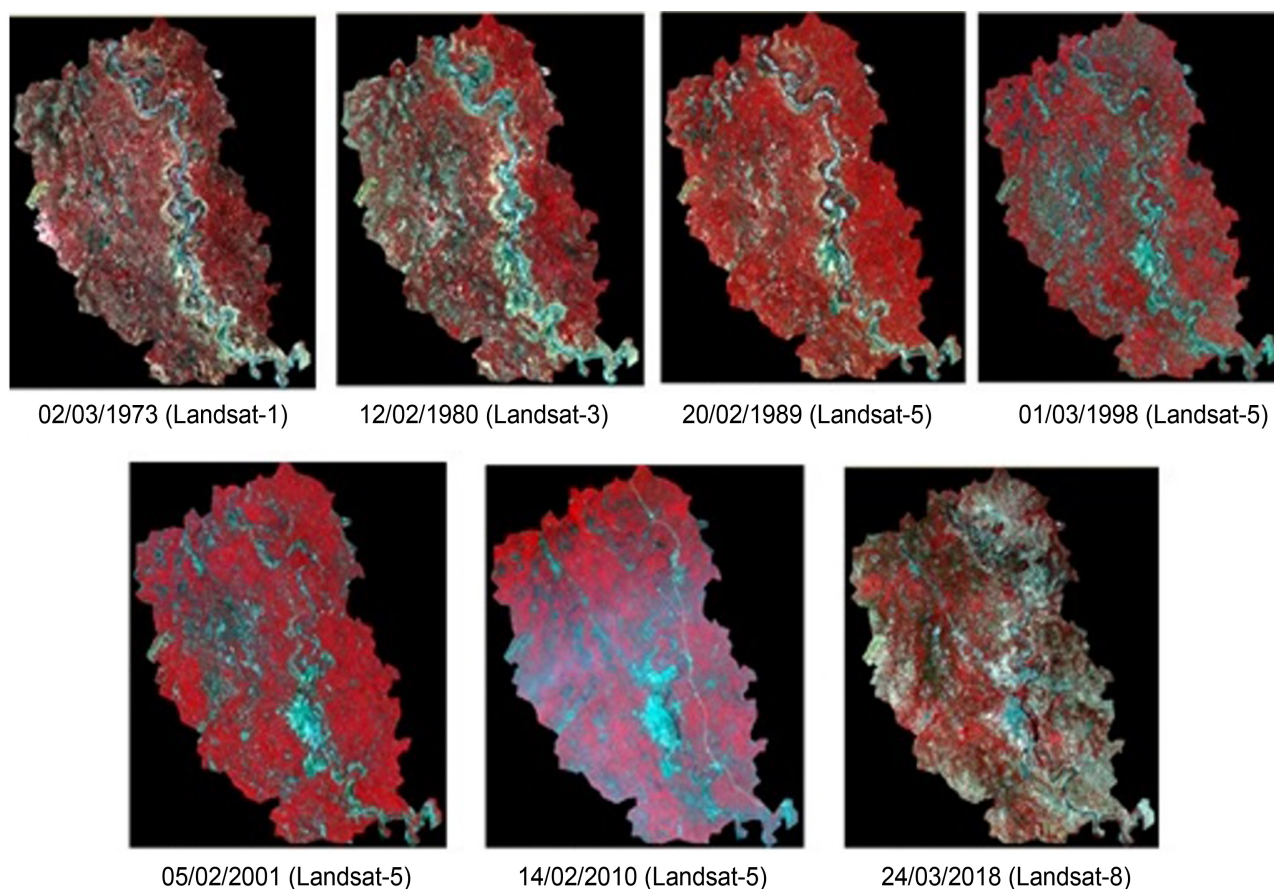


Figure 1. Satellite images of Mathura district.

Area of two classes in percentage from classified image							
	1973	1980	1989	1998	2001	2010	2018
Built-up %	7.12	7.73	9.1	11.78	14.62	15.35	23.9
Non-builtup %	92.87	92.27	90.9	88.22	85.38	84.65	76.11

Accuracy assessment of classified image
Sample points taken: 100
Sampling method: Stratified sampling

Area of two classes in percentage from classified image							
	1973	1980	1989	1998	2001	2010	2018
Overall Accuracy %	93	94	92	88	90	87	88
Overall Kappa statistics (K')	0	0	0.18	0.20	0.41	0.45	0.56

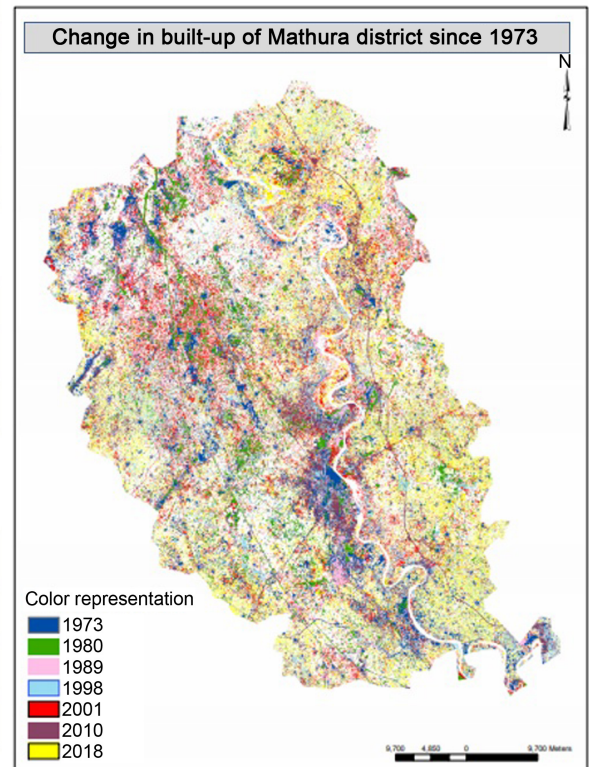


Figure 2. Change in built-up of Mathura District since 1973.

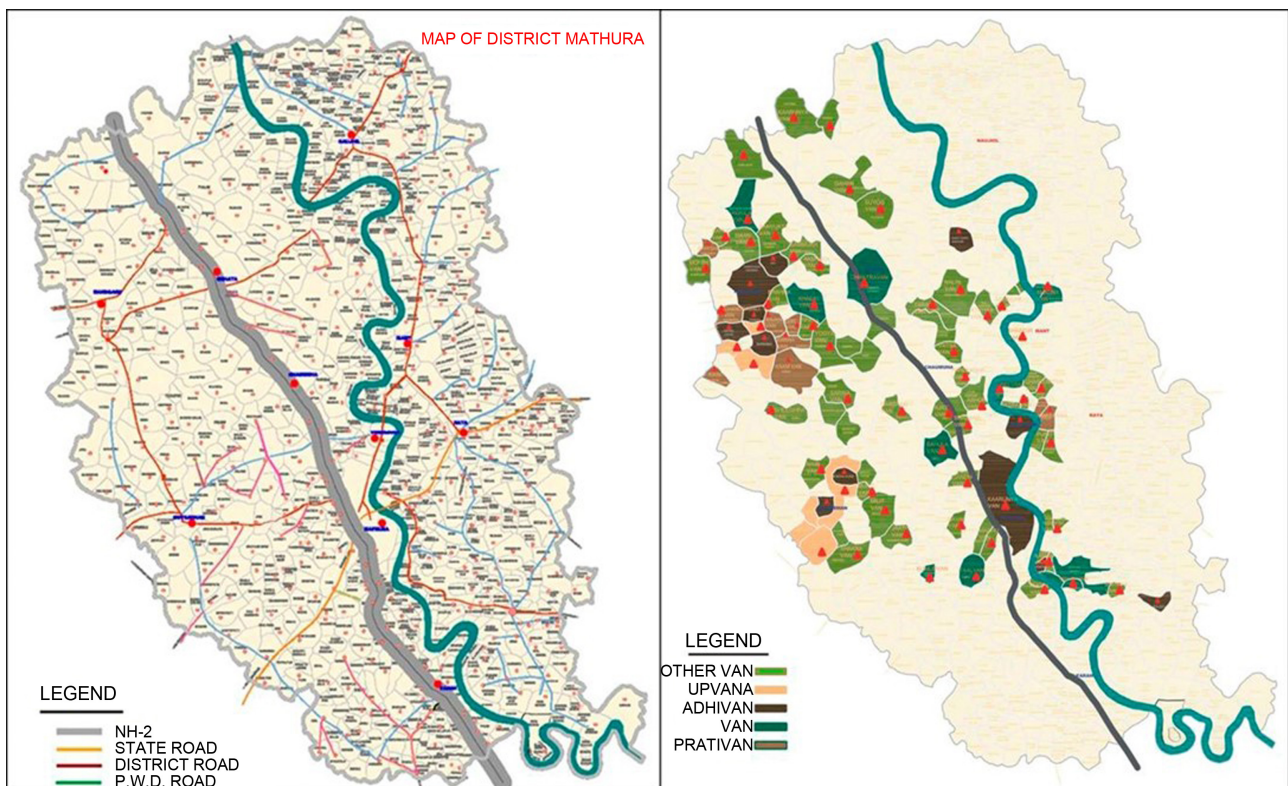


Figure 3. Maps depicting Mathura District's remaining forests Sources: NGO: Braj Foundation and Mathura-Vrindavan Development Authority.

2018. This is taking place at the expense of holy groves (**Figure 2**).

3.2. Evolution of Religious-Historic City Vrindavan

The Mathura region was formerly covered with twelve dense sacred forests which are located on the eastern and western banks of Yamuna. The most well-known of these twelve forests is Vrindavan since it is the location of several of Lord Krishna's pastimes. The city's historical name, Vrindavan, derives from the name of its "Brinda" (holy basil, tulsi, or *Ocimumtenuiflorum*) woods (*van*). On the Yamuna River's bank is where Vrindavan is located. Vrindavan is known for more than 5000 temples, about twelve ghats, and two holy forests. Vrindavan has a long history and its association with Lord Krishna makes it an important Hindu pilgrimage site. One of its oldest still-standing temples is the Govinda Dev temple, which was built in 1590.

It is stated in many sources that all life began in the water and in many religions, cosmos is created from water. As per ancient scriptures, cosmogony, the continuous re-creation of cosmos, gods, & humans, is dependent upon water. Most religious scriptures and ceremonies lay a strong emphasis on water. Water has been assigned a primary place in religious studies when it comes to defining its function in rituals and cosmologies. In the concepts of the divine, water is an essential component (Tvedt, 2021). Water is one of the main generators of religious-historic town Vrindavan which lies on the bank of river Yamuna. According to the Vedas, the river Yamuna is personified as the sister of Yama, the God of Death, and the daughter of the Sun God (Dalal, 2014). As a result, it is a popularly accepted belief that those who bathe in the pristine waters of the source stream are free from the torture of death worries. Its proximity to Lord Krishna's pastimes in the cities of Vrindavan and Mathura is the primary factor in its reverence. The *ghats*⁵ along the river Yamuna are one of the most important symbols of Vrindavan's cultural and religious heritage. Out of several ghats, Kesi *ghat* is one of the most popular among the visitors. The *ghats* and the *havelis* behind them date back to the period between 1790 and 1810.

This has been believed that Kesi *ghat* is the origin of Vrindavan town. Since here the water of the river is believed to be most sacred, water is carried from here in small urns for the ablutions and ritual purification of idols of temples. Some temples are also built in the niches of *parikrama marg* along the *ghat*. Over the period, the organic development can be observed around the *ghats*.

The organic growth of a settlement normally goes through three stages (Sarkar, 2018). The three developmental stages are histogenesis, patternogenesis, and morphogenesis. The origin of the town's historical core is referred to as its "histogenesis". The process of patternogenesis describes how various human habitation and interaction nuclei develop through time to eventually produce a town's skeleton pattern. The morphological nature of the modern metropolis, which is

⁵The term "ghat" refers to a wide set of steps that is located on an Indian riverbank and offers access to the water, particularly for bathing.

closely related to its functional nature, is a prime illustration of morphogenesis. This notion has been applied to the temple town of Vrindavan, which is located on the banks of the Yamuna River. According to legend, the city of Vrindavan began on the banks of the Yamuna River. The historical nucleus of Vrindavan is thought to have originated near *kesi ghat*. There is a prevalent idea that persons who bathe in the kesi ghat are immune to death concerns. Pilgrims used to flock to this ghat in search of salvation and benefits. **Figure 4** shows the type of expansion in Vrindavan, which can be characterized as multi-nodal development, which re-directs development away from the urban core or city centre, which in this case is the river, Yamuna.

3.3. Spatial Transformation at Religious-Historic City, Vrindavan

Vrindavan covers an area of 2.25 square kilometers. Vrindavan is a city of temples, the most important of which are the seven temples (*saptdavalaya*). Vrindavan, one of the most important temple towns in the Mathura area, has become a religious tourism destination due to its popularity among the devotees of Lord Krishna. Religious leaders of temples of Vrindavan organize several preaching programmes throughout the year, bringing in visitors from all over the world.

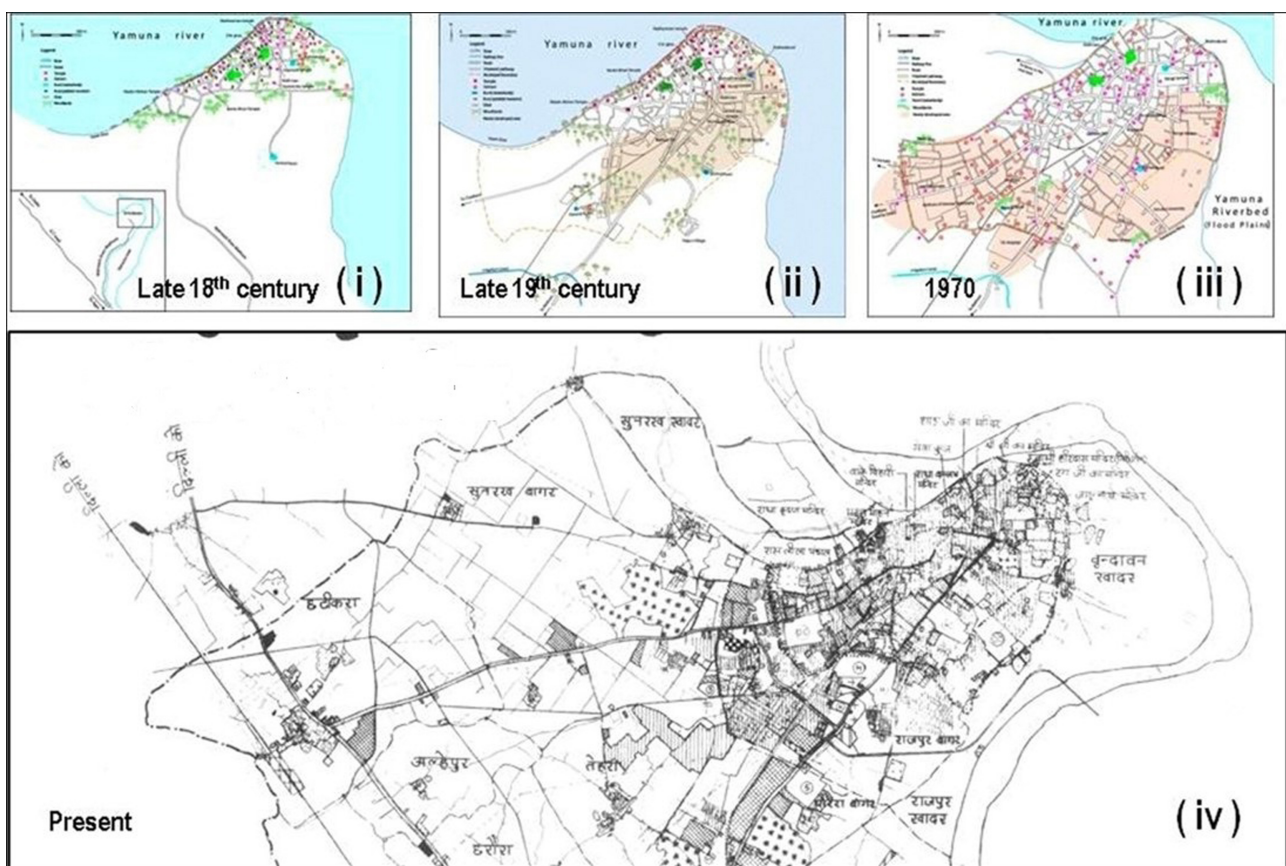


Figure 4. City Vrindavan's morphological development Source for i, ii & iii: place-making and environmental change in an Indian Hindu pilgrimage site by Kiran Shinde (2010), published by Elsevier, and iv: Agra Town Planning & Rural Planning, U.P. & Mathura-Vrindavan Development Authority.

The month of *Kartik* is when tourism is at its peak (October-November). As this month has a significant amount of spiritual significance for Lord Krishna's devotees, pilgrims try to stay in Vrindavan for the entire month. In the last five decades, the city of Vrindavan has seen a significant increase in religious tourism, which has resulted in a slew of development projects to accommodate the influx of visitors, with the resultant change in land use (**Table 1** & **Figure 5**).

It has been noted that tourism has increased dramatically between 1996 and 2015 (**Figure 5**). The likely explanations include a surge in foreign travel in 1996 which is primarily due to establishment of ISKCON temple at Vrindavan. ISKCON's introduction of several preaching programmes, and the establishment of suitable guest houses has solved various issues related to housing facilities for each economic category of religious tourism.

Further to accommodate the expanding number of pilgrims, various categories of guest houses have been constructed by various organizations which has also given boost to the economy of region. From 6.14 percent in 1994 to 51.6 percent in 2006, the number of pilgrims visiting Vrindavan has increased. During important festivals, the number of pilgrims registered on a daily basis is

Table 1. Visitor details at Vrindavan [Ref. U.P. Tourism].

S. No,	Year	Indian	Foreign	Total
1	2011	3,841,200	18,500	3,859,700
2	2012	3,865,000	18,600	3,883,600
3	2013	3,925,000	18,800	3,943,800
4	2014	4,015,000	19,050	4,034,050
5	2015	12,600,000	47,890	12,647,890
6	2016	12,650,000	48,000	12,698,000
7	2017	13,788,500	50,880	13,839,380

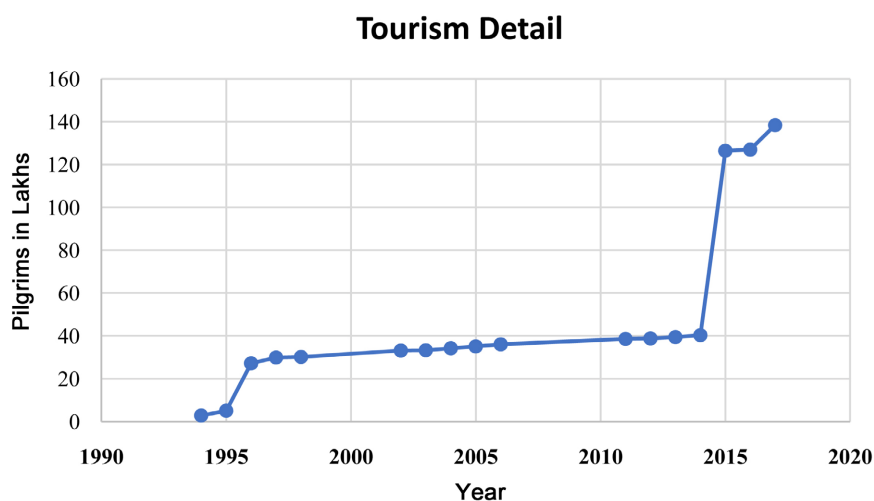


Figure 5. Pilgrims details at Mathura-Vrindavan, Source: Agra Town Planning & Rural Planning, U.P & MVDA, Mathura.

around 10 lakhs, according to the Department of Tourism. In the twin city of Mathura-Vrindavan, there are approximately 117 guesthouses/*dharamshalas*.

Vrindavan is also known as the “city of widows” because many ladies who have lost their husbands have relocated to the town to spend the life of celibacy. There are an estimated 15,000 to 20,000 widows in Vrindavan.

With this rate of increasing influx in Vrindavan, the sacred forests of Vrindavan are continuously urbanized. This region which was a dense forest cover has been reduced to a few patches of sacred groves. Housing/residential/temple building, as well as related infrastructure requirements like as water supply, power, sewerage, and waste disposal, has gone beyond the carrying capacity of Municipal Corporation. Religious tourism has a huge negative impact on a location’s ecology and environmental ambience.

3.4. Spatial Configuration and Typology of Architectural Style

Urban form is governed by three parameters: time, place & society. Spatial forms and urban compositions are built over time (Almusaed & Almssad, 2019). The investigation of urban form of city Vrindavan has been seen from an historic perspective so that transformation can be analyzed. It was necessary first to understand the historical context concerning the development of the urban form. To comprehend the spatial transformations, historical documents were also explored. The pictorial representation of urban morphology (Figure 4) was important for the analysis of urban forms. The following categories of spatial study have been carried out:

- Hierarchical street network patterns
- Spatial layout
- Architectural Character of Historic buildings
- Hierarchical Street Network Patterns

Mathura city and the Delhi-Agra highway are connected by two major roadways to the historic city Vrindavan (Figure 6). There is more pedestrian traffic on internal streets which are close to temples and normally it is seen that there is struggle among pedestrians and vehicles for the access. In certain locations, routes were seen crowded with all kinds of vehicles i.e. cars, three wheeler etc. making it difficult for people to go about (Figure 7). The winding, narrow streets that at times resemble tunnels due to how they constantly turn in and out. There are some cul-de-sacs that lead to only a small number of buildings, as well as dead-ends that cut deep into the urban block. The entire old city contains elements of the street system, including thoroughfares, twisting, tiny alleys, and cul-de-sacs. In some locations, streets serve as a building block’s entry, with houses opening directly onto the street.

- Spatial Layout: The spatial layout, which is primarily a study of urban grids or sectors and in case of Vrindavan, it is the principal temple precincts (Table 2). The study has been done with the specific goal of understanding the link between the structure and its connecting arteries. In the Mathura district, and particularly in Vrindavan, there is a three-fold hierarchical spatial

Table 2. Major temple precincts of Vrindavan and their key elements.

Zone	Typology	Major Components
I	Temple Zone:	It includes main temples of Vrindavan i.e. Radha damodra temple, Banke-Bihari temple, and Radha Shyamsunder temple and sacred grove named Sewakunj
II	Temple Zone:	It includes main ancient temple i.e. Radha Raman, Govind dev temple, Gopinath temple and among ghats it includes, kesi ghat and the most visited sacred grove, Nidhu van
III	Temple Zone:	It includes one unique religious spot known as TatiaSthan which houses lot of sacred trees & one small ancient temple, and Rangnath temple
IV	Commercial Zone:	This is primarily a commercial area with lot of eateries, Bus stand and also there are few residential colonies also. There is an ancient <i>kund</i> in this particular zone known as Govind <i>kund</i>
V	Residential Zone:	This is dominated with the residential colonies which have recently come into existence and dominated by modern construction
VI	Institutional Zone	This houses Engineering college, school and banks
VII	Mixed Use Zone	Newly built apartment blocks, shopping malls, and the Krishna Balram Temple (ISKCON)

appears that the entire old part of city, which is enclosed by the *parikrama marg* stands apart from the recently developed area. The non-integrated, contemporary-style building stands out as a different physical area on the periphery of city and urban sprawl is primarily seen towards Mathura city.

There are both small and big temples across the city. Along the temple streets, commercial activity had increased. The place's form, structure, and morphology have all been significantly influenced by the influx of pilgrims and tourists. The demand to accommodate an increasing number of migrant populations has resulted in non-unique structures and architecture that are in direct contrast to the local vernacular architecture.

- **Architectural Character of Historic Buildings:** In the old city, there are numerous variations in urban block sizes, forms, and degree of use from residential to commercial. One can see the most irregular and intricate to a more regular, nearly flawless orthogonal configuration. Temples and residential areas in Vrindavan have peculiar type of arches built in an iconic way. Coupled with changing aspects have been found to follow "neo-vernacularism" design tendencies. Many locations display architectural ornamentation in an artistic manner (Figure 8).

4. Identification of Issues

From a historical perspective, the preservation of the physical form of individual buildings is important, but in addition to this it is equally important to recognize the dynamic forces that shape the general ambience of precincts. The preservation of built environment with historic buildings as one of its components will

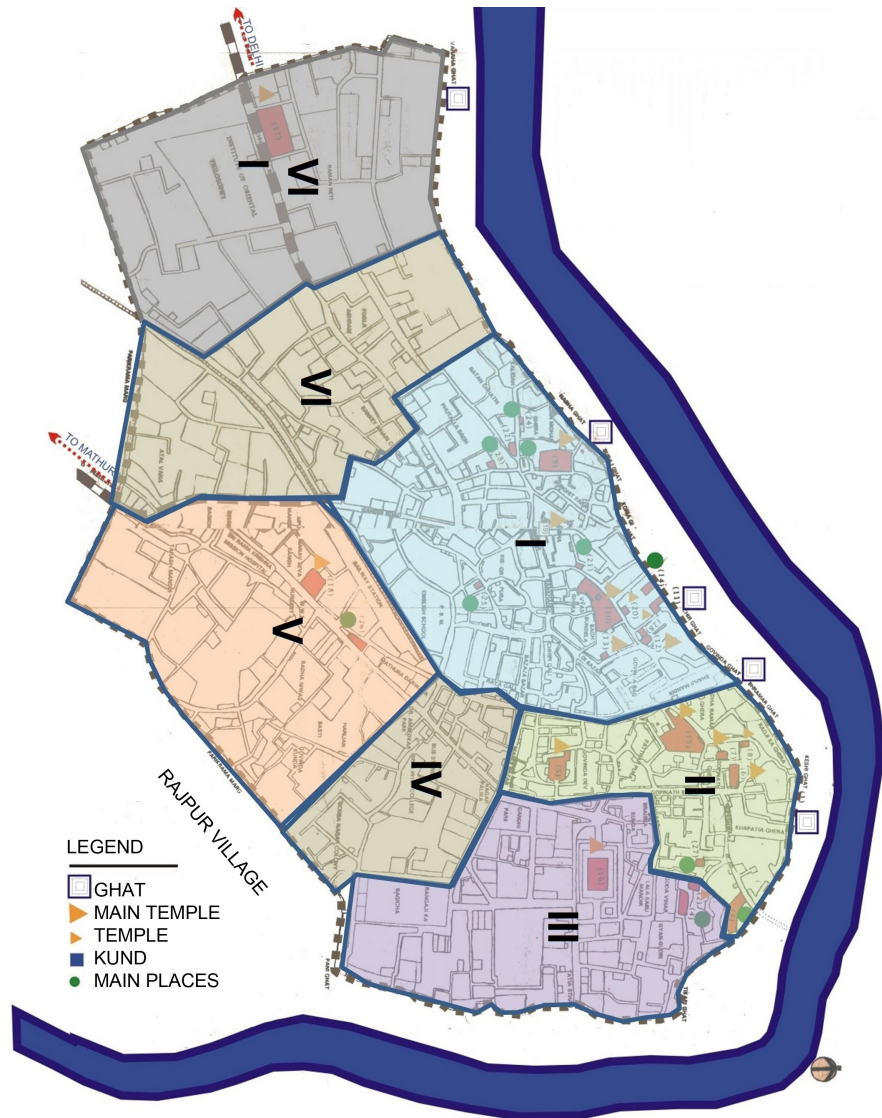


Figure 8. Various temple precincts at Vrindavan (Base Map Courtesy Braj Foundation).

help in conserving the environmental ambience of the place. The historic quarters are geographical, social, and cultural units with distinct ethnic, religious, and economic characteristics (Dastgerdi & Luca, 2020). Broader issues related to the urban conservation has been listed as follows.

4.1. Change in Architectural Character of Historic Buildings

The city's architectural character changed a lot during the process of urbanization. The competition of modernization has led to the change in the ancient architectural character of the buildings. In general, one can see loss of original ornamental elements, alteration in the style of openings and in addition certain typology of masses and elements are being introduced as retrofitting elements which is converting the existing architecture into neither modern nor traditional one. On one side certain group of people are putting in efforts to preserve the

distinctive historical values of historic town but on the other side, there is also a trend toward modernizing the city by using materials like steel and other metals of building construction (**Figure 9**).

The National Capital Region (NCR) and other nearby metropolitan cores have a significant influence on the metamorphosis or development type of Vrindavan's ancient and holy towns. Currently, in the city's historic center, the buildings' architectural styles might be categorized as a medium layer, which is neither totally modern nor entirely traditional (**Figure 8**). The end outcome of the entire process is the metropolitanization of the region. Traditional architecture of place must be conserved in order to protect the authenticity and environmental ambience of the place.



Figure 9. Photo i-v: depicting the characteristic of the structures seen in the old city Vrindavan and photo iv and v particularly illustrates how unplanned interventions have changed the character of the architecture; photo courtesy: author.

4.2. Changing Course of River Yamuna at Vrindavan

On the banks of Yamuna River's banks at Vrindavan, there were a lot of *ghats*. Since the river's path is constantly shifting, most of the ghats are dry as they are no more connected to the river (**Figure 10** and **Figure 11**).

Currently, there are only twelve *ghats*, and out of which only the *kesi ghat* is in use (**Figure 10**). There is currently a paved road in front of certain *ghats*, and developers have been steadily encroaching on adjacent properties.

5. Conclusion

The physical and functional elements of the old urban fabric of Vrindavan have



Figure 10. Kesi Ghat, Vrindavan, photo courtesy: author.



Figure 11. Ghats without river, Vrindavan, photo courtesy: author.

been thoroughly surveyed and analyzed so that genuine strategies can be formulated. From a historical standpoint, the city of Vrindavan's connectedness network has been investigated which has helped to understand the historical context in which this temple town grew. The spatial links have been deduced from historical texts. The form of cities has remained a mystery. Urban morphology has been understood through pictorial representation. A cursory inspection of the old historic city reveals only a few morphological characteristics that set the various residential & commercial of the city and temple precincts apart.

The substantial physical alterations have related into numerous issues related to the imageability of place. Visitors at place with certain imageability in mind normally relates the ancient form of Vrindavan as mentioned in the scriptures but at times it becomes difficult to establish a connection as the specific characteristic of heritage values of the historical environment are significantly lost. Due to fragmentation spurred on by the free market, lack of regulation, and inadequate infrastructure support, a significant influx of religious visitors has an undesirable impact on the cultural and environmental integrity of religious locations (Shinde, 2010). Over urbanization has impacted the area's entire atmosphere because there aren't adequate guidelines for urban planning and design policy and residents and officials aren't aware of how important heritage is. Whether to renovate or not to modernize is a crucial urban design decision that requires attention.

There is a strong need to come up with a solution that can preserve the sanctity of the area's precious sacrality. The problems related to the traffic jams on the internal roads to the abandoned ghats along the Yamuna river need attention. It is crucial to realize that the natural environment contributes significantly to the built environment. To accurately assess the viability and appropriateness, it is important to evaluate the development policies. Heritage must be applied as integral part of development by policymakers for city management. The is requirement for adequate & appropriate guidelines to guide the common residents regarding methods of upgrading the old/ancient structures which are of great historic values which can be defined as comprehensive strategy for urban regeneration. It is true that every city has a distinct identity that is valuable and conveyed through its outward appearance. A city's urban identity and its regional urban legacy are closely related (Barkat, Ayad, & Elcherif, 2019). For the maintenance of an urban identity, a historical precinct, as a whole needs to be preserved as urban character as it is a key component of urban conservation (NIUA, 2015).

The increasing amount of visitors in the city has been severely influenced by the new modes of transportation and connection. City has outgrown it's carrying capacity, making it difficult for the authorities to handle the growing number of motorized vehicles.

A tirtha, Vrindavan has been visited by millions of people for the religious purpose. Since it is intended to be a haven away from materialism, it cannot be

developed in the same way as any other Indian cities. It is necessary to grow temple towns like Vrindavan, but the development criteria should be established in a way that protects not only the architectural value of the temples, the ghats, the Yamuna River, the vans, the trees and flora, but also the overall ambience of the many sacred city. The preservation of historic structures is a fundamental component of culturally and historically significant towns. In order to secure the evolutionary development of historic cities, approach of holistic city management needs to take into account which can address issues related to ecological sustainability as well as spatial originality and character.

Modernization of existing and new structures is done which is worse and even more problematic in near future also. The conflict however is not just physical—a question of tall and out of scale buildings or inconsiderable design, material, and color. Rodwell has related the historic city with container. He said for instance, the container of historic city might be preserved but one must give consideration to the contents of container (Rodwell, 2008). With different architectural styles and modern buildings mushrooming across the entire area on the outskirts, the appearance of the religious-historical town of Vrindavan has changed over the past several decades. The craze of the NCR region, which is nearly 150 kilometers from Vrindavan, has dominated the architecture of new buildings that are being erected there. The need for contemporary building services, such as air conditioning, firefighting, and sanitary facilities, is growing, thus landowners are investing in modern construction to attract in more people.

However, it's vital to examine the most crucial elements which can contribute to preserve the integrity of place and detailed study need to be conducted in this regard before formulating principles and standards for the practice of subsequent planning and space management. There is dire need to build strategies that consider the diversity of cultural assets and thoughtfully integrate sustainable heritage urban conservation into regional frameworks for urban development (Udeaja & Trillo, 2020).

Historic streets and Yamuna river, as well as other landscape passages, require extra protection. To prevent making too many changes to the visual impression, the color, height, and style of the building facades next to these corridors should remain constant.

It is better to preserve the entire historical city rather than individual buildings (Porfyriou, 2019). There are various religious precincts in Vrindavan that are rich in local culture and traditional values. It emphasizes the need of preserving the conventional street network and historical townscape identity. A place's identity reflects its distinctiveness. The blending of artistic, pragmatic, and symbolic aspects should be the main emphasis of strategy and planning. A town's character, which is determined by its originality and distinctive element, is what distinguishes it from other religious-historic cities. Character is interrelated to history as physical characteristics of locations are a result of historical construction during particular times (Kropf, 1996). The architect should pre-

serve the history of the structures as a priceless legacy, as per John Ruskin's advice in his book. He popularized the idea of integrated conservation, according to which it is vital to ensure the architectural style and character (Niglio, 2014). Relationships between a historic location and its surrounds are part of visual integration. Both natural and built heritage are included in the conversation of historic ambience. The integration of contemporary style into the existing historic setting is currently an issue. Integrated conservation was underlined in the European Charter of the Architectural Heritage. Integrated conservation does not prevent the introduction of new architecture into areas that contain historic structures as long as the existing context, proportions, forms, sizes, scale, and use of traditional materials are acknowledged and embraced.

6. Recommendations

Keeping in mind the carrying capacity and projected pilgrims, recommendations for enhancing the built environment at temple town in Vrindavan can be summed up as follows:

- To protect and improve vans and (natural heritage) in order to maintain environmental quality. Limiting expansion in and around the natural heritage precinct can contribute with the aspect of maintaining the degree of openness which is very much expected by the visitors.
- To enhance the infrastructure to accommodate more visitors.
- To subdivide the temple town, Vrindavan into different zones based on their visitation and geographical location i.e. temple precincts placed in the vicinity of river Yamuna, religious precincts located in the vicinity of sacred groves etc.
- In addition to the above point, Infrastructure should be distributed so as to distribute pilgrims among several zones, easing the burden of visitors and pilgrims on a single area.
- To charge an entrance fee in some areas to help maintain and administer the various temple towns' locations.
- To incentivize the building owners who retain the original architectural character of the building.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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