Ode to the Holkars – Interweaving the Cultural Heritage of the Holkar Chattris and the Kanh Nadi to Craft a Dynamic and Vibrant Riverine Zone in Indore

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Abstract **- Urban centers in India have a long and intertwined history with rivers. Being close to it brought easy access to water for domestic, agricultural and fishing purposes. Alongside the tangible impacts, a deep cultural significance for rivers emerged in India where it came to be associated with community and individual rituals. Such is the case with the Khan Nadi and the beaming temples abutting it, the Chhatris of the Holkars in Indore. Increased rate of urbanization, various harmful anthropogenic activities degraded the Kahn River which led to it becoming the biggest source of contamination, downstream for river Kshipra. In recent years, attempts were made to revive the river from the pollution. The project however did not touch upon the cultural aspect of the river and the built heritage it supports. The temple ghats still remain abandoned, devoid of any community engagement spaces. The significance of the river and the Holkar chhatris has been lost in the process of beautification of the riverfront which mainly relied on mechanical means for its visual development. Thus, A holistic approach is adopted to develop community centric sensitive urban riverfronts, which allows us to re-establish the cultural roots shared by the river and the heritage buildings. The study seeks to explore the unique relationship of Khan Nadi and the Holkar Chhatris by creating spaces that celebrate the city's distinctive identity, connect its inhabitants with their past, and offer platforms for cultural expressions. Giving the city of Indore a dynamic public space where residents and visitors can engage with history, art, and community. This research aims to craft a public realm which benefits local stakeholders, encourages public participation, is socially inclusive and above all integrates culture, community and ecology.**

Keywords **– riverfront development, Cultural Riverfront, Kanh River Indore, River-centric planning.**

I. BACKGROUND AND INTRODUCTION

A. *City Profile:* Indore started as an old settlement at the end of 15th century. Its original nucleus was a riverside village, which occupied the bank of river Sarasvati. This area is now known as Juni Indore. The little village grew as an important halting place for pilgrims traveling between great religious cities, Ujjain on the bank of the Holy River Kshipra; Omkareswar on the banks of River Narmada. Later, in addition to the halting place it also became a camping place for forces of Moghul's and Marathas who frequently moved to South and North for expanding their kingdoms. Now Indore has become one of the famous cities of Madhya Pradesh and the district headquarter. It is situated on the western part of the Malwa plateau (historically known as Deccan plateau), located at 22’43’ N latitude, 76’ 42’ E longitude on the banks of two small rivers, the Kanh and the Saraswati. Indore is located at an average altitude of 550 meters. above MSL. The city is currently the most populated city of Madhya Pradesh. Indore has been a center of affluence due to flourishing trade and commerce right from the beginning. It is the biggest commercial center and is termed as the business capital of Madhya Pradesh. Indore has a strong historical background with heritage buildings such as Lalbagh Palace, Hawa Bungla, Sukhniwas Kothi, Gandhi Hall, Krishnapura, Bolia Chhatris etc. [1]

Figure 1: Image Showing Evolution of Indore Through Different Times
Source: Author

B. *River Profile:* Kanh River originates from Bilawli Talab Limbodi, Indore and flows through Indore City. Kanh River passes through Indore City and meets Kshipra River at Ujjain after flow of 72 kilometers from its origin. Saraswati River originates from Footatalab Rau, Indore and enters the city from western side and joins River Kanh at Sanjay Setu/Krishnapura Chhatri in Indore. Historically, the river was considered sacred and a revered resting spot for the pilgrims and yogis who were coming from South and travelling to north to reach Ujjain where, one of the seven jyotirlingas is present, The Mahakaleshwar. However, due to increasing urbanization and increasing pollution levels,

Kanh Nadi has been reduced to a nallah which contributes to increased pollution level of the Kshipra downstream in Ujjain where Kanh joins river Kshipra. [2]

Abutting the bank of Kanh Nadi is the Gangor Ghats of the famous Holkar Chhatris built by the Holkar Dynasty in 1849. Due to the polluted nature of the river these beautiful heritage structures which once were integrated with the river also face the consequences.
Today, the water quality of River Kanh comes under polluted category as per DBU (Designated Best Use) because domestic waste water of city and un-treated effluent of industries is mixing in Kanh through different nallahs.
The city does not have a proper sewage collection and disposal system. In 1936, its Holkar kings constructed a 30-km covered sewerage line over 10 per cent of the city's area. Most of the wastewater is drained into Indore's three major streams, which flow towards the north and meet at the city's municipal borders. These three are the Khan and Saraswati rivers, and the Piliyapala nallah.[3]

In terms of drinking water, the city currently has 3 existing sources of water viz. Narmada River (540 MLD), Yashwant Sagar Dam (45 MLD) and Bilawali Tank (9 MLD). The water supply as per AMRUT is around 323 MLD & rate of water supply is 97.67 LPCD. Indore water supply network serve a population of (census 2011) 19.6 lakh. The water services cover 46.65 % of the area and in the remaining 53.35% of the area is not covered.
A 1,200 mm-diameter pipeline brings the river's water over a 110 km distance. Because of the single pipeline, any break in supply – due to power failure or maintenance work – wreaks havoc in the city. Moreover, it has to be remembered that Narmada water is supplied to only 80 per cent of the city; Indore's fringes, where the poor live, do not get this water. [3]

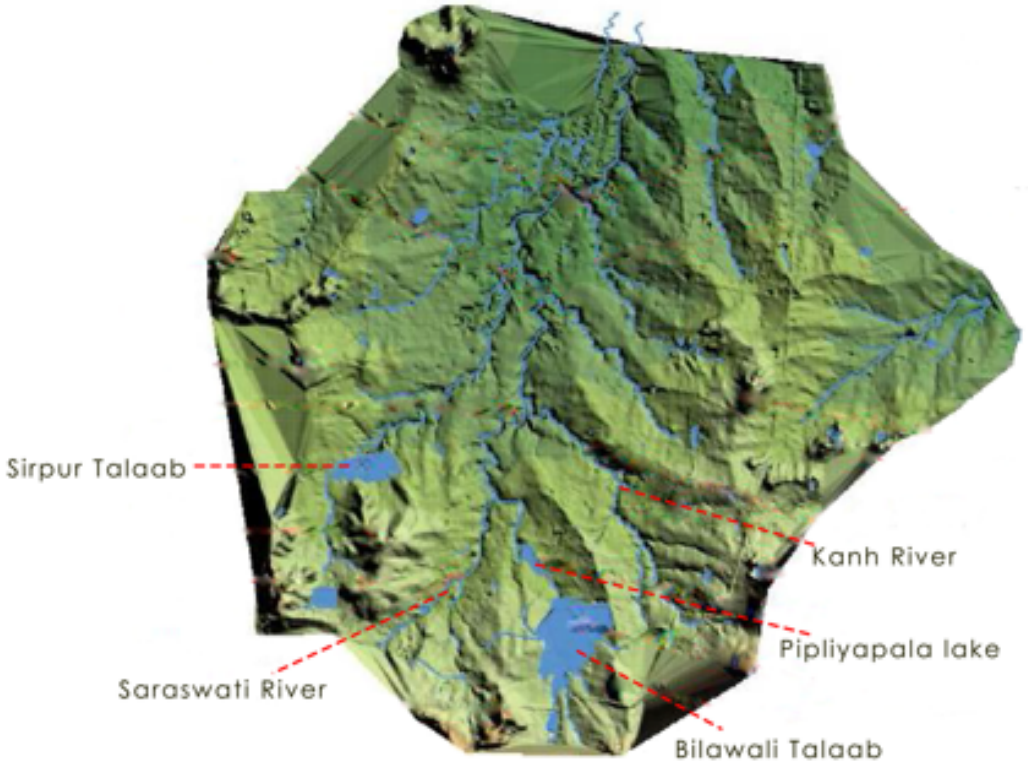


Figure 2: 3D Terrain Mapping of Indore Showing Location of Major Water Bodies and the Flow of Kanh Nadi
Source: Indore Municipal Corporation, Project AMRUT, DPR on Indore Sewerage System

C. *River and Heritage:* Heritage landmarks located around the banks of the river are a major tourist attraction. Heritage walks around the precinct are conducted by M.P. Tourism. In the recent global event of the G20 summit which was held in India, delegates from different parts of the world visited Indore and looked around the city's built heritage.

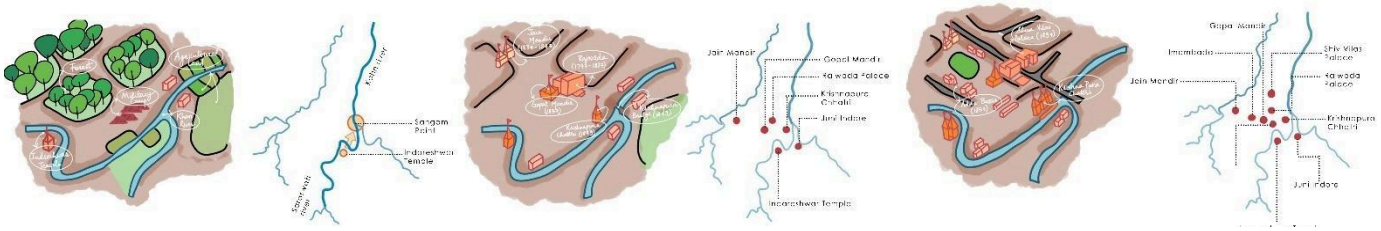
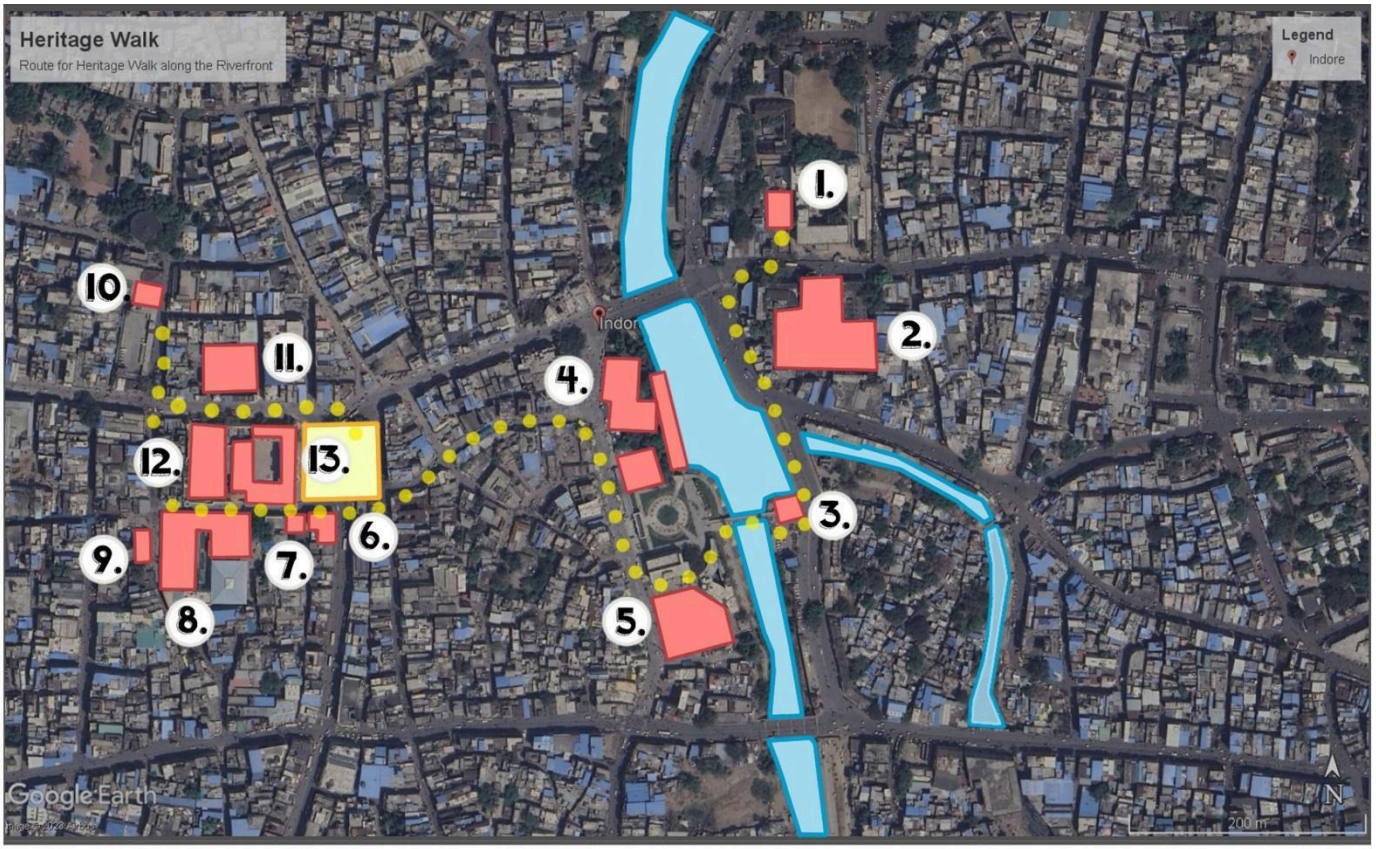


Figure 3: Evolution of Indore's Heritage Structures Along the Kanh Nadi.
Source: Author



1. Devalikar Kala Veethika

2. Boliya Sarkar ki Chattri

3. Sangam

4. Krishnapura ki Chattri

5. Veer Sawarkar market

7. Banke Bihari Temple

8. Gopal Mandir

9. Imam Bada

10. Durga Temple

11. Shiv Vilas Palace

12. Martand Temple

13. Rajwada Palace

Figure 4: Heritage Walk Route as per M.P. Tourism
Source: Author

D. *Holkars and Their Way of Life:* The Holkar dynasty was deeply connected with the river and had every aspect, every stage of their life interweaved with the Kanh Nadi. This can be understood in the underlying philosophy the Holkars followed to attain benightment or to reach to the divine presence. The Holkars were staunch devotees of lord Shiva, and they believed that shiva lived in all things which nature has provided us.
Thus, they way they conducted their lives was an act of devotion. Karma, Dharma and Dharana also known as perception were the three aspects of life they worked on. The karma aspect dealt with all the things a human being does daily. Like bathing, worshiping, fishing farming etc. These activities were directly linked to the river in the form of jal pooja, using Kanh's water for irrigation etc.
The second aspect is Dharma that is the path one should follow along with the society. This aspect included birth, mundane, janeu Sanskar, marriage, tirtha yatra and death. All these activities were also initiated or performed along the river using its sacred water.
The third aspect is Dharana that is perception. This was for those sects of society which were refrained from entering the temple at that day and age, but still wanted to pursue the path of enlightenment. Here direct association of the physical body the nature is not compulsory. This is how we perceive life from a distance. Thus, viewing the sacred poojas and worshiping with huge devotion from far was the key.

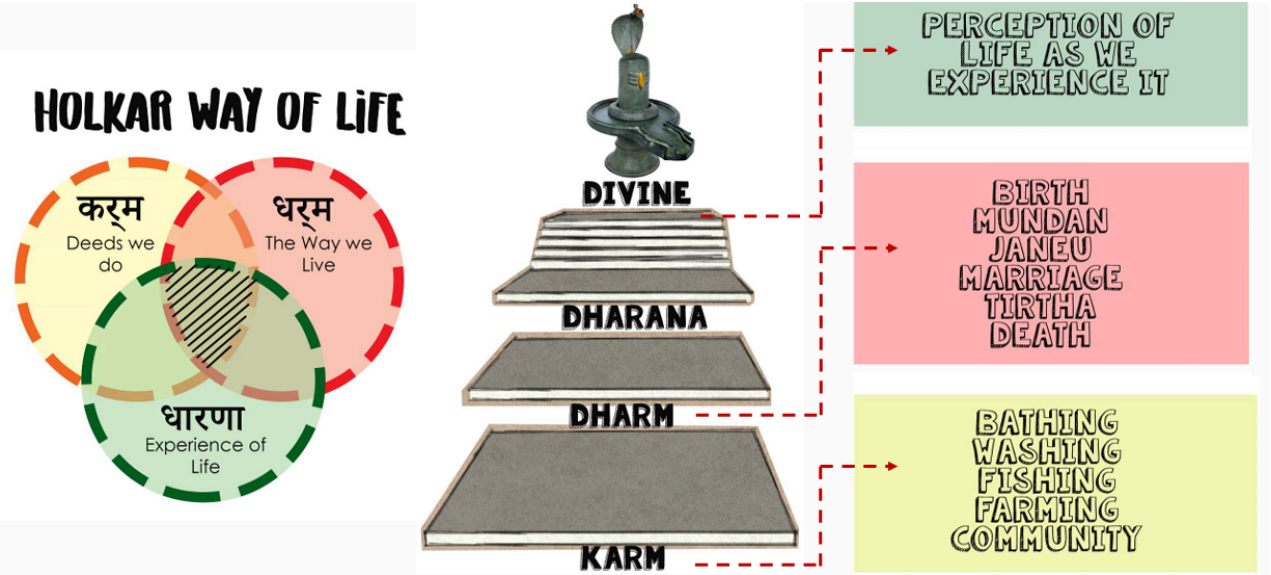


Figure 6: Philosophical Concept of The Holkar's Way of Life.
Source: Author

II. PHYSICAL MAPPING OF INDORE

A. *Land Use Mapping* - As per the latest development plan i.e. Indore Development Plan 2021 (Figure 1) there is no demarcation of floodplain boundaries along the river edge. In the more urbanized core of the city, we can see slums and some pucca houses along the river. As we move further away from the city core to the rural fringes of the city there are agricultural fields and the farmers use the river water along with ground water to irrigate their field. However, if we see the ABD master plan made by Smart City Indore for Rajwada precinct the riverfront development project was taken up for the Krishnapura area where they have mentioned certain guidelines that are to be followed. Demarcation of Environmentally Conserved Green Zone (CG) has been done to protect the river and the open space around it. [1]
In this zone below mentioned regulations are to be followed –

- It is an environmentally conserved land-use where no building construction is permitted.
- Development activities within this zone shall confirm to the regulations given here under;
- The green buffer along the Nallas/ Rivers. The open space along the river/tributary shall be minimum 30 meters from the highest water level.
- Development of road/mechanized parking/off-street parking as per regulation no. 8.6.8 shall be permissible in this zone by the competent authority.
- Plantation and sit outs, shall be permissible within this zone by the competent authority.[1]

This is done solely for the Krishnapura precinct only. Floodplain management guidelines and regulations have not been formulated for the whole city and this piecemeal approach of taking riverfront projects in isolation will not work. Below are the actual site conditions of the river stretch in different areas and with different land uses.

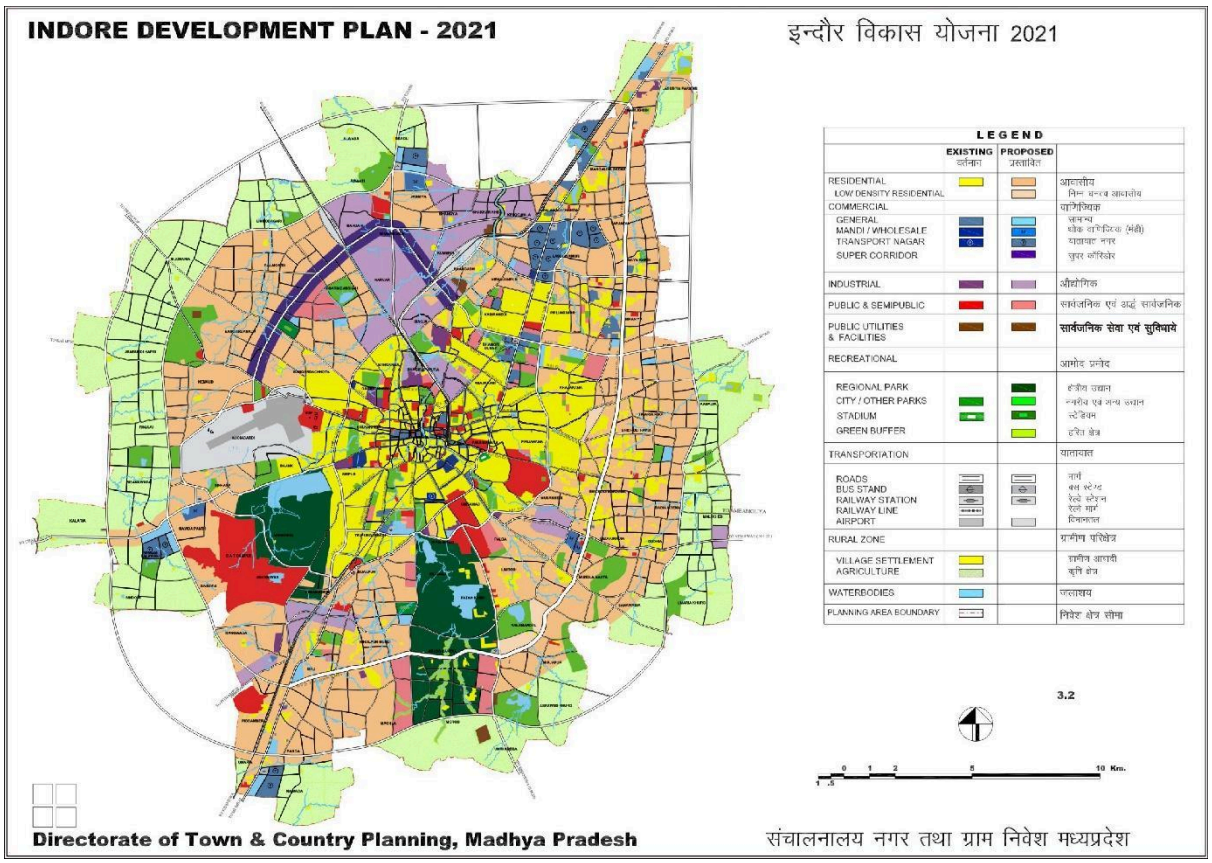


Figure 6: Indore Development Plan 2021
Source: Directorate of Town and Country Planning, Madhya Pradesh

B. *Sewage Mapping:* Kanh river at present is receiving domestic as well as industrial waste from 6 major nallahs (Figure 6) Present status of water environment supported with minimum one-year analytical data.
Total generation of sewage in Indore city is 200 MLD on the basis of present population. Indore Municipal Corporation is treating only 90 MLD of sewage, the rest is disposed without treatment into Kanh river. The said STP is located near Kabitkhedi. [4]

- Predominant sources contributing to various pollutants –
  The Indore city sewage is the main source of pollution in Kanh river. 200 MLD sewage is discharge into Khan River, 20, 000 kg/day BOD load is discharged as domestic effluent and around 2.2 MLD of trade effluent is generated which accounts for 220 Kg. per day of BOD load. [2]
- Sources of water pollution –
  1. Industrial - There are 163 trade effluent generating industries in Indore district. and the total effluent generated is to the tune of 2.2 MLD. The break up is as below –

Cluster name	No. effluent gene-rating industries	Quantity of effluent in MLD
Sanwer Road	106	0.622
Shivaji Nagar	03	0.004
Pologround	09	0.052
Laxmibai Nagar	07	0.077
Sc. No. 71	02	0.012
Navlakha	00	0.009
Piplia Rao	04	0.013
Palda	15	0.179
Rau	08	0.111
Mangliya	06	0.952
Rajoda	02	0.109
Barlai	00	0.0
Asrawad	01	0.053
Tejpur Gadbadi	00	0.0
Total	**163**	**2.199**

Table 1: Showing industries that generate trade effluents in Indore.
Source: M.P. Pollution Control Board, Action Plan for Critically Polluted Area, Indore

2. Domestic - Around 200 MLD of domestic waste generated from Indore city only 90 MLD of sewage is treated and the rest is disposed without treatment into Kanh river. Kanh river's water at downstream from kabitkhedi to Sanwer is being used for growing vegetables and irrigating the crops by the Farmers. It poses the high risk of contaminating food chain. [2]
3. Others (Agricultural runoff, leachate from MSW dump, illegal dump site etc.) - With overuse of fertilizers and pesticides leaching becomes a significant issue as well as percolates/ seepages/runoffs cause pollution hazards in areas. [2]

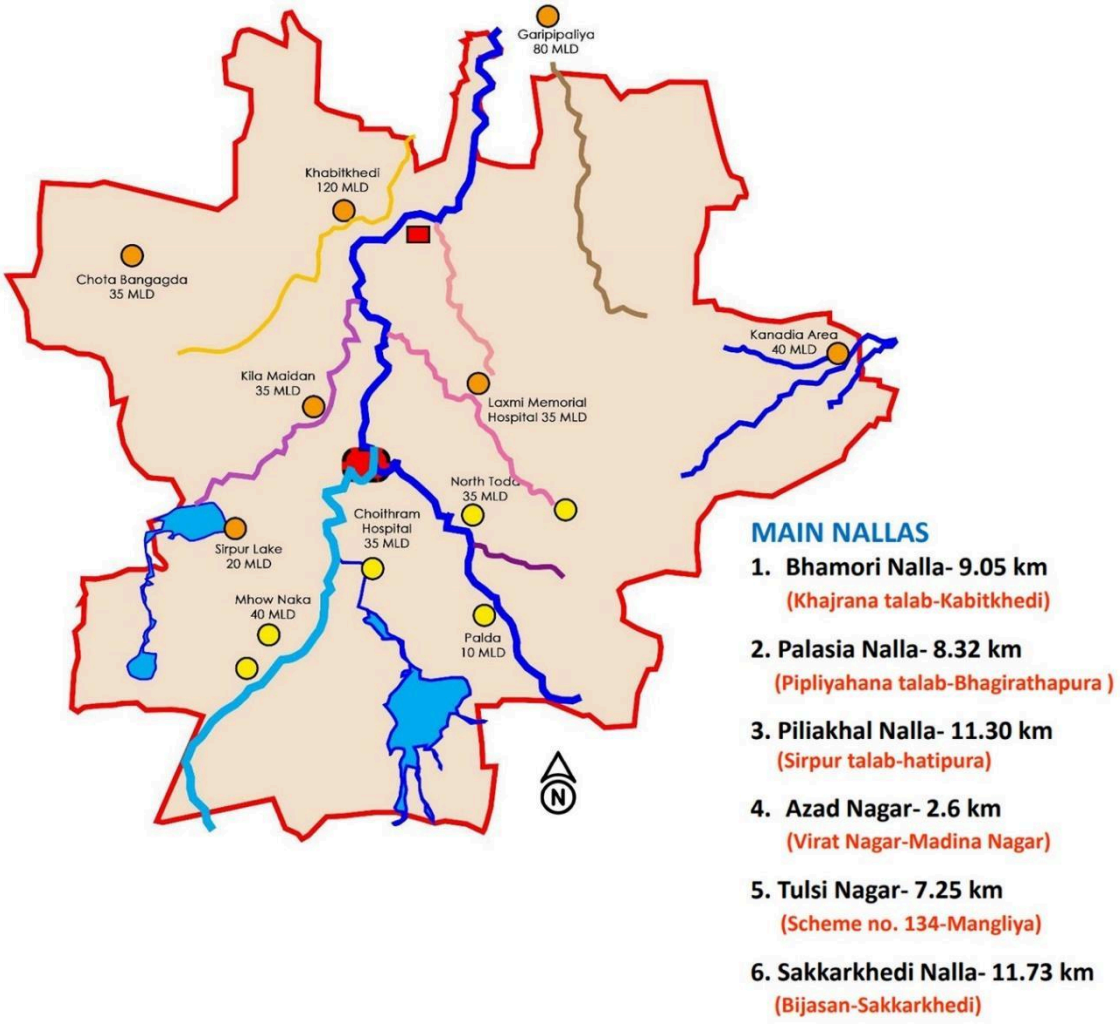


Figure 7: Map showing location of nallahs and STPs in Indore.
Source: Made by Author, adopted from DPR on Indore Sewerage System, Indore Municipal Corporation, Project AMRUT

III. *NATURAL MAPPING OF INDORE*

A. *Lakes and Waterbodies:* Indore city has several natural spaces which supports a rich biodiversity. The green spaces of the city are dominated by several parks and avenue plantations. The Ralamandal Wildlife Sanctuary, a biodiversity hotspot, is situated adjoining the municipal boundaries of the city. In terms of the blue spaces, Sirpur Lake, Fatan Khedi Lake, Bilawali Lakes are important sites.
Sirpur Wetland has been recently declared a Ramsar Site on the 7th of January 2022, with a total area of 161 ha. The area is also known as Pakshi Vihar (bird sanctuary). It is home to over 175 species of terrestrial plants, 6 species of macrophytes, 30 species of wild and cultivated fishes, 8 species of reptiles and amphibian, and more. During winters more than 130 different bird species can be seen around the lake (Ramsar Convention, 2022). The Lake is also designated as an Important Bird and Biodiversity Area (IBBA) by Birdlife International.

The Natural Asset map (Figure 7) of Indore has been prepared identifying the blue green spaces of city and classified into 11 land classes which accounts for 44.28% of the total area of the city. Agriculture occupies the largest area among the various land uses identified in the map followed by urban green spaces.[5]

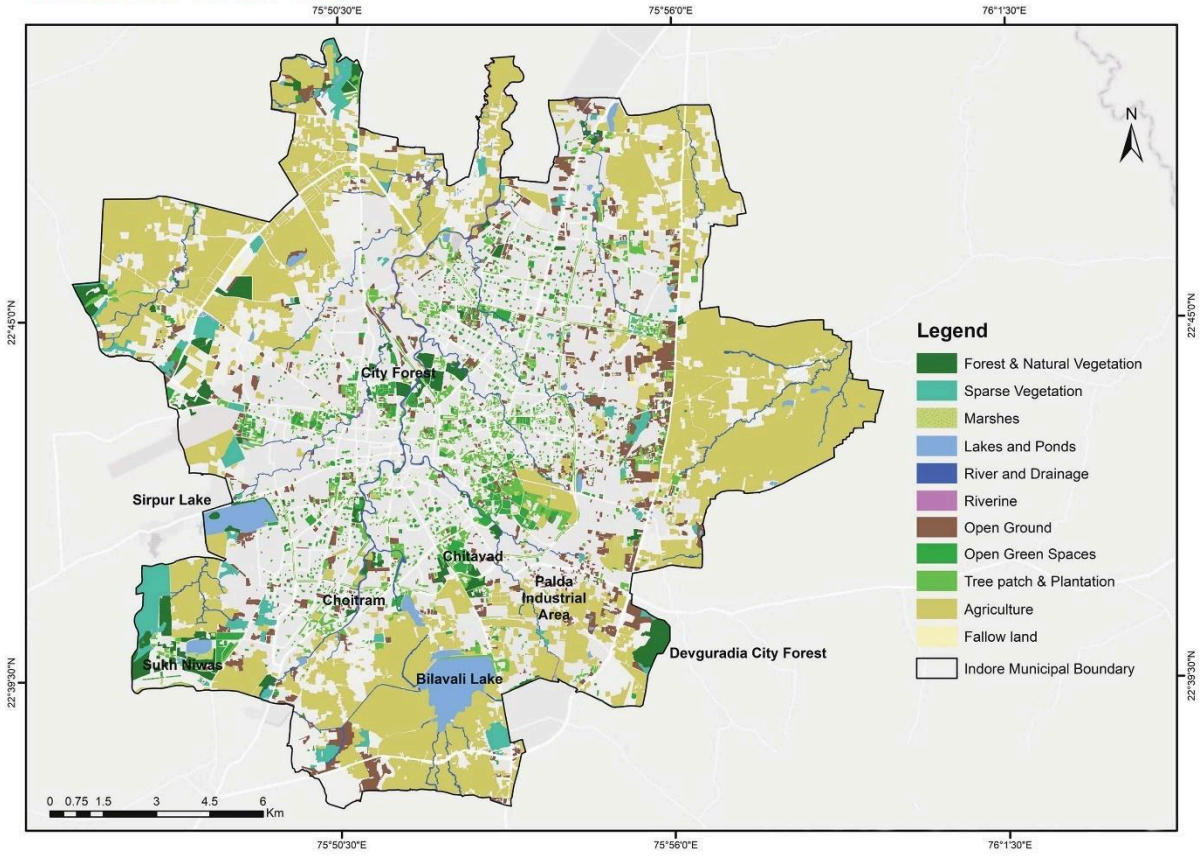


Figure 8: Map Showing Natural Assets of Indore City.
Source: City biodiversity Index, Indore 2023

S. No.	Class	Area (sq. km)	Area pecentage to total area
1	Forest / Natural vegetation	6.30	2.25
2	Sparse vegetation / scrub	6.46	2.31
3	Marshes	0.22	0.08
4	Open Green Spaces	3.01	1.08
5	Lakes and ponds	5.68	2.03
6	River / Drainage	2.16	0.77
7	Riverine Vegetation	0.43	0.15
8	Open ground	1.32	0.47
9	Tree patch and plantation	10.09	3.61
10	Agriculture	87.78	31.42
11	Fallow land	0.3	0.11
	Total	**123.75**	**44.28**

Table 2: Indore Municipal Corporation Natural Asset Area-wise Distribution
Source: City biodiversity Index, Indore 2023

B. *Tree Cover of Indore City:* Indore's land use comprises a high percent of built-up area followed by agricultural areas. As a result, the score for this indicator is low. To boost the score the IMC can identify suitable areas for tree as well as look into developing native tree green belts along roadsides, avenues and parks. [5]

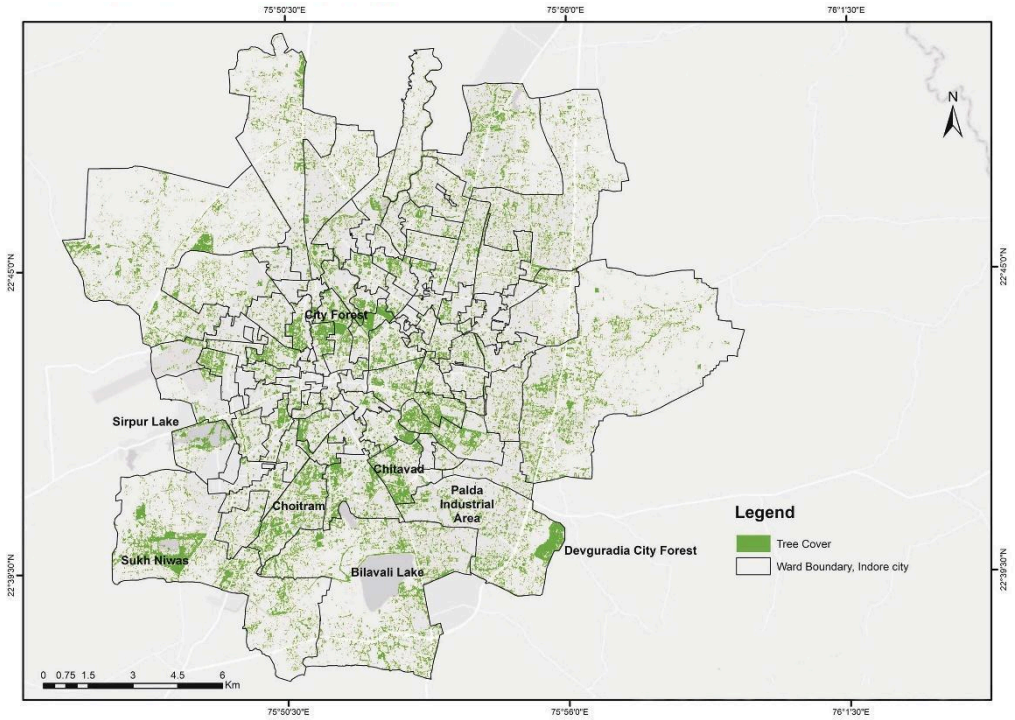


Figure 9: Map Showing Area of Tree Cover in Indore City.
Source: City biodiversity Index, Indore 2023

C. *Permeable Area in Indore City:* Indore's Total permeable area = Permeable land area + Water body = 12003.42 ha
Total Terrestrial area = 27232.78 ha
Proportion of total permeable area= 12003.42 ÷ 27232.78 × 100 therefore, 44.08% of the total land is permeable. [5]

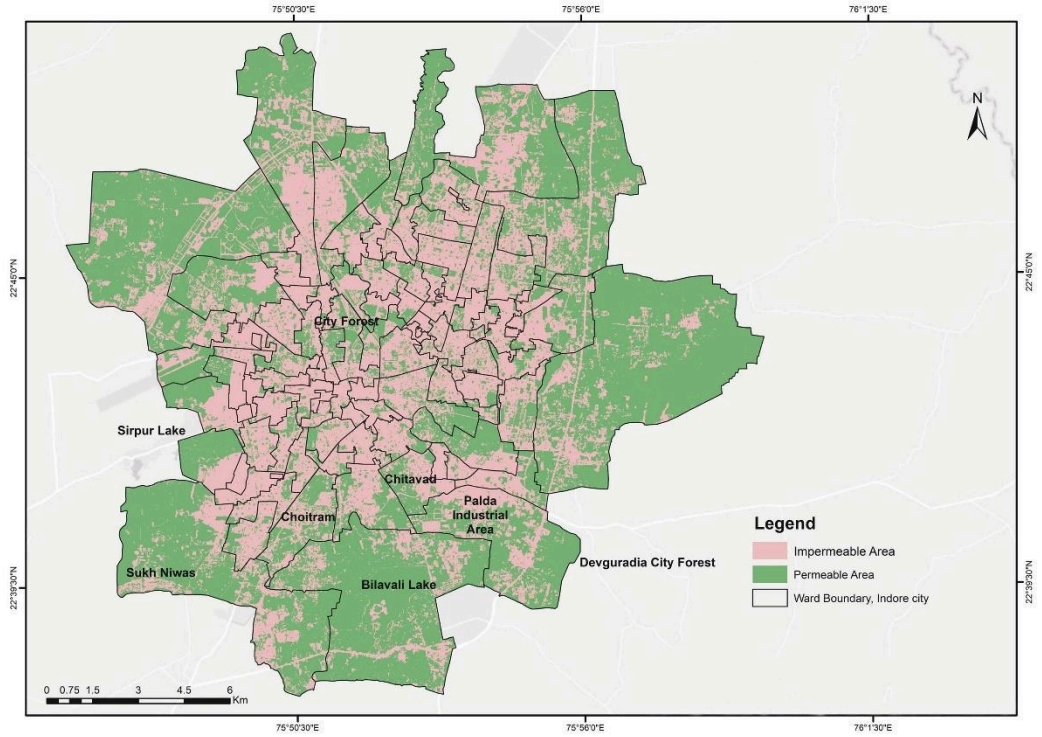


Figure 10: Map Showing Total Permeable Area of Indore City.
Source: City biodiversity Index, Indore 2023

D. *Plant and Tree Species of Indore:* The blue-green connectivity of the city can be improved by the conservation and restoration of the natural areas. With 31.4% of the land use under Agriculture, biodiversity friendly cultivation methods, technologies like Agroforestry, permaculture can be a focus of the Indore Municipal Corporation through

partnerships with the Agriculture and Forest departments. [5]

Figure 11: Showing Few Species which are Abundantly Found in Indore.
Source: City biodiversity Index, Indore 2023

IV. SITE INTRODUCTION

A. Master Plan Boundary Delineation: The masterplan boundary delineation is done on the basis of important heritage structure around the Krishnapura Precinct and important roads and nodes connecting it. The area is surrounded by Sanjay Setu Road on the eastern side, Resham gali on the western side, Mahtama Gandhi (M.G.) road on the northern side and Jawar Marg on the southern side.

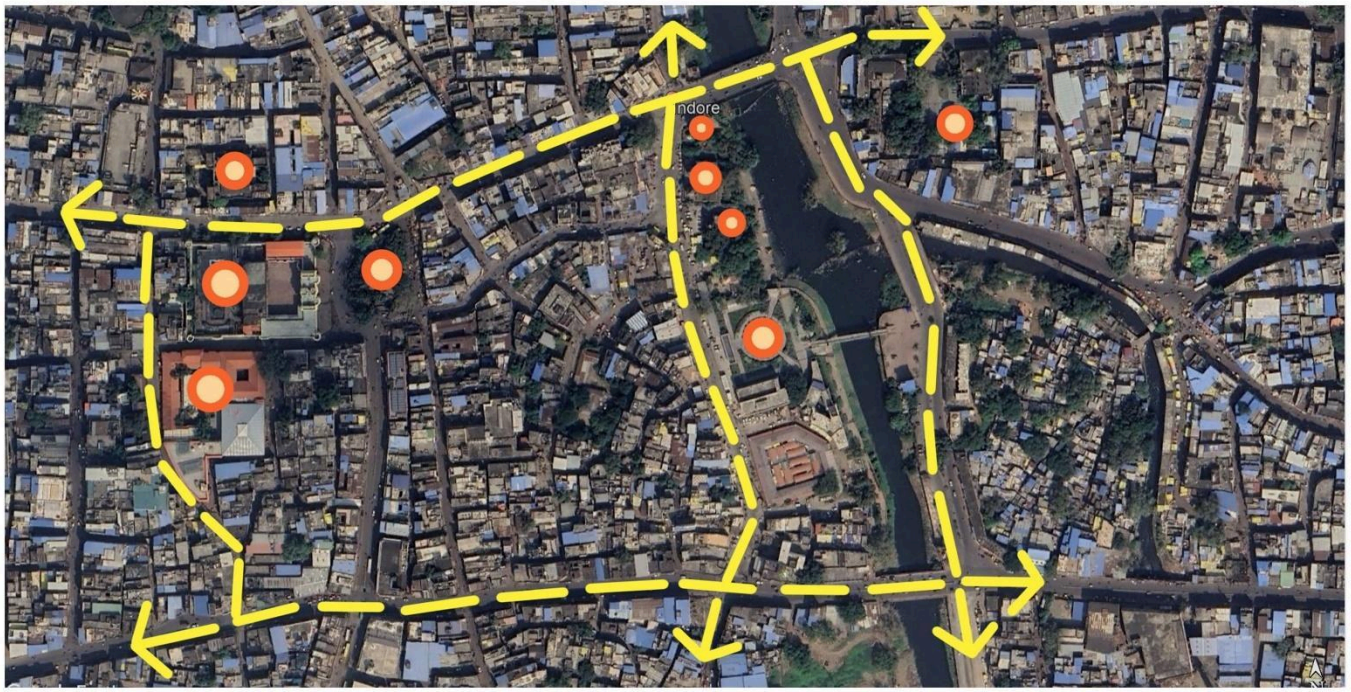


Figure 12: Showing Major Roads Surrounding the Krishnapura Precinct and the Heritage Structures.
Source: Author, adopted from Google Earth

B. Land Use in the Precinct: The land use pattern is majorly commercial areas and mixed use where the lower storeys are for commercial purposes and the upper storeys are residential. The major shops located in the precinct are of textile like cloth market, jewellery market (ada bazaar), sabji market (Veer Sawarkar market), hardware market (Bohra Bazaar), Gold and silver market which converts to a food street at night (Sarafaa Bazaar) and second hand or wholesale stationary or books market (Khajuri Bazaar).

Figure 13: Showing Land Use in the Precinct.
Source: Author, adopted from Google Earth

C. *Site Level Mapping:* The major site considered for the detailed intervention is of the Krishnapura Precinct having the important Holkar Chhatris and the Gangor Ghats which are abutting the river bank. This the area where Smart City Indore presented a proposal for riverfront development. Under this intervention a public garden namely, Maharaja Khatwang Public Garden was built below which a basement parking of 250 four wheelers was built. This garden also had a selfie point and a riverside walkway which is now completed abandoned and is not used by the public. 2 buildings were also built for accommodating the street side vendors which were relocated due to the road widening. These buildings are also not under used and are abandoned.

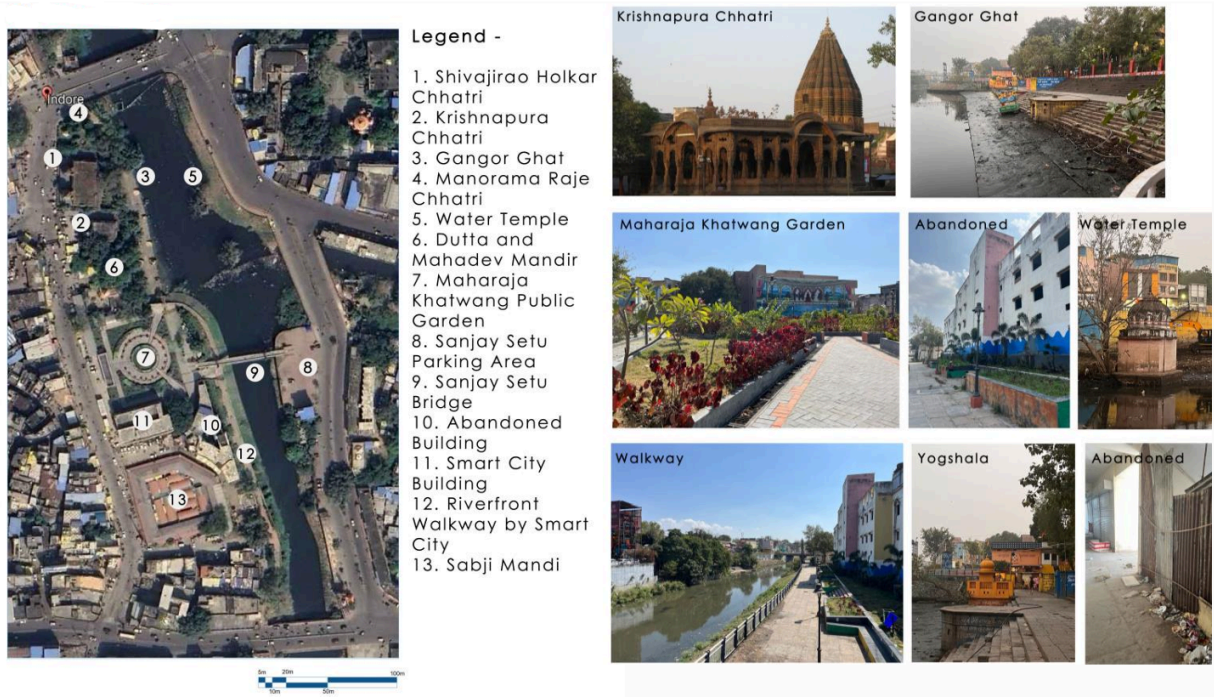


Figure 14: Showing Site Plan of the Krishnapura Precinct.
Source: Author, adopted from Google Earth

V. GLOBAL AND NATIVE BEST PRACTICES

A. *Parameters for Selecting Cases:* The parameters were decided from the site context, what it needed, what can be enhanced and what should be preserved. According to the visual cues the site, Krishnapura precinct gave.

Figure 15: Parameters for Case Study Selection Dictated by the Site Context.
Source: Author

B. *Case Studies:* Four case studies were selected namely Bishan Ang-Mo Kio Park, Singapore by Ramboll Studio; Restorative Landscape for Stamford, Connecticut; Badrinath Master Plan Development, Uttarakhand by INI Studio; Development of Iconic Tourist Sites in Somnath by INI Studio, to understand the best practices that were followed globally and locally.

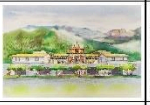
Parameters	CASE STUDY 1 Bishan Ang-Mo Kio Park, Singapore	CASE STUDY 2 Restorative Landscape for Stamford, Connecticut	CASE STUDY 3 Badrinath Masterplan Development, Uttarakhand	CASE STUDY 4 Development of Iconic Tourist Sites in Somnath
River Edge Treatment	Rather than another 24-meter wide concrete channel, parkland to serve as a flood plain. Use of Bio engineering methods. 	Grand Steps, a series of plinths and boulders which invite users to engage with the river's edge. 	Construction of ghats to access the river as well as protect it from flooding. 	Shore protection tetra pods were implied to control erosion. A beachfront park and promenade was developed 
River Pollution Management	Cleansing Biotope - The largest piece of the natural water purification and treatment system in the park. 	--	All public infrastructure related to services like water supply, sanitation and waste disposal have been overhauled. 	--
Cultural Integration	Waters Learning Trail s, 's a series of place based trails which encourage students to explore, discover and learn at ABC Waters sites. 	Wildf ower blooms and The Cherry Blossom Festival, the largest in New England, provide engaging experiences for park users. 	Identification of structures that could be removed and relocated to decongest and then define the temple precincts such that it wove in a sense of place. 	secondary sites having potential locatednear were identified developed as tourist attractions. Development of a networked circuit for local tourism with Somnath as its hub. 
River and Heritage Imageability	--	--	the temp e was physically bridged and visually linked across the river in an unobstructed linear connect with the entire town on the other side of the Alakanonda river. 	Grand axis from the temple straight to the approach road, relocating the existing defunct struc ures, obtaining a clear view of the temple throughout. 
Community engagement	children come and learn about the different flora and fauna of the stream, and to touch and experience the water. 	Great lawn, is an expansive green carpet that provides flexible space for large events and a setting for waterfront entertainment. 	The entire street network lead from the public plazas around the two lakes through the entire town on both banks of the river is upgraded resilience and navigability. 	cultural interventions like "Eco-haat" and rejuvenating the museum as a cultural village, help integrate the local community with activities related to tourism development. 

Table 3: Showing Comparative Analysis of the Cases Selected Against the Set Parameters.
Source: Author

C. *Literature Case Studies:* Two literature studies namely Dwarka (Dwarka: Lost and reclaimed: Planning for a resilient Landscape) and Varanasi (Ghats of Varanasi on the Ganga in India: Cultural Landscapes Reclaimed) were conducted to understand the intangible aspect of culture, heritage, traditions and folklore affecting the landscape design of the riverfront areas.

Parameters	Dwarka Lost and Reclaimed: Planning for a Resilient Landscape	Ghats of Varanasi on the Ganga in India: Cultural Landscape Reclaimed
Author, Publication,Date	Authors – Amrita Sinha and Shubhada Kamlapurkar Department of Landscape Architecture, University of Illinois at Urbana Champaign, USA , January 2014	Authors – Amrita Sinha and Heena Gujjar Tekton Volume 3, Issue 2, September 2016 pp. 36 – 57
Landscape of Pilgrimage	The spatial practices of pilgrimage—circumambulatory movement in walking, bathing in water bodies, worshipping in temples and shrines, among others—regenerate the cultural landscape and its sacred powers. The images of axial pillar linking the three worlds of earth, heaven, and underworld, are powerful because they signify victory over destructive forces of nature and creation of order out of chaos. These primordial images are charged with profound meanings communicated in stories of places.	Kashi's landscape and built environment have evolved as a medium for visualization of the divine. In obtaining darshan in shrines and temples, bathing in the kunds, walking, performing rituals, chanting, among other activities, the sense of auspicious is enhanced. The holiness of the landscape lies in presenting wholeness through representation of the cosmos. Five circumambulatory circuits—Kashi, Varanasi, Avimukta, Antargrina, and Vishvanath— are traced in pilgrim yatras.
Cultural Contribution	Dwarka is a site of memory as an enacted landscape of pilgrimage and an archive of fragments buried underground and scattered on the seabed at the coastal edge. Place myths, temples and shrines, pamphlets, local folk art, and songs create and buttress memory of Krishna's heroic feats and his eternal city.	The urban landscape of Varanasi is replete with vibrant folk art created by local artists. It can be found on building facades, street walls, water tower, steps, and on the boats. There are different types of art including paintings of gods and goddesses, murals, and sculptures. The themes, style, and color palette for narrative art depicting myths and legends that give identity to the ghats are modeled on urban folk art.
Sensitive Landscape approaches	Resilience thinking is about understanding the complexity of cultural and natural systems and their capacity to change in response to new conditions while still maintaining their functionality. Infrastructural landscapes based upon softer, looser ecological systems rather than fixed engineered structures perform better in that they have a greater capacity to adapt and regenerate.	The ghats in Varanasi are envisaged as a healthy landscape by reducing point source pollution in the Ganga and creating a clean land-water interface through public sanitation programs and design prototypes such as non-polluting bathing tanks, compost gardens, biofiltration basins, and ghat recycling center. Natural cleansing systems, such as wetlands and phytoremediation treat wastewater and increase biodiversity.
Ghat-scape	--	The ghats are the iconic image of Varanasi and of Hindu India. They are highly imageable in that they can be viewed in their entirety from the Ganga. The distant and near views generate a strong mental image in the observer. When experiencing the ghats on foot, the proximate senses are fully engaged but the interpretation of visual elements is hindered. The visitor on a boat on the Ganga, away from the hustle and bustle of the city, has the opportunity to see the panoramic skyline of the ghats.
Heritage Walk	eco-cultural heritage trail, in which the pilgrims will be able to experience the landscape in walking and close interactions with nature. A heightened awareness of the environment, 'Krishna consciousness' can be induced as they visit sites associated with the life of Krisnna, listen to discourses on environmentalism and spirituality, and participate in eco-restoration projects.	Movement is studied at three levels: from urban transportation hubs to the ghats, from adjoining neighborhoods to the ghats, and between the ghats themselves. Heritage trails proposed on six ghats: Assi Ghat, Kedar Ghat, Dashashwamedh Ghat, Manikarnika Ghat, Panchganga Ghat, and Adi Keshava Ghat and the historic buildings and temples are marked on the detailed maps. Each ghat has its own small loop of heritage trail that connects its historic buildings and temples.

Table 4: Showing Comparative Analysis of the Literature Studies Against the Set Parameters.
Source: Author

VI. SITE ANALYSIS

A. *Site Sections:* During the site visit detailed site sections were made to understand the spot elevation of the whole area.

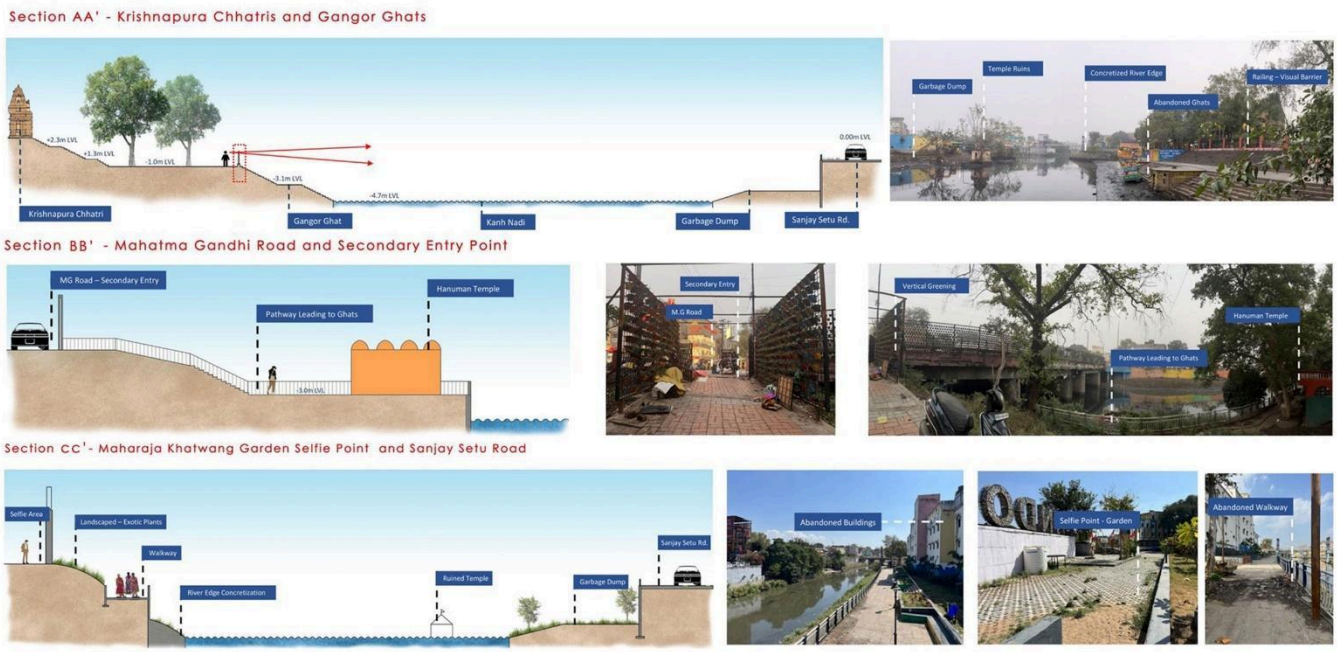


Figure 16: Showing Site Sections at Various Points.
Source: Author

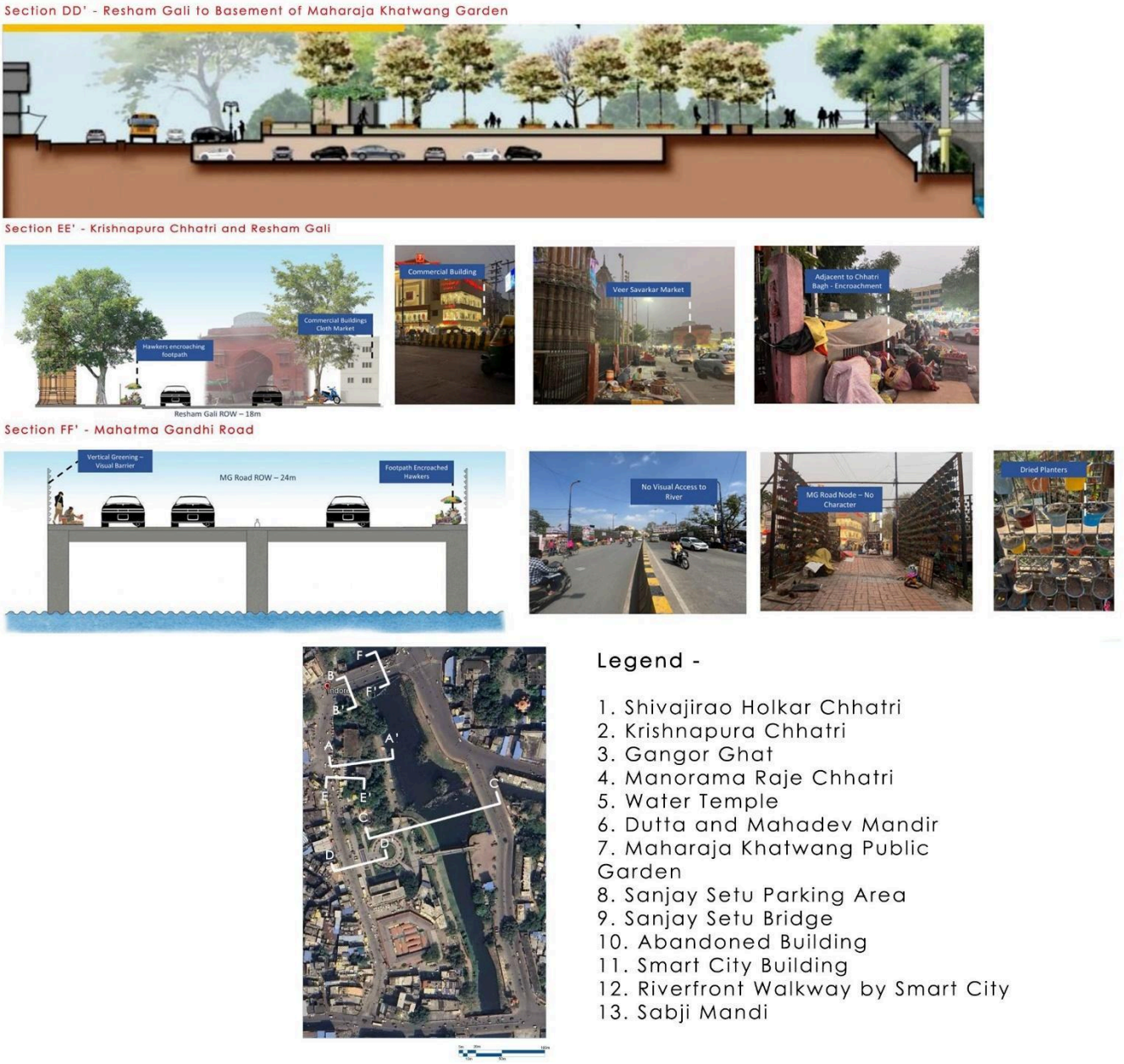


Figure 17: Showing Site Sections at Various Points.
Source: Author

B. *Site Issue Mapping:* All the major issues were mapped and a visual representation of it was recorded through actual site photograph. The site has a lot of potential if designed properly and cohesively as it is the core area of the city and has a rich heritage history associated with it. Visibility to river and opening the riverfront to the public is of utmost importance as it will establish an emotional connect between the community and the riverfront. Abandoned structures must be put to better use and a sensitive, historically accurate architectural language should be used in the Krishnapura precinct.

S.No.	Issue	Description
1.	Heritage and the River	The built heritage and the riverfront have become two separate entities which diminishes its relationship. It reduces the value of the river as a mere water feature which is meant for sightseeing.
2.	Cultural Association of the Community	The temple ghats abutting the river which once had cultural significance to them, today has lost all meaning. The temples and the river have become a mere tourist attraction sight. The sense of belonging of the community towards the river and the heritage has eroded completely.
3.	Degraded Riverine Ecology	Due to excessive concretisation of the river edge, natural ecology of the river is lost. This decreases infiltration rate, increases risk of flooding in the monsoon season and robs the city from a beautiful view of a natural and healthy river ecosystem.
4.	Node – Based Landmark Development	The riverfront is accessed by the users for specific uses and is not looked upon holistically. This type of development could be reason for ignored and abandoned open spaces which have a potential of becoming vibrant and dynamic urban fronts.
5.	Inappropriate Design Language	The sanjay-setu bridge, the railings of the temple complexes etc. takes away from the essence of the site. The design language does not seem harmonious nor does it respond to the site and its context.

Table 5: Major Issues that were Recorded on Site.
Source: Author

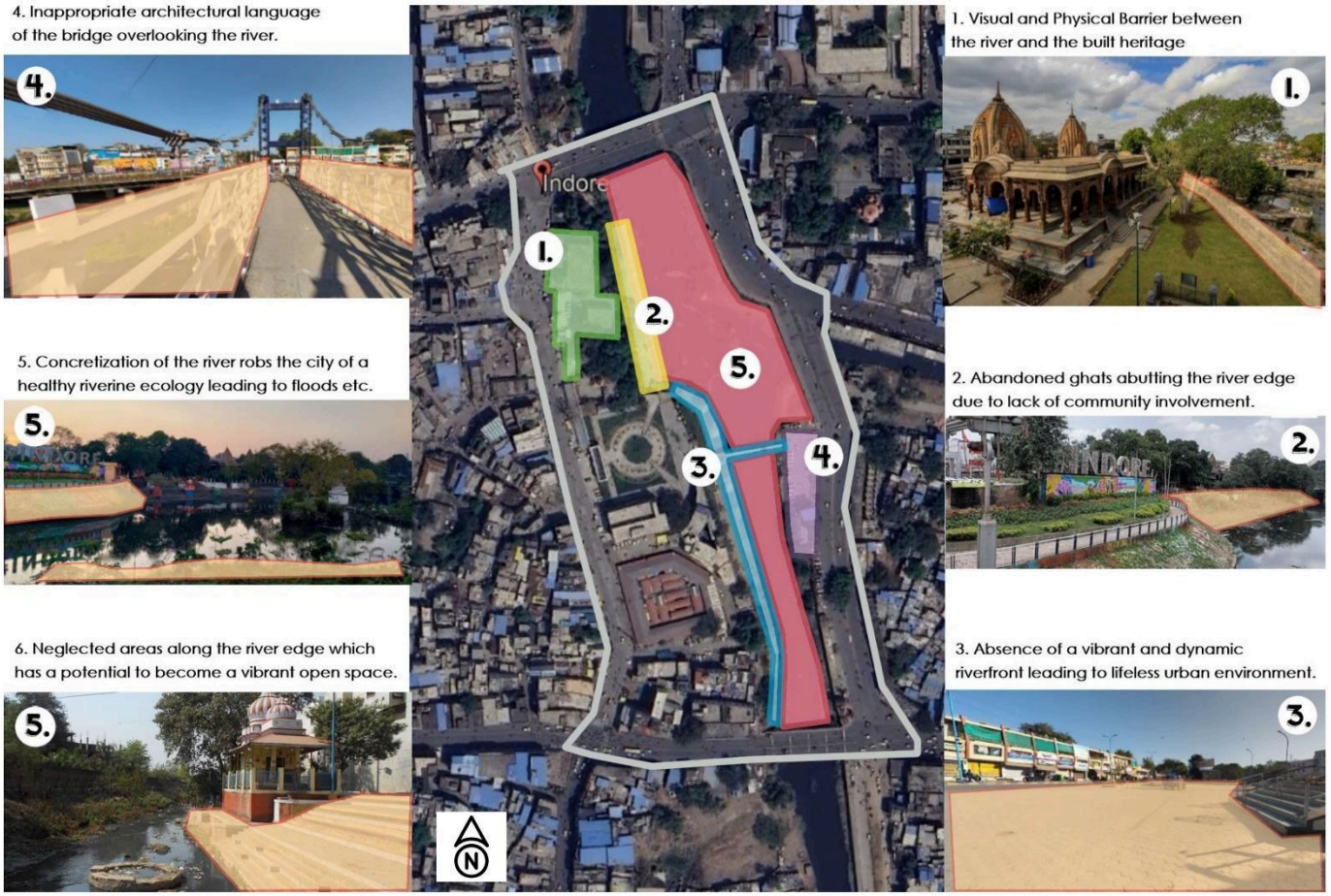


Figure 18: Actual Site Photographs Depicting the Major Issues that are Recorded.
Source: Author, adopted from Google Earth

C. *Activity Mapping:* Activity mapping is done in layers. Figure 18 represents what activity does each street has and thus the street character of different streets which is enclosing the Krishnapura Chattris is also defined by the same.

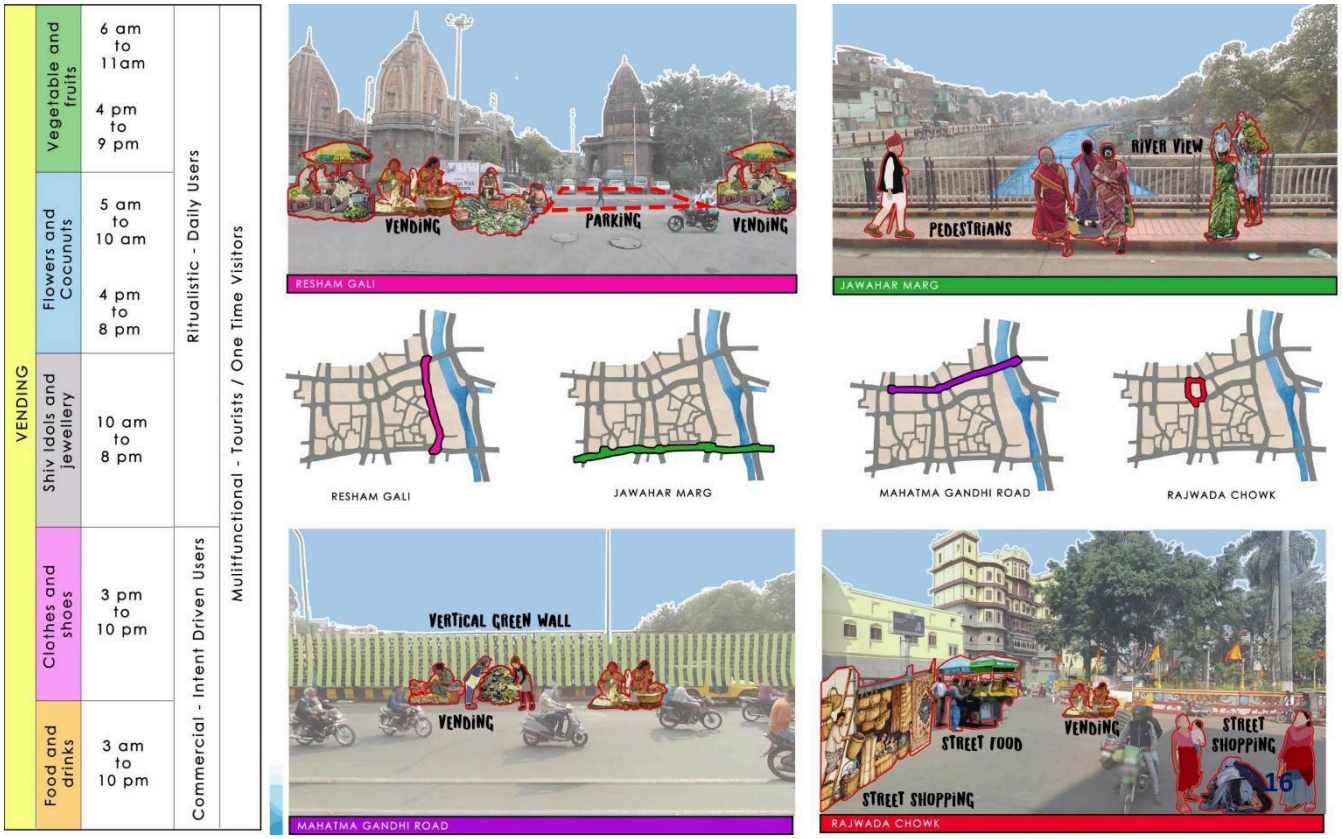


Figure 19: Activity Mapping on the Major Streets Around the Precinct.
Source: Author, adopted from Google Earth

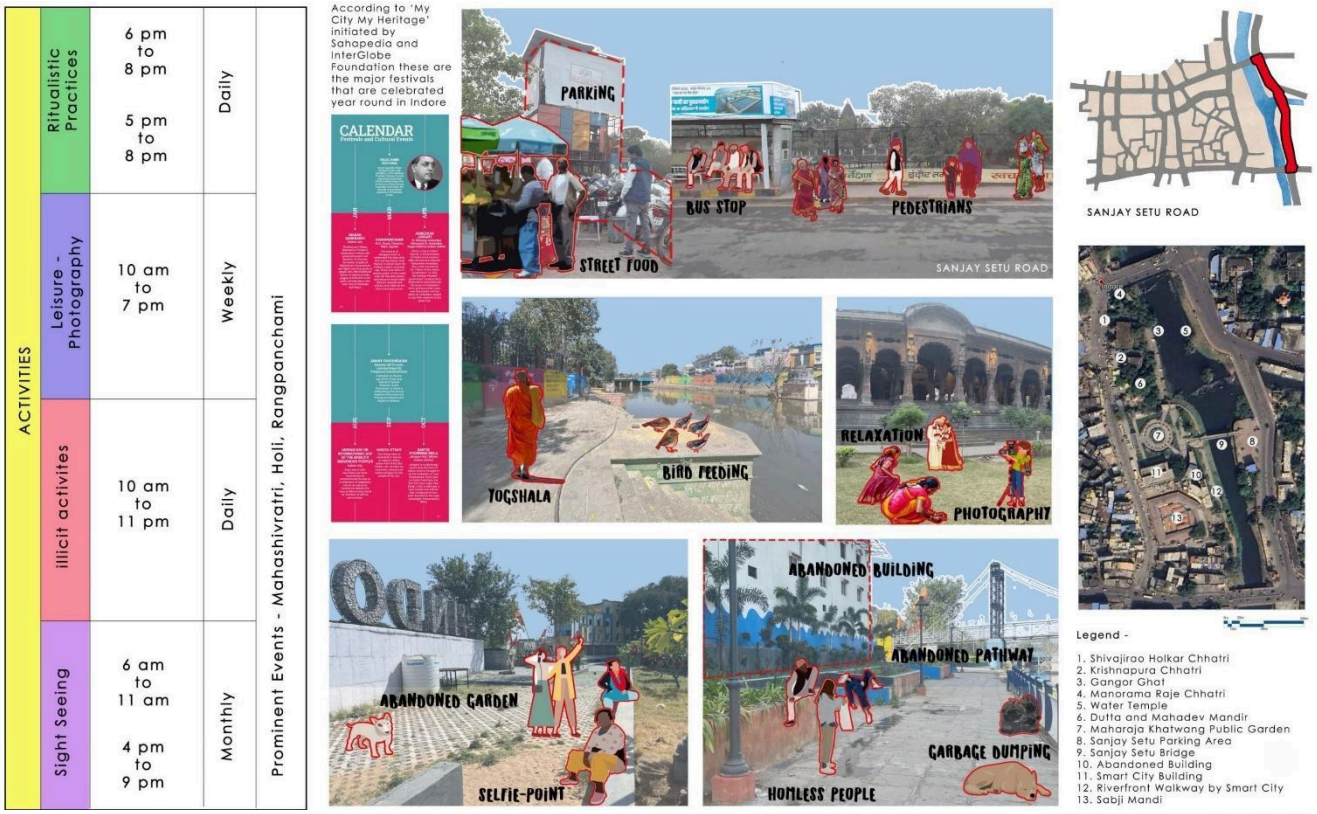


Figure 20: Activity Mapping Inside the Krishnapura Precinct.

Source: Author, adopted from Google Earth

VII. DESIGN STRATEGIES USED

A. *Improving Street Character:* Improved mobility experience starts with good well designed and efficient street character. The aim is to provide proper landscaping elements and define a street with its unique character.

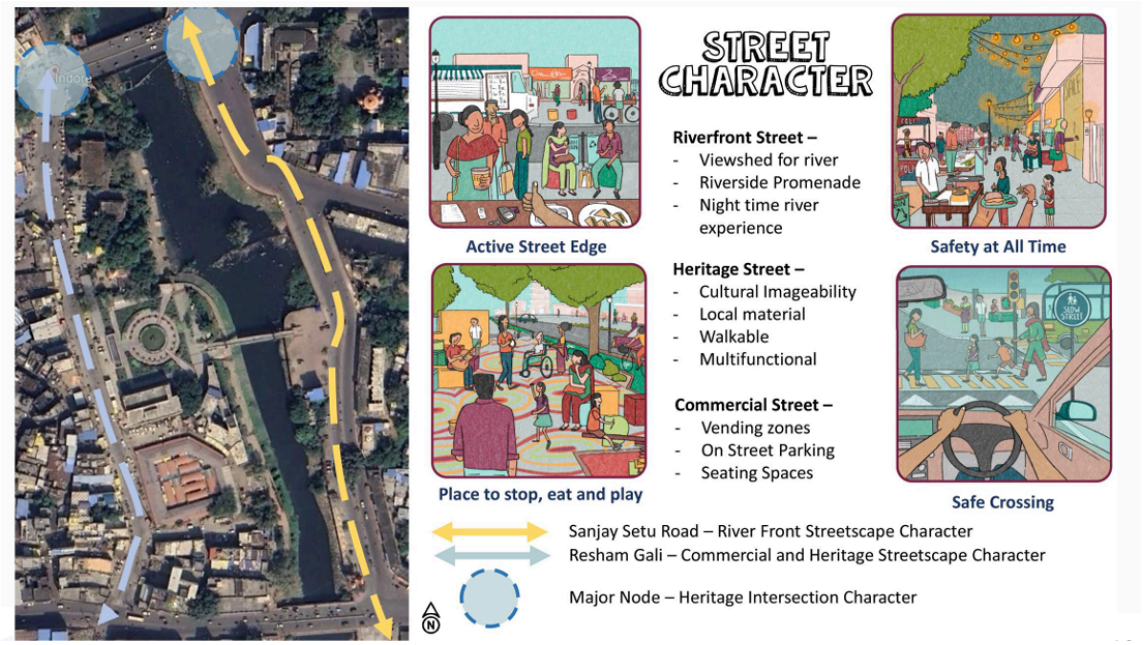


Figure 21: Streetscape Character and Elements.
Source: Author, adopted from ITDP Healthy Streets Design Workbook

B. *Reclaiming Public Areas:* The parking lots that are provided are being misused as people are leaving their vehicles for undesirable lengths of time. These areas can be redesigned and provide vital areas for public plazas. These points also act as a good vantage point for viewing the ghats and the river from a distance creating scenic views. Thus, the Sanjay Setu Street can have such bulb outs for enjoying the river and the ghats from a distance.

Figure 22: Extensive and Unmonitored Parking Areas.
Source: Author, adopted from Google Earth

C. *Rethinking Abandoned Structures:* The structures that were meant to provide accommodation to the street vendors have now become a breeding ground for illicit activities. Because of the closed nature, hawkers did not relocate to this place. The floor space consumed by these buildings in such a prime area can be put to better use.

Figure 23: Abandoned Buildings Eating Away Public Space.
Source: Author, adopted from Google Earth

D. *Redesigning the Public Garden:* The surrounding land use being predominantly commercial and mixed use does not support the function of the garden and thus, this place remains deserted majority of the time. The garden lacks shading devices and proper landscape elements. The garden has a selfie point which is a very odd attraction point abutting a prominent heritage structure.

Figure 24: Public Garden and Selfie Point, Odd Spaces in a Heritage Precinct.
Source: Author, adopted from Google Earth

VIII. DESIGN PROPOSAL

A. Detailed Design Proposal: The proposal has been formulated keeping in mind the Holkar way of life and the elements in the design cater to the three aspects of the Holkar philosophy i.e. Karma, Dharma and Dharana.

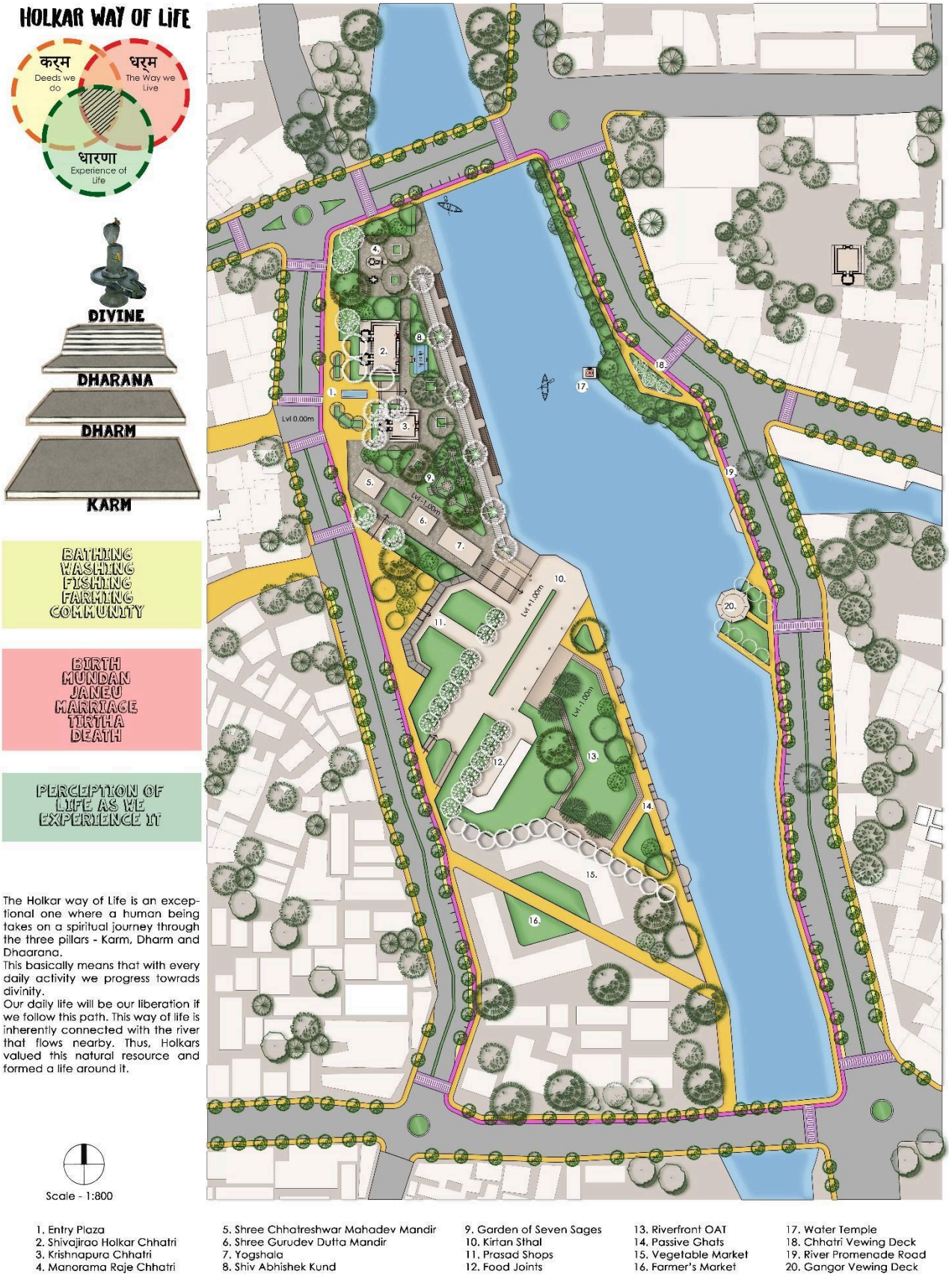


Figure 25: Detailed Design Proposal for the Krishnapura Heritage Precinct.
Source: Author

B. *Zone l:* The Zone 1 represents the aspect of Karma. This zone supports daily activities of the users. Thus, the users which are going to visit the temple on a daily basis will have all the facilities like doing their daily rituals, purchasing the pooja items and mediating in the garden as well.

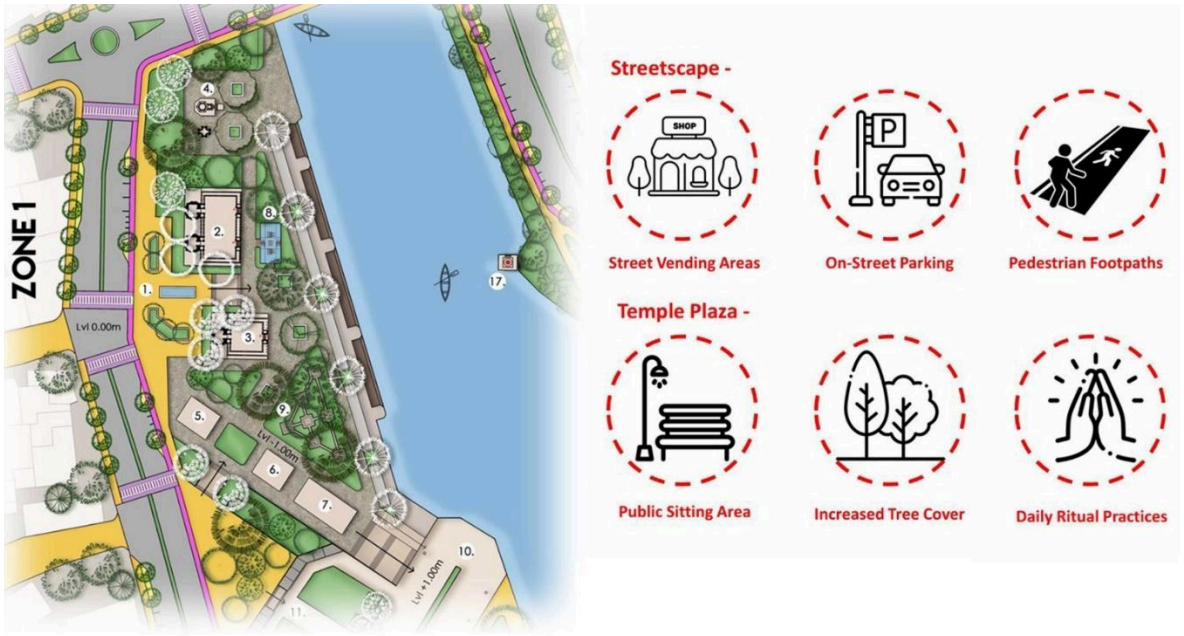


Figure 26: Zone 1 – Karma.
Source: Author

1) *Designed Section of Zone 1:* The section of this zone marks the entry to the Krishnapura Chattris. A feature wall is designed in a contemporary style and has been painted with traditional Gond art of Madhya Pradesh. These wall murals are telling the story of how preserving water is the need of the future. Such practices give the design a native feel and the community feels connected to the place.

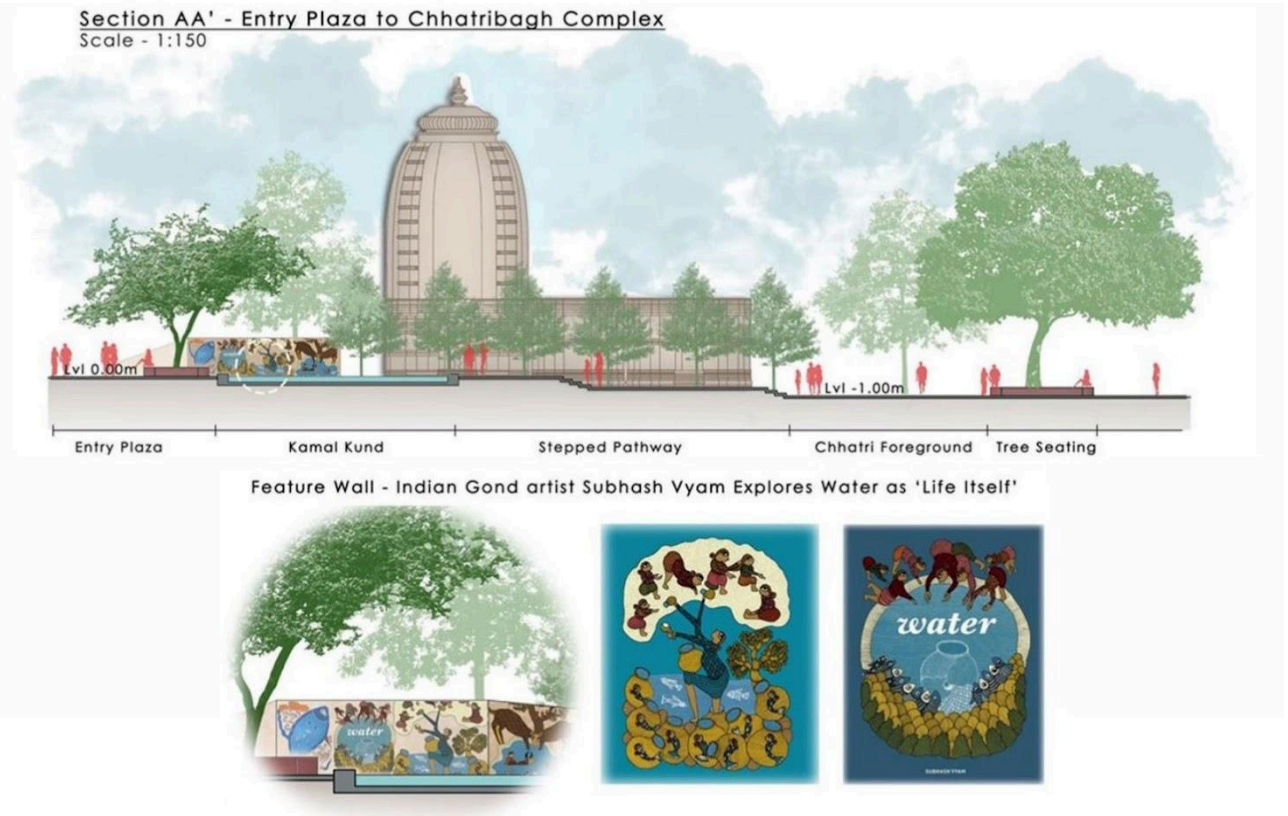


Figure 27: Section Showing the Entry to the Krishnapura Precinct.
Source: Author

2) *Planting Scheme and Material Palette of Zone 1:* The objective of planting here is to frame the views and to provide shading. And the materials used are identical to the heritage structures to maintain visual uniformity.

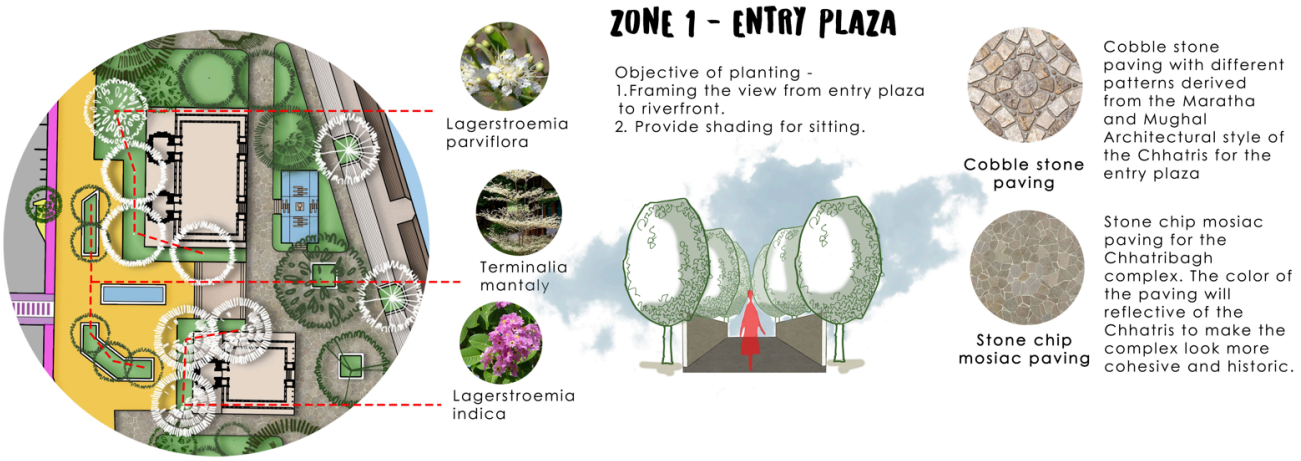


Figure 28: Planting and Material Palette of Zone 1.
Source: Author

C. *Zone 2:* The Zone 2 represents the aspect of Dharma. This zone supports exclusive as well as community driven activities in the multipurpose urban plaza such as kirtan, celebration of festivals, classical music concerts with the backdrop of the river and its natural beauty. For leisure purposes an open-air theater is designed for the users to just sit and relax by the river side and enjoy the views. For generating economy and boosting local employment commercial activities like handicraft exhibition, textile exhibition and café spaces are also designated in the urban plaza.

Figure 29: Zone 2 – Multifunctional Urban Plaza.
Source: Author

1) *Designed Section of Zone 2:* The section of this zone marks the entry to the Urban Plaza and the riverfront. The plaza is weather proof. A design element of the traditional Chattri column has been introduced and repeated throughout the design which can be used to mount fabric for weather protection as and when needed. This feature of the column makes the plaza functional during the day as well and provides imageability by giving the users a thing to remember the precinct by.

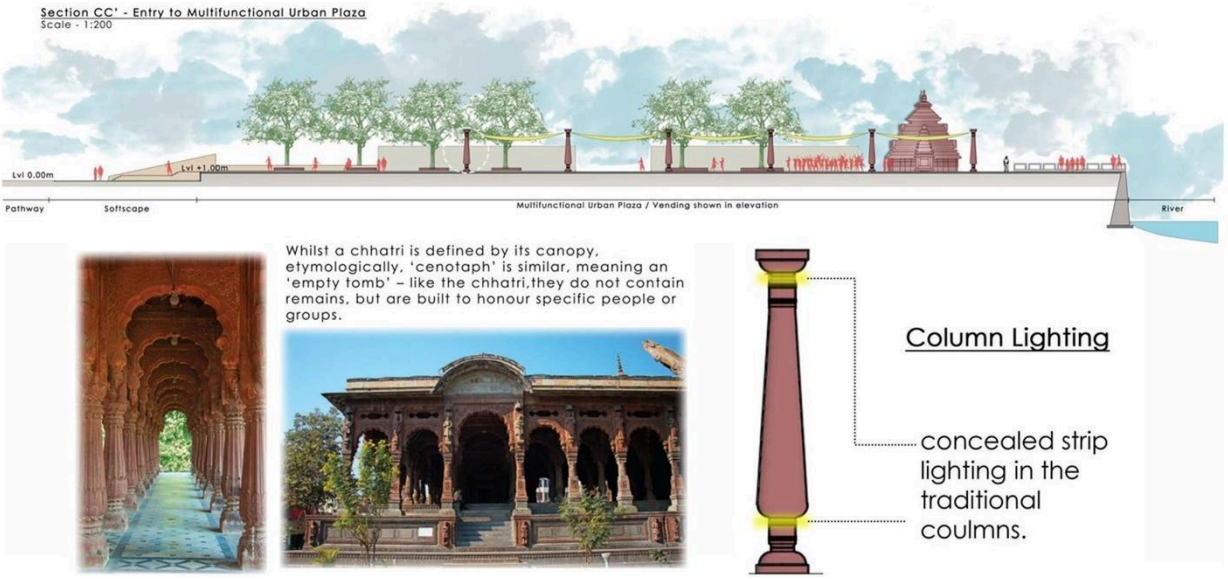


Figure 30: Section Showing the Urban Plaza and the Traditional Column.
Source: Author

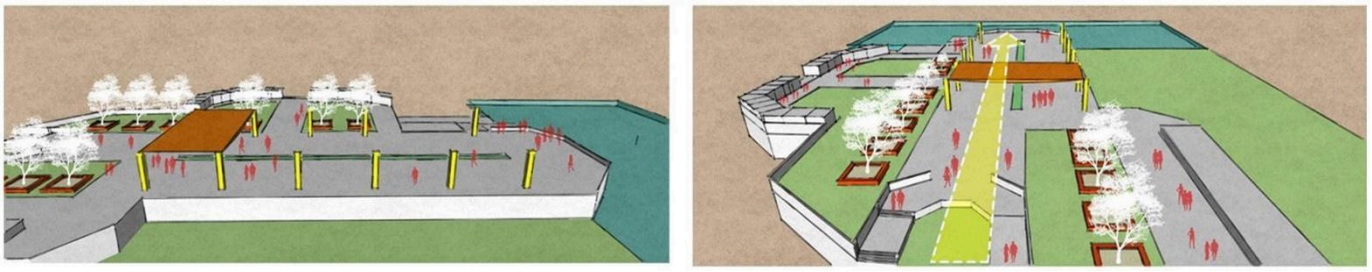


Figure 31: 3D View of the Urban Plaza and its Multipurpose Nature.
Source: Author

2) *Planting Scheme and Material palette of Zone 2:* The objective of planting in this zone is to provide shade and create a visual axis directing the view towards the river. The material selection is based on durability and to maintain visual interest in the large urban plaza.

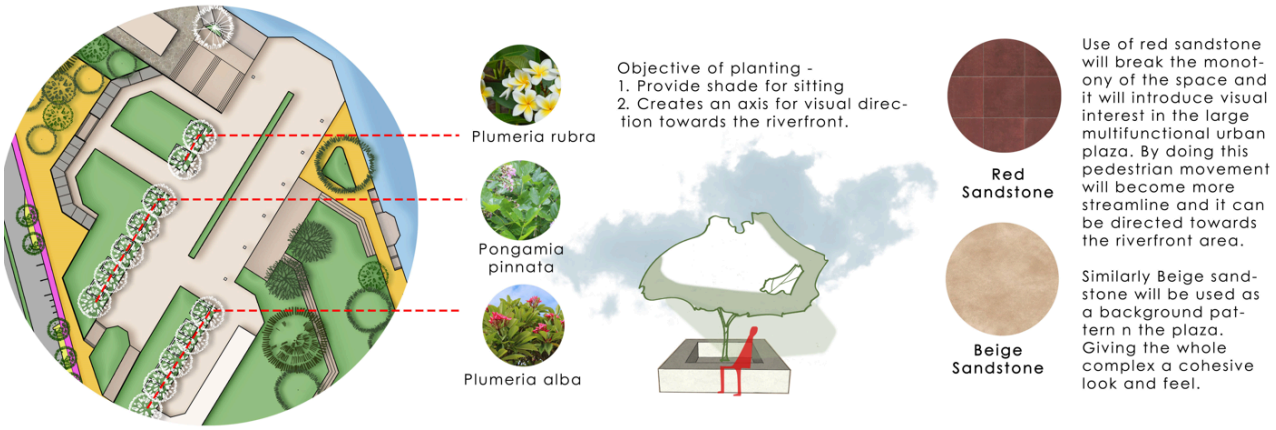


Figure 32: Planting and Material Palette of Zone 2.
Source: Author

D. *Zone 3 and 4:* The Zone 3 and 4 represents the aspect of Dharana. This zone supports viewing the ghats and the ceremonies of the community from a distance and appreciating the beautiful portrayal of culture and nature meeting. These zones have spaces to sit and relax, has promenading walkways and also a cycle track which encloses the whole Krishnapura precinct. The design language of the gazebo has been synchronized with that of the Chattris to give the

whole area a cohesive look.

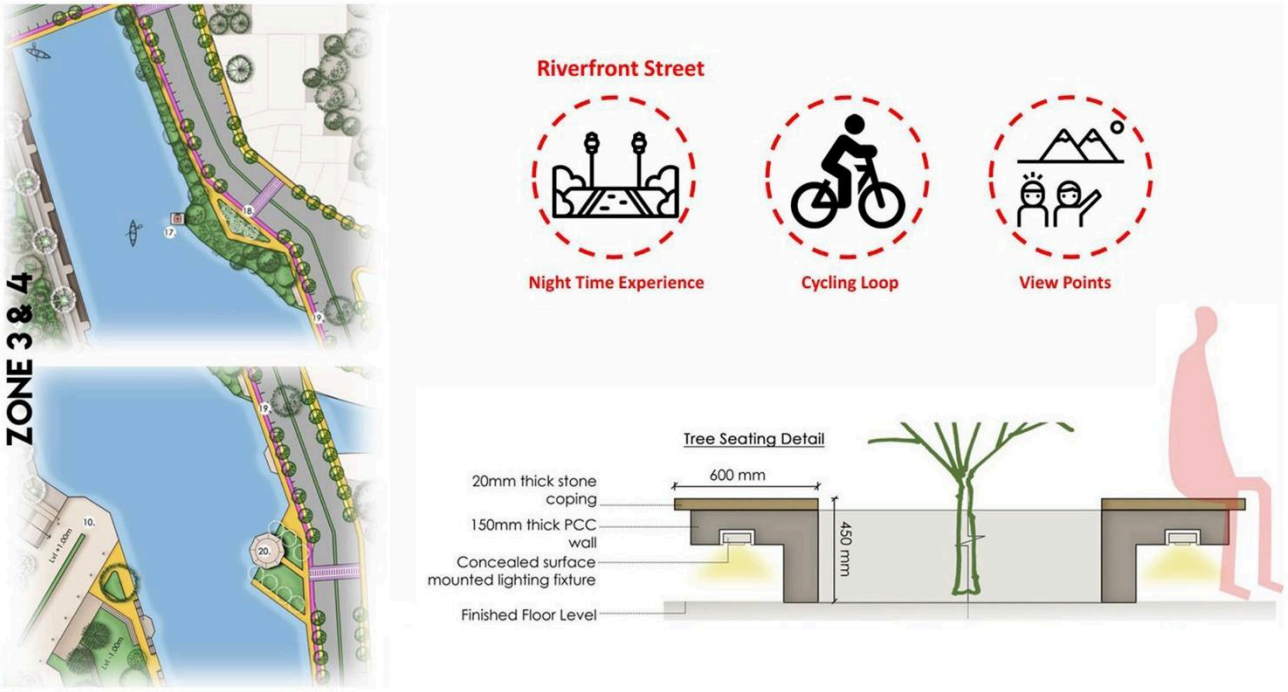


Figure 33: Zone 3 and 4 Depicting the Aspect of Dharana i.e. Perception.
Source: Author

1) *Designed Section of Zone 3 and 4:* The section of this zone marks the Chattri viewing deck which follows the traditional Indo-Mughal language as the Chattris architectural style is. The Sanjay Setu Street Has been transformed by adding a cycling loop which encloses the Krishnapura Chattri.
From the viewing deck one can observe and see the dynamism of the ghats. The Gangor ghat and the designed ghat which can be accessed from the open-air theater. As the Gangor Ghat is a heritage structure, in the design it has been retrofitted with the traditional columns to make shaded places along the ghatscapes.

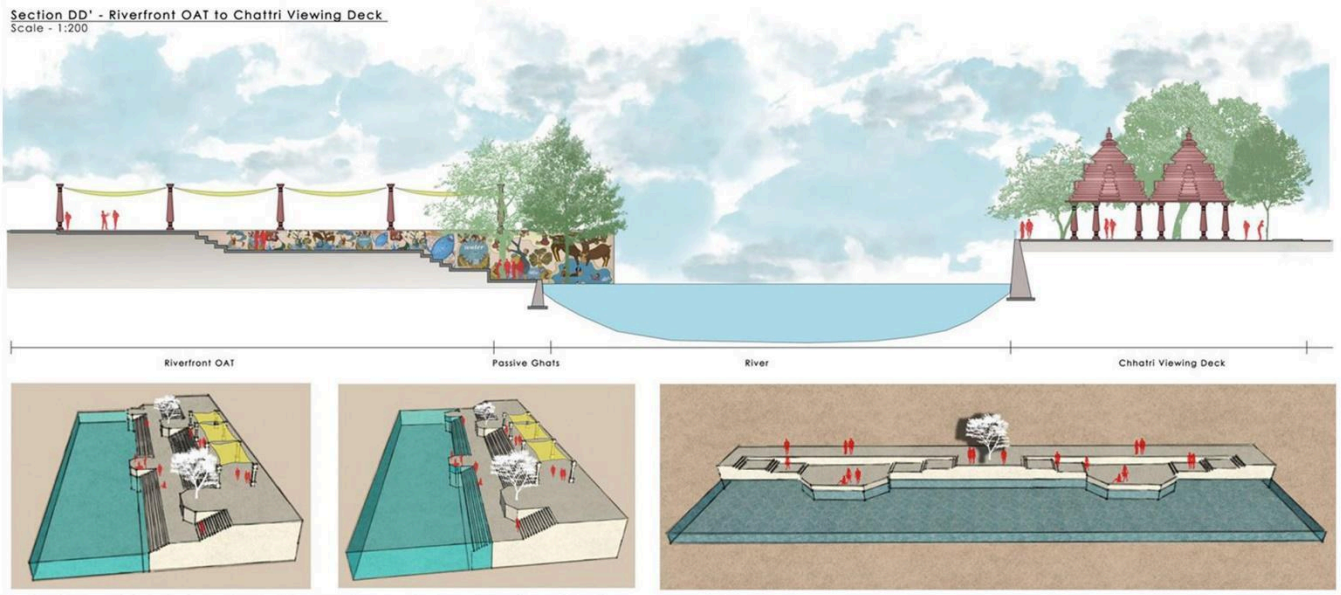


Figure 34: Section Showing the Chattri Viewing Deck and the Ghatscape.
Source: Author

2) *Planting Scheme and Material palette of Zone 3 and 4:* The objective of planting in this zone is to reclaim the dump yard by the riverside. Plantation that can sustain treated waste waste and frequent inundation will be planted.

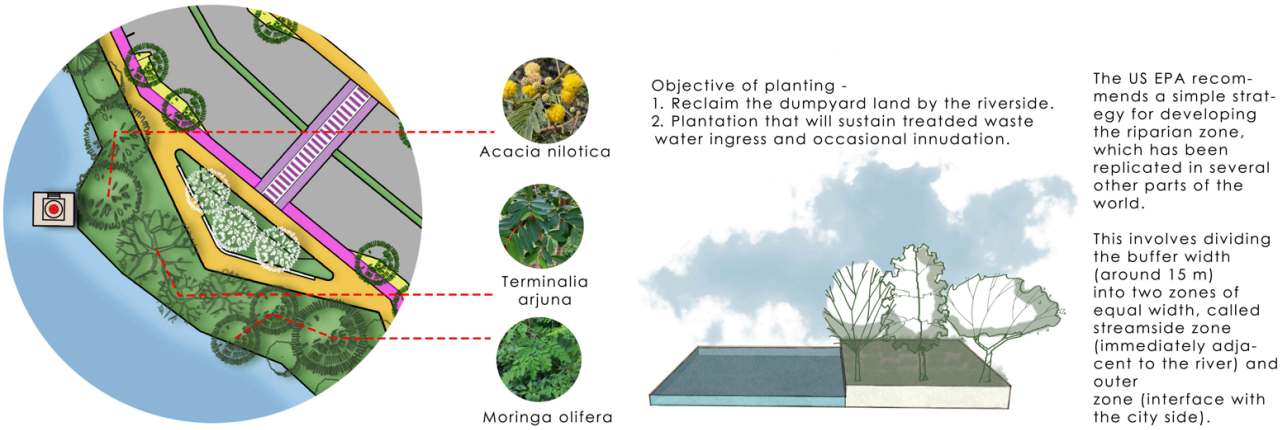


Figure 35: Planting and Material Palette of Zone 2.
Source: Author

IX. REVISED HERITAGE WALK ROUTE

Before the intervention there were only 9 dedicated spots of heritage walk around the riverfront and after the intervention the spots has increased to 14.

Figure 36: Master Plan Showing the Revised Heritage Walk Route.
Source: Author

X. CITY LEVEL POLICIES AND GUIDELINES