CONSERVATION OF SACRED LANDSCAPES, A CASE STUDY OF SAPT SAGAR, UJJAIN

MASTERS OF LANDSCAPE ARCHITECTURE

OORVI SINGH

2015MLA014

SCHOOL OF PLANNING AND ARCHITECTURE, BHOPAL

NEELBAD ROAD, BHAURI, BHOPAL - 462030

MAY, 2017

MASTERS OF LANDSCAPE ARCHITECTURE

OORVI SINGH

2015MLA014

Under guidance of:
Ar. Sonal Tiwari

SCHOOL OF PLANNING AND ARCHITECTURE, BHOPAL

NEELBAD ROAD, BHAURI, BHOPAL - 462030

MAY, 2017

Department of Architecture

School of Planning and Architecture, Bhopal

Declaration

I, OORVI SINGH, **Scholar No. 2015MLA014**, hereby declare that the thesis titled **"CONSERVATION OF SACRED LANDSCAPES, A CASE STUDY OF SAPT SAGAR, UJJAIN."** submitted by me in partial fulfilment for the award of Master of Landscape Architecture in School of Planning and Architecture Bhopal, India, is a record of bonafide work carried out by me. The matter embodied in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

OORVI SINGH

Certificate

This is to certify that the declaration of **OORVI SINGH** is true to the best of my knowledge and that the student has worked for one semester in preparing this thesis.

AR. SONAL TIWARI
Thesis Guide

AR. SONAL TIWARI
Thesis Coordinator

AR. SAURABH POPLI
Program Coordinator

Recommended

Prof. Tapas Mitra
Head, Architecture

Prof. Ajay Khare
Dean, Academic Affairs

Approved

External Examiners
May, 2017, Bhopal

_____ _____

Ar. Nandita Parikh

Ar. Aarti Grover

UNDERTAKING

I "*Oorvi Singh, 2015mla014, Masters Of Landscape Architecture*" have prepared a report titled **"CONSERVATION OF SACRED LANDSCAPES, A CASE STUDY OF SAPT SAGAR, UJJAIN."** under the guidance of *Asst. Prof. Sonal Tiwari* for the purpose of in partial fulfillment of condition of masters of landscape architecture program at School of Planning and Architecture, Bhopal.

I am the sole author of the foretasted work, and I hereby state that no part of the said report is plagiarized or otherwise taken from any other book, article, journal, internet report previously published or unpublished without proper attribution of authorship, to the best of my knowledge and belief.

I hereby indemnity my guide and school from any responsibility arising from charge of plagiarism or misattribution that may or may not arise due to errors of attribution of authorship or rights thereof on my part in this report hereby submitted.

Oorvi Singh
(2015mla014)
Masters Of Landscape Architecture
May, 2017

ACKNOWLEDGEMENTS

I would first like to thank my thesis advisor Asst. Prof. Sonal Tiwari of Landscape Department at School Of Planning & Architecture, Bhopal. The door to mam's office was always open whenever I ran into a trouble spot or had a question about my research or writing. She consistently allowed this paper to be my own work, but steered me in the right the direction whenever she thought I needed it.

I would also like to thank the experts who were involved in the validation survey for this research project: Survey Consultant -Mangesh Parulkar . Nitin Shrimali & Associates, Indore and Alpha Consultancy, Bhopal. Also, I would like to thank Ujjain Municipal Corporation and Mr L.K Choudhary (P.C.C.F, Madhya Pradesh Forest Dept, Bhopal) for providing all necessary samples and maps and plans for this thesis .Without their passionate participation and input, the validation survey could not have been successfully conducted.

I would also like to acknowledge Prof. Saurabh Popli of Landscape Department at SPA, Bhopal and Ar. Vineet Chadha Sir , as the second readers of this thesis, and I am gratefully indebted to them for their very valuable comments on this thesis.

Finally, I must express my very profound gratitude to my parents and to my sister for providing me with unfailing support and continuous encouragement throughout my years of study and through the process of researching and writing this thesis. This accomplishment would not have been possible without them. Thank you.

Author
Oorvi Singh

ABSTRACT

Religious signs, rituals, etiological myths, theonyms and epithets, as well as human constructions (e.g. architecture) together create a web of ciphers and symbols that make up the sacred landscape of a region. Ujjain a pilgrim center, located on the eastern bank of river Kshipra in Madhya Pradesh (Central India) is deemed to be an agglomeration of history, traditional beliefs, myths and legends. A visible emblem of sacred heritage and a major link in religious network of Hindu India, exhibits all the tangible and intangible layers of sacred landscape that has shaped or influenced Hindu ritualistic behavior. But the constant pressure of urban development and increased religious tourism on this sacred landscape has led to illegal encroachment, degradation of flood plains, pollution of watershed, exploitation of natural resources, lack of social awareness and mismanagement by concerned government agencies, etc. . Hence, the research aims to map and identify those critical spaces having a negative impact on the natural ecology as whole and prepare a landscape conservation plan to preserve the sense of continuity and resilience of a sacred city with a demonstration of a Case study of Sapt Sagars , Ujjain.

Keywords -

Sacred Landscape, Wetland Conservation, Archetypes, Management Plan

Table of Contents

Table of Figures

1. INTRODUCTION

Landscape is a comprehensive term, which includes open natural spaces, under or above water- ranging from grooves of trees to a region and manmade built spaces, ranging from a garden, urban park to a city. Hence, sacred landscapes are sites which are created and evolve through descriptive, spiritual and functional association with humans over a long period of time and often act as a setting for re-enactment of mythological and religious narratives with rich historic time line.

The sacred landscape of Ujjain incorporates both natural and manmade archetypes that enhances the sanctity of the sacred city for example-

Natural Archetypes- River Kshipra, Sacred Ghats, Sapt sagar (lakes)

Manmade Archetypes - Temples, Crematoriums, Yatras, Kumbh Mela, Congregations and Religious institutions, Fairs and Festivals.

Thus by amalgamation of all tangible and intangible components of landscape of the city, we get an elaborate picture of traditional role of Ujjain in integrating historical perspective, landscape archetype, literature and religion together which contributes to the continuity of the sacred complex whose age old traditions and rituals has defines the city as a sacrosanct with capacity of constant renewal.

But, due to massive increase in urban sprawl and tourism, Ujjain's scared heritage is under pressure of urban development leading to illegal encroachment, degradation of flood plains, pollution of watershed, exploitation of natural resources, lack of social awareness and mismanagement by concerned government agencies. Hence, the research aims to identify and map the sacred heritage of the city, choose a pilot site and propose a sustainable landscape management plan and policy based strategies to conserve the sanctity of the city.

1.1 Aim

To prepare a landscape conservation plan to preserve the sense of continuity and resilience of a sacred city - Case study of Sapt Sagars of Ujjain.

1.2 Objectives

- To define and understand the characteristics of sacred landscape of Ujjain.
- To identify best management practices to develop a framework for study and conservation of sacred heritage sites.
- To do Landscape character assessment of Ujjain.
- To study the inter-relationship between geomorphology and sacred landscape.
- To understand the tangible and intangible values of sacred landscape of Ujjain.
- Take a sample pilot site for typological intervention.
- To establish the significance of conservation of sacred landscape and their relation with urban fabric.
- To harness the sacred landscape as an approach for the sustainable regeneration of Ujjain heritage and take a holistic approach to the interpretation of the historic district and natural landscape of the city, where historic buildings are located.
- To prepare landscape management plan to maintain its great religious and cultural image and provide a better and sustainable environment to all walks of life.

1.3 Thesis Outline

1. INTRODUCTION
- Aim
-Objectives
-Scope
-Methodology
2. LANDSCAPE CHARECTER ASSESMENT OF UJJAIN
- Geomorphology
- Hydrology
- Climate
- Vegetation
- Urban infrastructure and Roads
3. SACRED LANDSCAPE OF UJJAIN
- Sequence of growth
- Sacred landscape of Ujjain
- Classification of sites
- Spatial correlation of sacred landscape with geomorphology
4. SAPT SAGAR OF UJJAIN
- Myths and Legends
- Ecology of the water bodies
- History and cultural association
- Catchment area
- Tourism - Rituals
- Land-use and Land cover
- Inlet / Outlet
5. ISSUE IDENTIFIACTION
6. PROPOSAL OF LANDSCAPE CONSERVATION PLAN

1.4 Scope and Limitations

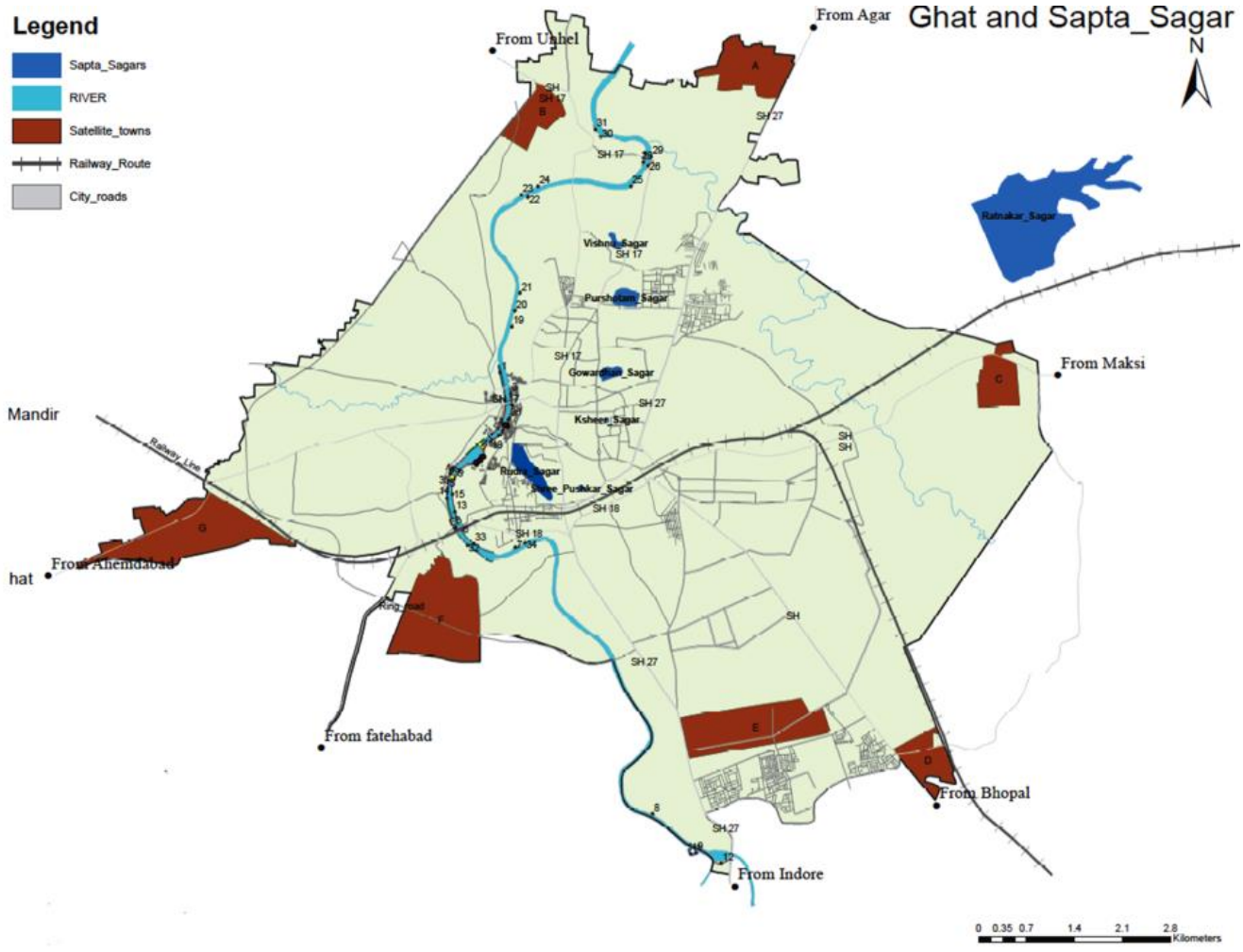
- Site planning and management should take into account what is today considered non-essential knowledge—the language of myths, hidden meanings of rituals, and sanctity attributed to nature evident in everyday practices—so that a different paradigm for solving complex problems that defy standardized solutions can emerge.
- This paradigm can guide a design process that incorporates place experiences, encourages community participation in decision-making, and adapts proposed plans to local site conditions.
- Ujjain today is the most poorly interpreted and understood city of India. Its antiquity is not apparent immediately, the city having been destroyed completely at some point in history.
- Thus the need to establish an overall vision for the long-term future of Ujjain which will be widely accepted and explore opportunities for positive management with landowners, farmers, crafts persons, traders and all other agencies, such as will enhance the landscape character of Ujjain whilst respecting it’s cultural interest is necessary .

1.5 Outcome

-Understanding the role of landscape in the interpretation of sacred sites in Ujjain.
- The landscape intervention in the proposed master plan for conservation of sacred sites.

- Design interventions in critical areas of the city to help revive the lost context of past.
- Study and Documentation of the Historical/Heritage, Streetscapes and culturally homogenous areas which forms a base to propose landscape management plan and conservation strategies.

Figure 1 GIS Map, Ujjain



2. LITERATURE REVIEW

2.1 What are Sacred Landscapes? Explain and define types of sacred landscapes?

A sacred site is a place in the landscape, occasionally over or under water, which is especially revered by a people, culture or cultural group as a focus for spiritual belief and practice and likely religious observance. In addition, to satisfy this stem definition and reflect its wide and rich variety, a sacred site must also have one or more of the following nineteen characteristics found under the headings: Descriptive, Spiritual, Functional and Other. Having more or less of these characteristics does not imply that the site is more or less sacred but it may usefully reflect the complexity and rich variety of its sacred qualities.

1. Descriptive

a. It is a specific focus within a wider and possibly dynamically interconnected sacred landscape.

b. It is, or is founded upon, a natural topographical feature, e.g., a mountain, mound, rock, cave, tree, grove, forest, spring, well, river, lake, the sea, an island, etc.

c. It is recognised as carrying special manifestation of wildlife, natural phenomena and ecological balance.

d. It is embellished with man-made symbols or artefacts, e.g., rock-carvings, painting, holy or religious objects.

e. It is partially or wholly man-made, e.g., menhir, temple, church, wayside shrine.

f. It is a memorial or mnemonic to a key recent or past event in history, legend or myth, e.g., a battle site, creation or origin myth.

2. Spiritual

a. It is recognised as having a palpable and special energy or power which is clearly discernible from that of a similar landscape or surrounding.

b. It is recognised as a special place which acts as a portal or cross-over to the spirit world.

c. It is recognised as the dwelling place of guardian or ‘owner’ spirits which care for and oversee the site and possibly its wider environs.

d. Its spiritual forces or ‘owner’ spirits are in a mutually respectful dialogue with local people with specialist knowledge acting as guardians or custodians, who play

important roles as mediators, negotiators or healers between the human, natural and spiritual dimensions.

e. It is identified as a place where the ancestors are present and especially respected, e.g., burial grounds.

f. It is a place of spiritual transformation for individual persons or the community, e.g., healing, baptism, initiation, religious conversion, rite of passage, funeral, vision quest.

3. Functional

a. It is a special place where relationships, both interpersonal and throughout the whole community, can be expressed and affirmed, often through a specific form of observance, e.g., prayer, songs, chants, dance, ritual or ceremony.

b. It is a place especially associated with resource-gathering or other key cultural activities, e.g., gathering medicinal plants or material for sacred or ritual ceremony or objects, fishing, hunting, cultivation, burial of ritual objects, giving birth.

c. It is a specific pathway or route between significant or sacred places, e.g., song line, sacred pathway, pilgrimage route.

d. It is a focus of past or present special visits of religious observance or pilgrimage.

e. It is a cultural sacred-secret, with its location and/or specific religious function only known to a limited number of people.

f. It has a significant relationship with astronomical order and/or calendrical phenomena, e.g., astronomical alignment, celestial-Earth correspondence, seasonal ritual or festival.

4. Other

a. It clearly satisfies the stem definition but has unique cultural features that are not represented in the previous eighteen characteristics. (Gunn, 2008)

2.2 Importance of Sacred Landscapes in India.

-Religious signs, rituals, etiological myths, theonyms and epithets, as well as human constructions (e.g. Architecture) together creates a web of ciphers and symbols that make up the sacred landscape of a region, creating a text or narrative of a sacred landscape invested with meaning.
-The sacred landscape is not simply what we see, but a way of seeing: we see it with our eyes but interpret it with our mind. Landscape is therefore a cultural construct which gives meaning to places and reflect human memory.
-The sacred geography of the Indian subcontinent is a network of pilgrimage sites

where direct and intimate encounter with nature occurs for millions of religious devotees and other visitors. The physical and spiritual engagement with the cultural landscape reflects traditional practices of nature veneration that can be the foundation for developing a faith-based environmental ethic.
-The Hindu tradition is famous for its mythologies, and for the multitude of gods and goddesses one encounters in the temples and public spaces of India. Less well known, however, is the fact that Hindus have been equally avid geographers who have described with considerable detail the mountains, river systems, and holy places of India. This intersection of mythology and geography reveals how the people who have come to be called Hindus have "mapped" their world and how they have understood the land they have called Bhārata in relation to the larger universe.(Sinha, 2014)

Case Studies –

2.3 Oracle Landscape Of Orchha, India: Reclaiming The Lost Heritage.
Amita Sinha and Ana Valderrama, Department of Landscape Architecture University of Illinois at Urbana Champaign.

Cultural landscape as a conceptual category for assessing and conserving heritage is increasingly significant worldwide for many reasons, foremost in its capacity to ensure authenticity and integrity, two important criteria for success. It offers a frame for mediating between many forms of heritage—natural, cultural, built, and intangible--by providing a spatial context and acting as a catalyst in their sustenance. It connotes dynamic process in temporal layering of sites rather than the static artifact. UNESCO's categories for World Heritage status designation—designed, organically evolved and associative cultural landscapes—provide a framework for assessing heritage (Taylor and Altenburg, 2006). However heritage sites in the Indian subcontinent with attributes from all three do not fit neatly into one type. They show design intelligence at work in the past, continuous evolution of settlements with a traditional way of life, and sacred associations with natural landscapes—often all combined in one site. The case study of Orchha, a heritage town in Madhya Pradesh, illustrates the inclusive approach needed for conserving its multi-dimensional heritage through landscape planning and management.

Orchha, capital of the Bundela Rajputs from 1531-1783 CE, has a number of historic palaces, gardens, temples, and murals representing Bundela achievements in art, architecture, and landscape design. They are in the island citadel on the banks of the River Betwa and in the settlement that sprung up across the moat from the fort (Kambo, 1984; Singh and Singh, 1991; Srivastava, 1999). Orchha is now a small town of 11,190 residents and the destination of over 120,000 tourists and pilgrims annually.

By 2035 the number of tourists (domestic and foreign) is expected to rise to 445,029 per year (Lea Associates et al, 2011). Efforts by the state to protect historic

monuments and develop tourism infrastructure have had limited success so far and only partially address the full gamut of heritage conservation. New random development, degradation of historic sites, and loss of collective memory are among the many challenges facing Orchha. In the proposed conservation framework, landscape is considered salient and integral to protection and interpretation of multidimensional --archaeological, natural, and intangible—cultural heritage.

Grounded Speculation

Orchha's historic structures—palaces, mansions, temples, and gardens within the fort and outside it—comprise a monumental landscape visited mainly by tourists interested in Bundela history –and pilgrims who workship. Temples and shrines, some historic and others more recent, attract pilgrims, as does the Betwa River, from nearby districts, especially on religious festivals. Their ritual enactments—circumambulatory tours and river bathing—create a local economy revolving around circulation of images and objects in public spaces. This kinetic landscape, always in flux, responding to the pilgrim flow and festival cycle, also reflects the tourist demand for souvenirs and handicrafts. Juxtaposed with the monumental and kinetic is the vernacular landscape of residential housing in tightly clustered, linear neighborhoods built with local materials in the traditional design vocabulary. The monumental landscape represents history, and the vernacular landscape building traditions that have created socially- and climatically responsive living environments. The kinetic landscape adds a dynamic and vibrant layer acting as foil to the seemingly static, imposing monuments. Together the three landscapes in Orchha create a picturesque charm unique among heritage towns.

The palimpsest and quilt metaphors are descriptive but inadequate in fully understanding how the contemporary cultural landscape embodies multiple forms of heritage and what would be sustainable ways to conserve it for posterity. The historic landscape structure of Orchha is hidden amidst the juxtaposed and overlapping layers and new construction. To recover its historic specificity at any given point of time appears difficult, especially so given the lack of Orchha's documented history and archival records. Instead knowledge of design principles that would have guided its evolution for two hundred and fifty years (16th-18th c) will prove to be essential in imaginatively reconstructing the landscape structure. This will prove to be instrumental in managing the landscape today and controlling change that adversely affects heritage conservation.

In grounded speculation, experiment engenders expertise, which in turns fosters the imagination. In that way, the practice of grounded speculation empowers landscape architects to develop accessible, engaging, and meaningful solutions to contemporary challenges, regardless of their scale or technical objectives (Hays, 2010, p. 179).

Grounded speculation on the lost landscape intelligence and knowledge base that had built a habitable milieu in Orchha is made possible through sophisticated and developed version of traditional ‘site analysis performed through bodily encounter: assessing conditions, coming to terms with limits, and identifying potential opportunities for intervention’ (Hays, 2010, p. 178). Sensory input from looking and walking the site is supplemented by old and more recent technologies of vision—photography and satellite imagery. Intuitive understandings of landscape structure from somatic perception are refined through representations in site readings and site mappings. Site readings explore the phenomenology of experience through feeling, imagining, and representing chora in visual collages and readings of mythic narratives (Marcus, 2010). Site mappings charting topos analyze the natural and built landscape: its topography, hydrology, vegetation communities, buildings, streets, other public spaces. Both terms for places--topos and chora—logic and spirit of place provide the essential nomenclature in developing a ‘foundation of expertise’ for grounded speculations on the historic landscape structure.

Oracle Landscapes

Orchha derived its name from the phrase ‘ondo chhe’ meaning low or hidden, apt for a bowl shaped region, enclosed by bluffs and forests. The Bundela citadel was built on an island in the River Betwa, as a jal durg (water fort), one among the fort types discussed in the medieval design treatises, Shilpashastra (Acharya, 1934; Begde, 1982). The rocky and barren Bundelkhand plateau was ideal for fort building by Rajputs in the medieval period and was their sanctuary from Mahmud of Ghazni’s raids and later attacks by Sultanate and Mughal forces (Sharma and Sharma, 2006).

Betwa and its tributaries have carved deep ravines in low gneiss and sandstone ridges crisscrossed by basaltic dykes. Teak forests and scrub jungle flourish in their alluvial plain of sandy loam and disintegrated basaltic Deccan trap (Luard, 1907; Pandey, 1995). Betwa, known as Vetravati in the epics, is ascribed great purity and power, washing away all sins when one bathes in it. Its banks were considered to be tapovan (forest of penance) where ascetic built their ashrams, taught the sacred texts and purified the wilderness of its evil (Gupta, 19989). Betwa’s two tributaries—Jamner and Ghurari—merging at Orchha, create a natural landscape of fording streams, ideal for a moated citadel in perilous times.

Across the moat, west of the citadel, developed a group of palaces and temples, forming a secondary core in a largely uninhabited area circumscribed by a semi-circular wall. Towards the south, on the banks of Betwa, rose a group of cenotaphs, known as chattris, memorials to Bundela rulers and their queens. Around the core groups of monuments, open spaces--gardens, plazas, and ghats (steps) on the riverbank—were built over time. Today, the main spine of the settlement between the citadel gate and the city wall gate has vernacular housing on both sides while the street connecting the north city gate with the fort entry extends along the moat southwards towards the river. The town appears to have evolved organically around

palaces and temples to meet the requirements of habitation, security and worship. Although Orchha's urban structure is not complex yet a complete understanding of its order demands it be interpreted within the world view of the Bundelas. It is speculated that its cultural meaning transcended its utility as a habitable and safe setting to that of an auspicious landscape, read as an oracle by its inhabitants for a sense of wellbeing and protection promised by the presence of gods in their midst.

Archetypal Imagery

Orchha's landscape was rendered auspicious through concrete embodiment of archetypal images deeply rooted in the collective consciousness of Indic cultures. The images are varied, ranging from figural to abstract, but what they have in common is their potential to evoke the divine immanent in nature. This imagery was deliberately and consistently employed to produce an ordered landscape from the chaos of wilderness. The archetypal images were encoded in built forms, pervaded building interiors, reproduced in place settings, reflected in the waters, and imagined as visual axes in the urban structure. Their presentation and re-presentation in the landscape made it iconic and oracular. The symbolic significance of the following archetypal images is pertinent in interpreting the iconic landscape structure: Mount Meru and cosmic pillar, mandala and yantra, and place archetypes.

Mountain and Cosmic Pillar

Hindu cosmography imagines the center of cosmos to be Mount Meru, as a form of axis mundi linking earth with the heavens. Cosmos is conceived of centered on Meru, rising out of the middle of seven ring-shaped concentric continents and seven circumambient oceans. The island citadel of Orccha has palaces and temples with tall spires grouped in the center of the inner enclosure and scattered in the outer fort, all rising out of the waters of Betwa and its tributaries, popularly known as Satdhara (seven streams), an allusion to the mythic seven oceans. Another archetypal form signifying the axis mundi is the axial pillar churning the oceans in the cosmogonic myth of creation of space and time out of primordial chaos. The pillar/mountain separates the skies from the earth and marks the point of cosmogony where earth emerged from primordial waters. The cenotaphs on the Betwa River rising out of the watery expanse in fording streams, southwest of the citadel, were built on the cremation sites of Bundela kings. These riverfront commemorative memorial towers were symbolic representations of the world pillar rising out of the waters and reaching the skies, promising renewal and rebirth upon death.

Mandala and Yantra

Mandala and yantra are archetypal geometric forms used widely for consecrating space by inviting gods to reside and subduing demonic spirits of the site. Mandalas are usually circles or gridded squares, symbolic replicas of the cosmos representing concentrations of its positive energies. Yantras on the other hand are triangular in shape and function as ritual objects of meditation and worship (Buhnemann, 2003).

Both are auspicious mystical forms and at Orchha, as in Chitrakut and Hampi, were implicit in the landscape and articulated through built forms (Dubey and Singh, 1994; Fritz and Michell, 1987). They were mental schemas visualized in a coherent cognitive map of the settlement. A series of circular mandalas and four isosceles triangular yantras, discerned from above, with the royal palace Raja Mahal in the island citadel as the center and apex, organize the location of temples, cenotaphs, palaces, and gateways. The natural and the built appear to be in synapomorphy in the emerging landscape structure thus rendering the site auspicious for the Bundelas.

Place Archetypes

Orchha's landscape is imprinted with the archetypal places of the epic Ramayana. The hero-god Ram, considered to be the real king of Orchha, was brought from his capital Ayodhya by Ganesh Kuvari, wife of the ruler Madhukar Shah. As legend has it, Lord Ram refused to move from her palace Rani Mahal (his own palace Chaturbhuj Temple was not completed in time) and thus Rani Mahal became the Ram Raja Temple from where Lord Ram ruled over his earthly kingdom. Bundela kings sought to model their values and code of conduct after Ram and shape their society in the image of the utopian Ramraj. Places associated with the exile of Ram, his wife Sita, and his brother Lakshman into the wilderness were archetypal landscapes—tapovan (forest of penance), Chitrakut mountain, the garden-grove Ashok Vatika, and the island fort Lanka (Sinha, 2006). Sites in Orchha celebrate the mythic narrative through the building of temples in the wilderness in the outer fort and across the River Betwa. Vanvasi Temple, Chitrakut Temple, Ashok Vatika shrine and Lanka fort wall are narrative place markers commemorating Ram's epic journey and his victory over evil.

Strategies for Envisioning

The landscape structure of Orchha emerged in accordance with design principles for reifying archetypal imagery, i.e. making manifest the auspicious iconography of the sacred in the here and now. Three design strategies are evident—location, plan and orientation of buildings, spatial transposition, and building interiors and exteriors as spaces for representation. The transformation of wilderness into the habitable landscape required the site to be conceived as a receptacle for divinity embodied in architectural forms of temples. The urban order was visualized as a series of imagined mandalas and yantras linking the major landmarks of Orchha. In addition to the design principles for jal-durg, encoded in the Shilpashastras and adapted to the local conditions, an intricate set of formal rules for the siting and orientation of temple and palatine architecture would have guided development. This lost cultural knowledge needs to be reclaimed through grounded speculation based upon site studies.

Building Location, Plan and Orientation

Site mapping of terrain and hydrology revealed the location of buildings at different heights afforded by topography making possible the visualization of mandalas and yantras. The major palaces and temples of Orchha—Raja Mahal, Jahangir Mahal, Ram Raja Temple, Chaturbhuj Temple, Lakshmi Narayan Temples were located on higher promontories (225 meters and above) —while mansions, smaller temples and their plazas—Radhika Raman, Raghuvamsani, Kanhaiyya Mandirs—were built on slightly lower hillocks (on or above 220 meters). Closer to the riverfront on its floodplain (215 meters) are cenotaphs and ghats, reflected in the waters. It is the visual relationship among the buildings, not the street layout--for instance Chaturbhuj Temple and Raja Mahal roughly at the same height and on the eastwest axis—that is crucial in understanding the urban spatial order. This order is discerned primarily through visual axes linking the buildings—palace, temples, cenotaphs, and city gate in triangular yantras.

The location of temples, sacred sites, and the city wall visually inscribes the circular mandalas centered at the Raja Mahal. The biggest circle overlaps with the city wall built by the Orchha ruler, Rudra Pratap Singh, marking out the space for habitation. Circles centered on Jahangir Mahal in the citadel describe the location of many smaller temples built on lower hillocks and Betwa's banks. The rim of a larger circle connects the Lakshminarayan Temple at the highest point in the site facing the sunrise on the summer solstice with the entry gateway to Orchha. As the sun sets behind the cenotaphs on the winter solstice, they are reflected in the Betwa, resulting in a spectacular vision of the place where the sun completes its circumambulation of the earth. Here the structures are a symbol of the world pillar mediating between the heaven and netherworld.

Natural features—Betwa and its tributaries as well as natural dykes—made building the jal durg possible. Roughly polygonal, its walls rise parallel to the moat, tapering sharply, twelve degrees east of north, and parallel to the longitudinal axis of the island. This orientation determined the alignment of many buildings including historic temples within the fort, and those outside in the town. Whether this alignment also corresponded with any stellar constellation or not cannot be determined yet. However, royal palaces in the inner fort—Raja Mahal and Jahangir Mahal—are oriented east-west, on axis with the Chaturbhuj Temple, built across the moat. The two orientations--east and twelve degrees north of east--of adjacent buildings set up an interesting spatial dynamic in the public plazas and gardens between them. Etched on the third floor of Jahangir Mahal, is a curious mystical diagram, an yantra—section superimposed on a plan with numerals—believed to be the plan of the jal durg, however its symbolic significance is difficult to interpret.

The mandala archetype is evident in palatine and temple architecture where its material embodiment makes for a visceral experience rather than a mere exercise in visualization. The three palaces—Rani Mahal (now Ram Raja Temple), Raja Mahal,

and Jahangir Mahal—are based upon the paramsayika mandala, i.e. square subdivided into smaller squares and rectangles with open space in the center. The palatine designs are highly evolved formal exercises in composition and massing, and play of solids and voids. They mark the singular achievement of Bundela style—open courtyards alternating with pavilions at higher stories such that interior open spaces form an inverted pyramid. Chattris (kiosks) and domes break up the roofline: projecting walls, jail corridors, brackets, and balconies enliven the blank outer surfaces (Tillotson, 1987). Orchha temples have the Bundela octagonal shikhara (tower) shaped like a pine cone and crenallated domes in monumental temples such as Chaturbhuj with a cross-axial plan and the unusually rhomboid shaped Lakshminarayan. Spacious mandapa (hall) interiors with vaulted ceilings for large congregations are a Bundela innovation although they are lacking in smaller temples in the northern part of the island fort, likely meant for private worship by the royals (Rothfarb, 2012).

Spatial Transposition

Site readings based upon interviews with local informants and observations in walking tours gradually revealed chora, spirit of the place. The formal urban and architectural order was given meaning through myths and legends, in particular the epic myth of the god-king Ram after whom the Bundela rulers modeled their kingship. The Ramayana narrative was imprinted on Orchha's cultural landscape through the process of spatial transposition involving mimesis. Not only was the Ram idol brought from his capital Ayodhya so that the rulers could reign on his behalf but also places associated with his legend were transposed to Orchha. Specific sites were named after Ramayana sites elsewhere in the Indian subcontinent, in particular those associated with his exile--Chitrakut and Lanka (Eck, 2012). This toponymy reveals a cultural landscape of narrative place markers, where temples were built to commemorate Ram's victory over demonic forces thus purifying wilderness of its evil.

The temples of Orchha testify to the Vaishanavite (Vishnu and his avatars—Ram and Krishna) orientation of Bundela rulers—for example Chaturbhuj and Lakskminarayan are named after Vishnu, the former housing a Krishna idol is in active worship. The most prominent temple and the destination of regional pilgrimage, is Ram Raja Temple from where Lord Ram rules over Orchha. Those built in outer fort in the island and across the Betwa refer to places Ram lived in during his exile. Vanvasi (forest dweller) Temple is at the northern tip of the island and Chitrakut in on a hillock towards the east rising above the Betwa.i The building named Yagya Shala (sacrificial chamber) alludes to the rites performed by ascetics in tapovan. Across the Betwa is a small temple in a site known as Ashok Vatika where Sita was imprisoned by Ravan in his island fort Lanka. Further north where Betwa meets with its tributary Jamner is the point known as Sangam, alluding to the real sangam (confluence of Ganga and Yamuna) crossed by Ram, Sita and Lakshman in their journey to the south.

Representational Space

Architectural surfaces, exterior and interior, provided spaces for iconic representations that added to the auspicious perception of the physical environment. Visual survey of palatine and temple murals and sculptural reliefs revealed ways in which framing created a focus and affirmed the auspicious feel of the environment. These representations are primarily of heroic figures from myths and legends—gods and goddesses, demons, mythical composite creatures, flora and fauna, Bundela princes, ascetics, dancers, nayak-nayaki, and rag-ragini figures (Aruna, 2002; Chakravarty, 1984; Yadav, 2012).

Among these, narrative imagery from the epic Ramayana was particularly important as visual reminder of the divine kingship model that the Bundela rulers were expected to abide by. Murals on interior walls and ceilings— Ram's birth in Ayodhya, marriage with Sita, vanquishing the demon Ravan, return from exile, and his coronation--depict his valor, fortitude, courage in adversity, and triumph over evil. In palaces and temples, the interior surfaces were dematerialized by the extensive depiction of narrative imagery, creating a dream like sensual near environment populated by a multiplicity of figures. The walls and ceilings appear to be projections of inner psychological space just as buildings were symbols of the self. Framing of narrative episodes occurred by delimiting the space with foliate borders, placing figures under canopies and in blind arched or gabled openings.

Sculptural reliefs on building interiors and exteriors portray the exile of Ram, Sita, and Lakshman. Framing of iconic imagery on walls of temples in the northern part of the outer citadel— Vanvasi, Radhika Bihari, and Panchmukhi, and across the Betwa in Ashok Vatika --occurred in blind windows and niches, and jharokhas (protruding balconies). At Vanvasi and Ashok Vatika Temples, sculptural reliefs of Ram and Sita with Hanuman and other figures are carved over the doorway and in the interior wall. The framed imagery is an ever-present reminder of the trials and tribulations faced by Ramayana protagonists in tapovan during their exile. At Radhika Bihari and Panchmukhi Temples, relief carvings and jharokhas on exterior walls show seated and standing ascetics who sanctified wilderness of its evil. Although the imagery does not directly represent the natural landscape of the island fort, it alludes to its symbolism through iconic figures, thus creating an auspicious environment for the Bundela rulers to worship and perform rituals in the temples.

Framing of Chaturbhuj Temple, the embodiment of four-armed Vishnu metaphorically represented in the cross-axial plan, occurred by puncturing apertures in the jail screens and window openings in the Ram Raja palace. The opaqueness and heaviness of the wall gives way to transparency and lightness brought about by its dematerialization through framed openings. As one traverses the corridors on the upper three floors on the western side of the palace, the temple comes repeatedly into view, assuring the viewer of the divine presence within it. The landscape of Betwa and cenotaphs on its banks are framed on the southern and eastern walls. Its

sacred features—natural and built—kept continuously in sight, producing the dialectical relationship between architecture and landscape within which one is contained within the other (Hays, 2008-9).

The Landscape Today

With the departure of Bundela rulers to their new capital Tikamgarh in 1783 CE, Orchha's population dwindled, its palaces and gardens fell into disrepair, and its artistic traditions no longer received royal patronage. With the passage of time, the oracular landscape was hidden from view with its meaning rendered undecipherable. The design principles used for envisioning the auspicious in the built environment were forgotten and are lost knowledge today. The site was overgrown and the jungle seemed to be taking over the area around the monuments in the photographs taken by George Edward Herne (1865), Deen Dayal (1882), and Edmund Smith (1885). By 1901 Orchha was reduced to a small hamlet with a tiny population of l830 living in thatched housing near Ram Raja Temple (Meyer et al, 1908-31). Its landscape conformed to the colonial notion of the picturesque, attracting Europeans to photograph and write about it. The French traveler, Louis Rousselet described Orchha in 1882 as having 'many subjects of great interest for the traveler', 'its palaces and its chief temple bear comparison with the masterpieces of the great Hindoo Schools of Architecture'.

Today Orchha is a thriving town visited by pilgrims, and tourists, domestic and international. Its picturesque charm persists in spite of new commercial development, chaotic traffic, and poor public sanitation. Pilgrimage has kept alive mythic memories, but not of Orchha's historic past. A majority of Orchha's temples in the island fort and a few in the town no longer receive worshippers; Ram Raja Temple however has acquired fame and over the years become an important regional pilgrim destination. Betwa's popularity as 'Ganga of the Kaliyug' is unabated and thousands of devotees bathe in it on festivals and auspicious occasions. The pilgrim space is limited to the complex of temples, plazas and gardens in the center of the town and the Betwa riverfront near the cenotaphs. Movement of pilgrims between these two hubs has resulted in a pilgrimage circuit that largely ignores the island fort, except for one shrine.

Tourist space, on the other hand, is largely centered on the inner citadel, although riverfront and the town center are also visited. Tourist infrastructure is presently inadequate with no interpretive programming (with the exception of a sound and light show), poorly developed heritage trail network, and lack of good rail and road connection to Orchha. The tourist and the pilgrim inhabit separate cultural worlds, the former interested primarily in the monuments, while the latter visit temples and Betwa, and rarely venture into the island citadel. The tourist seeks history while myths are all important in the pilgrim worldview. Both worlds are sustained by Orchha's heritage sites, overlapping to a limited extent only. They call for different responses, either triggering mythic memories or a search for historical facts. The two

cultural spheres need to be reconciled and integrated through site planning and management of the cultural landscape for a complete and authentic experience of Orchha's multi-dimensional heritage.

Reclaiming the Lost Heritage

Grounded speculation on the historic landscape structured by auspicious vision points to strategies for site planning and management of the present day cultural landscape. The vernacular and kinetic landscapes add vitality, although new construction not following the traditional design vocabulary is a discordant element. For an imaginative interpretation of the historic landscape, it is essential that the hidden and implicit visual structure be amplified. The picturesque charm of Orchha, captured in looking and photographing, in rich perceptual experiences in site visits, should be augmented by a cognitive understanding of what gave meaning to the landscape aesthetic in the past. This is possible by ensuring that the physical environment experienced in vision and movement and aided by interpretive signage and programming is interpreted as a rich text. Three strategies are proposed for doing so-- view shed preservation, heritage trails, and reclamation of public spaces.

View shed Preservation

Visual management of Orchha townscape is essential in appreciating its aesthetic qualities and the cultural visuality responsible for reifying archetypal imagery in the built environment in the past. Three levels of visual management are prescribed. At the highest level, at 225 meters or above, viewshed protection will ensure that yantras and mandalas implicit in the landscape structure can be discerned. Panoramic views of the natural landscape and Orchha townscape from the temples and palaces at this level enable the viewer to develop a cohesive image that includes the visual relationship between the natural and the built and among the historic monuments themselves. At the middle level of temples, plazas, and gardens, built at or above 220 meters, are opportunities to see the townscape 2-3 meters above the street level. Openings in the buildings are also frames for viewing the citadel and Betwa. The lowest level of open spaces and buildings at 215 meters, is the sphere of interaction with the river, offering unique visual and tactile experiences of the landscape. Here ritual activities such as bathing and immersion of idols occurs, cenotaphs lit up at sunset are reflected in the waters. Viewshed protection at each level will ensure that archetypal images—Mount Meru rising out of the cosmic ocean, temples as embodiment of divinity, and the imagined yantras and mandalas—will continue to be perceived.

Heritage Trails

Ritual circumambulation (panchkroshi parikrama) by pilgrims engage is re-enactment of mythic memory of seeing the auspicious landscape, feeling the divine immanence, and being part of the community of faithful. This movement pattern circumscribes a much smaller area than that traversed by the Bundelas in the past, resulting in

limited visual experience and knowledge of the historic landscape. Interpretive trails are proposed that tie together the scattered heritage precincts and the outlying sites into a connected pattern. Partially overlapping with the existing streets, they extend the visitor experience—of the tourist beyond the monuments and of the pilgrim beyond the sacred complex and riverfront. The tourist has the opportunity to view and be immersed in the living traditions while the pilgrim in seeing the monuments can relate myths with history. Extending to the outlying historic city wall and the forest sanctuary across the Betwa, heritage trails expand the visitor range and link cultural heritage with natural heritage. While protected viewsheds at three levels serve the goal of imageability, environmental legibility is achieved by viewing the landscape in movement. The series of sequential views in motion build a coherent mental image, offering the possibility of identifying, understanding, and remembering the landscape structure.

Reclaiming Public Spaces

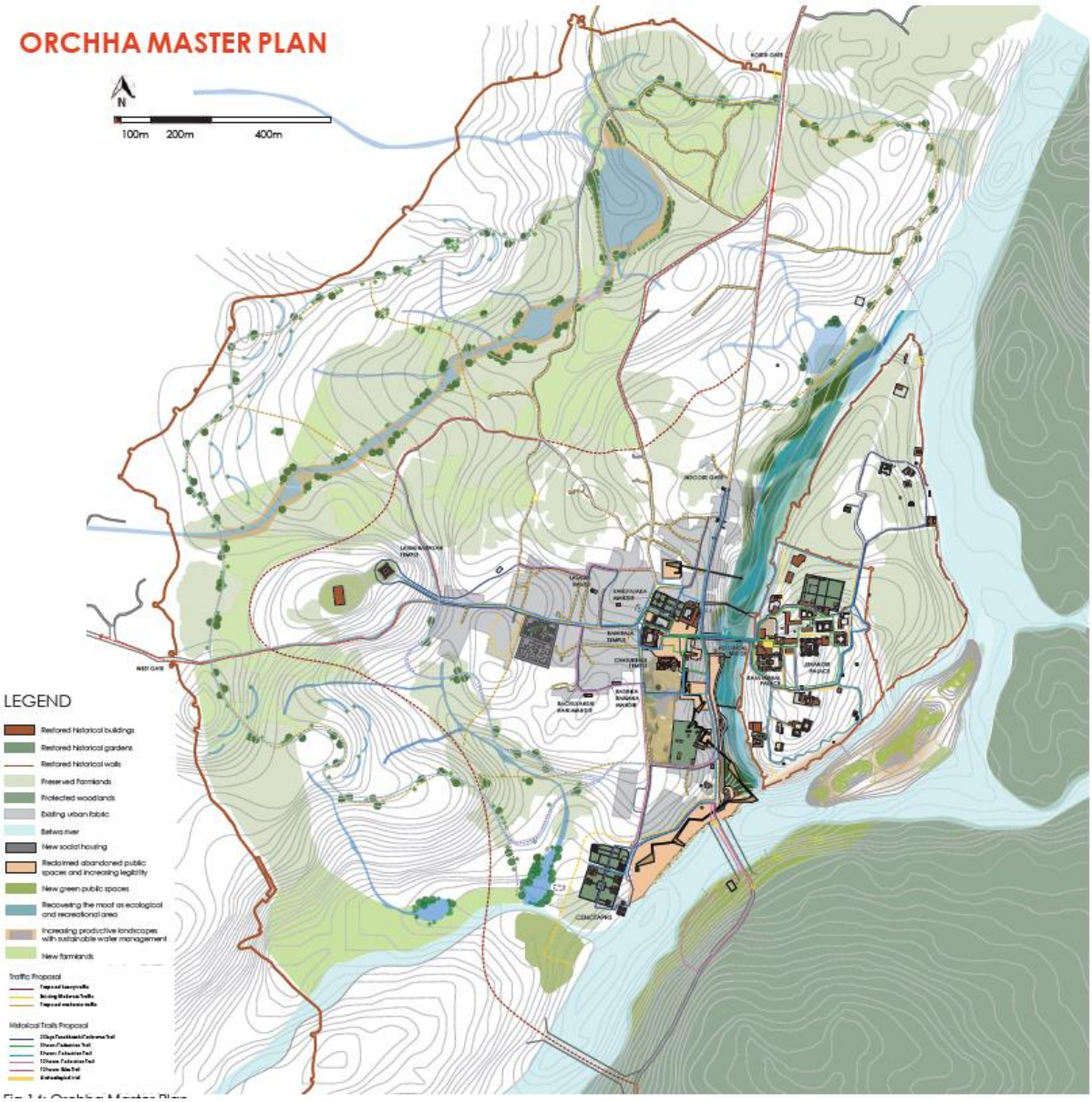
Nav-chowk in the town center with temples and palaces built around courtyards, gardens, and plazas is most heavily used by pilgrims and becomes extremely crowded during festivals. The public plaza in front of Ram Raja Temple is the origin of many festival processions, including Ram Vivah (marriage of Ram and Sita) and like the adjoining plazas and historic garden Phool Bagh, is under stress, its carrying capacity exceeded beyond limit. Public spaces in the proximity, above the street level, should be reclaimed as rest places and sites of interpretive programming—festivals, Ramayana performances, handicraft bazaar—thus taking off some of the pressure from the Ram Raja Temple. Visited sequentially and affording mid-level views of the townscape, they offer glimpses of the urban landscape palimpsest. At the lowest street level, viewpoints to the citadel and access to the moat should be opened up by restoring the seasonal bridges. Across the Betwa, a heritage trail should link the historic and sacred sites of Sangam, Ashok Vatika and Lanka since spectacular views of the island citadel and the cenotaphs are obtained here.

Conclusion

Cultural landscapes in the Indian subcontinent defy easy categorization and therefore a clear approach to their conservation and management practices. Orchha’s landscape is a case study in rediscovery of design principles formulated within the socio-political context of medieval period and guided by the period eye that sought archetypal images in the built environment as a reaffirmation of divine protection. In the absence of sufficient archival record of the Bundela period documenting socioreligious mores, its landscape history is yet to be written, although its religious and palatine architecture have received scholarly attention, as have their murals. Grounded speculation on the historic landscape structure from site studies supplemented by art history scholarship suggests not only an interpretation of the past but also conservation of heritage, i.e. what is valued from the past.

Orchha has many attractions for the tourist--its monumental architecture and picturesque views, set off by the human scale of its vernacular architecture and lively public spaces populated by sacra, ephemera, and people. Pilgrims are drawn to its famous temples and the sacred Betwa, re-enacting ancient rites and reinvigorating mythic memories as they worship, bathe and circumambulate the landscape. Through site planning and landscape management, myth and history can make room for each other and the picturesque can be made meaningful by understanding archetypal imagery. The paradox of conserving cultural landscapes changing with time, making recovery of its historic specificity at any given point in time difficult if not impossible, can be resolved by showing the visitor how to imaginatively read the past in the present.

Figure 2 Orchha Master Plan



3. DATA COLLECTION AND ANALYSIS

3.1 About Ujjain

Ujjain is a tier 2 city, the largest city of the Indian state of Madhya Pradesh by population. It serves as the headquarters of both Ujjain District and Ujjain Division. A central power city, Ujjain exerts a significant impact upon commerce, finance, media, art, fashion, research, technology, education, and entertainment and has been described as the commercial capital of the state. Located on the southern edge of Malwa Plateau, the city is located 190 km west of the state capital of Bhopal. With a Census-estimated 2011 population of 1,986,864 distributed over a land area of just (6,091 square kilometre).

3.1.1 Climate

Due to its location in Central India (approx.76o E, 23o N) , far from the sea, Ujjain has a moderately extreme climate. Winter: In winter(November to February), the night low is around 10oC.At the peak of winter, it can be as low as low as 2 to 3oC. The record low is +1.5oC. summer : During Summer(April-June) the days are hot (35-40oC) with the peak summer (May) day temperature sometimes touching 45c. However , unlike other places in central India, the summer nights in Ujjain are something special. Due to its location on the southern edge of the Malwa Plateau, however hot it may be during the day, in the late evening, cool breeze starts which makes the evenings quite pleasant, referred to as Shab-e-Malwa. Rainfall: Ujjain gets moderate rainfall of 30-35 inches (~80cms) during July-September due to S. W. Monsoon.

3.1.2 General boundaries

The Ujjain District is bounded by the districts of Agar-Malwa to the north, Shajapur to the east, Indore to the south, and Ratlam to the west.

3.1.3 Topography

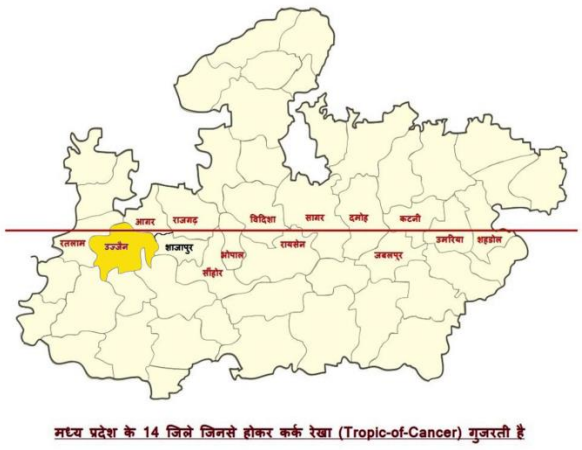
Ujjain district consists of 6 Tehsils, Ujjain, Ghaitya, Mahidpur, Tarana, Bagmagar, Khachrod and Nagda. Number of Blocks in the district is 6 (consisting of 26 Police Stations). There are total 611 Panchayats and 1101 villages in these 6 blocks , in urban areas 1 Nagar Palik Nigam , 9 Nagar Panchayat . Rojadi is one of them which are the first village in which every house has power cabel direct to the transformer. At present, after the delimitation of parliamentary and legislative assembly constituencies , there are 7 Vidhan Sabha constituencies in this district: *Ujjain (North), Ujjain (South), Khachrod-Ngda, Mahidpur, Tarana, Ghatiya, and Badnagar*

3.2 History of Ujjain

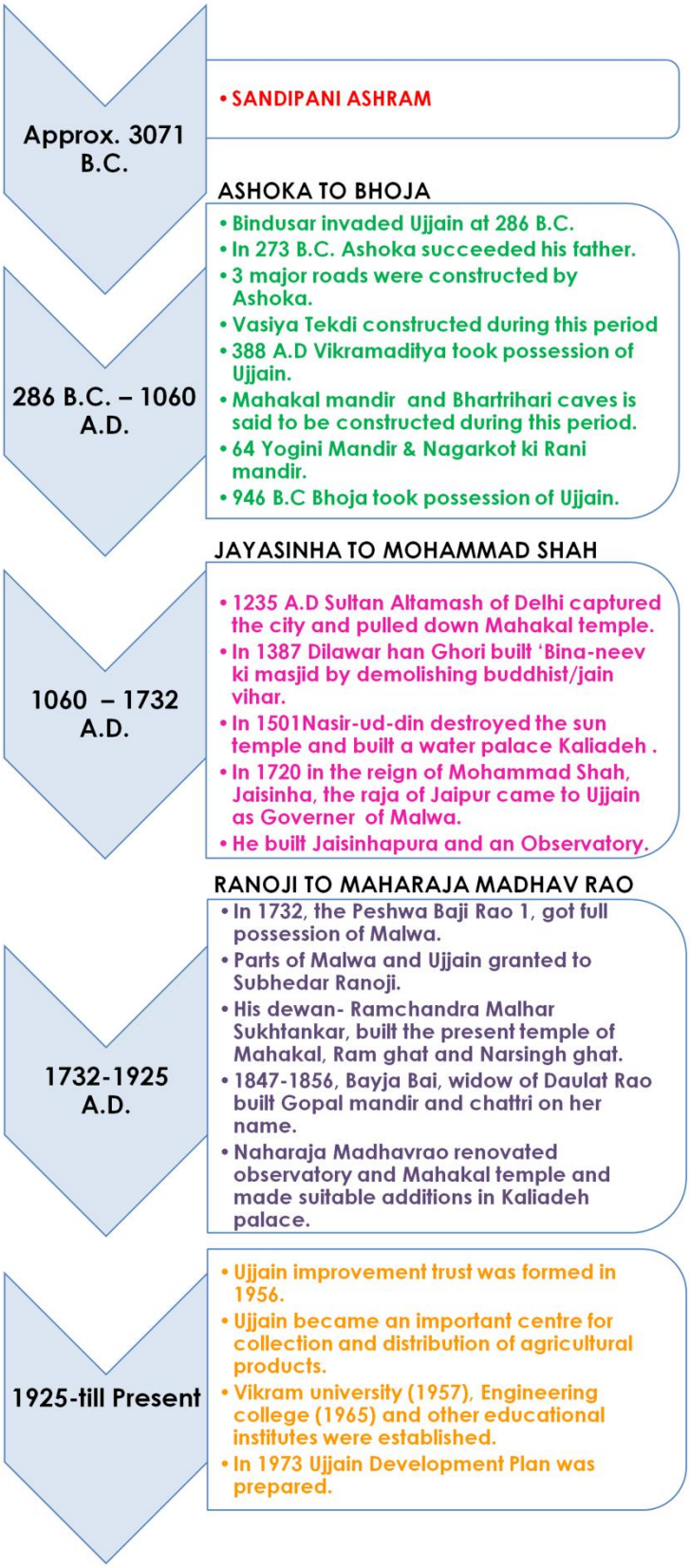
3.2.1 Seat of astronomical studies

- Indian astronomy treats Ujjain as on 0° longitude.
- The Vedic astronomy was based on the movements of the moon among the several starry constellations and as the moon completes her revolution in 28 days or a little less, the Vedic rishis divides the zodiac into 27 mansions.
- But, the Greeks following the Chaldeans who were first to study mathematically the movements of planet's among stars, divided the zodiac into 12 houses, corresponding to the sun's position among the stars during 12 months in which the sun makes a complete circuit of the heaven.
- This proves that later Indian astronomy borrowed from the Greeks these 12 houses and methods of calculations based upon them and amalgamated the two divisions, namely, 27 Nakshatras and 12 Rashis.
- This amalgamation must have taken place at Ujjain under Ashoka in whose time we read that there were astronomical schools at Ujjain.
-The trade from the west in pre-Christian days came through Alexandria to Ujjain, which was the distributing centre and emporium of commerce and naturally Greek astrology along with Greek trade came to Ujjain.
- Ujjain is a town in an open plain with equable climate and moderate rain.
-It means an open horizon and less fear of clouds.
- Then again, being situated nearly on the tropic of cancer, it was the best place to observe the uttermost deflection of the sun towards the north.
- Scholar Varahmihira was born in village Kaytha of Ujjain district in Shak 427. He was the only scholar who had authored several books on all the aspects of astrology. Pancha-siddhantika, brihat samhita, Brihat Jataka, Brihat Vivaha Patal, Yatra and Laghu Jatakam are some of his books.

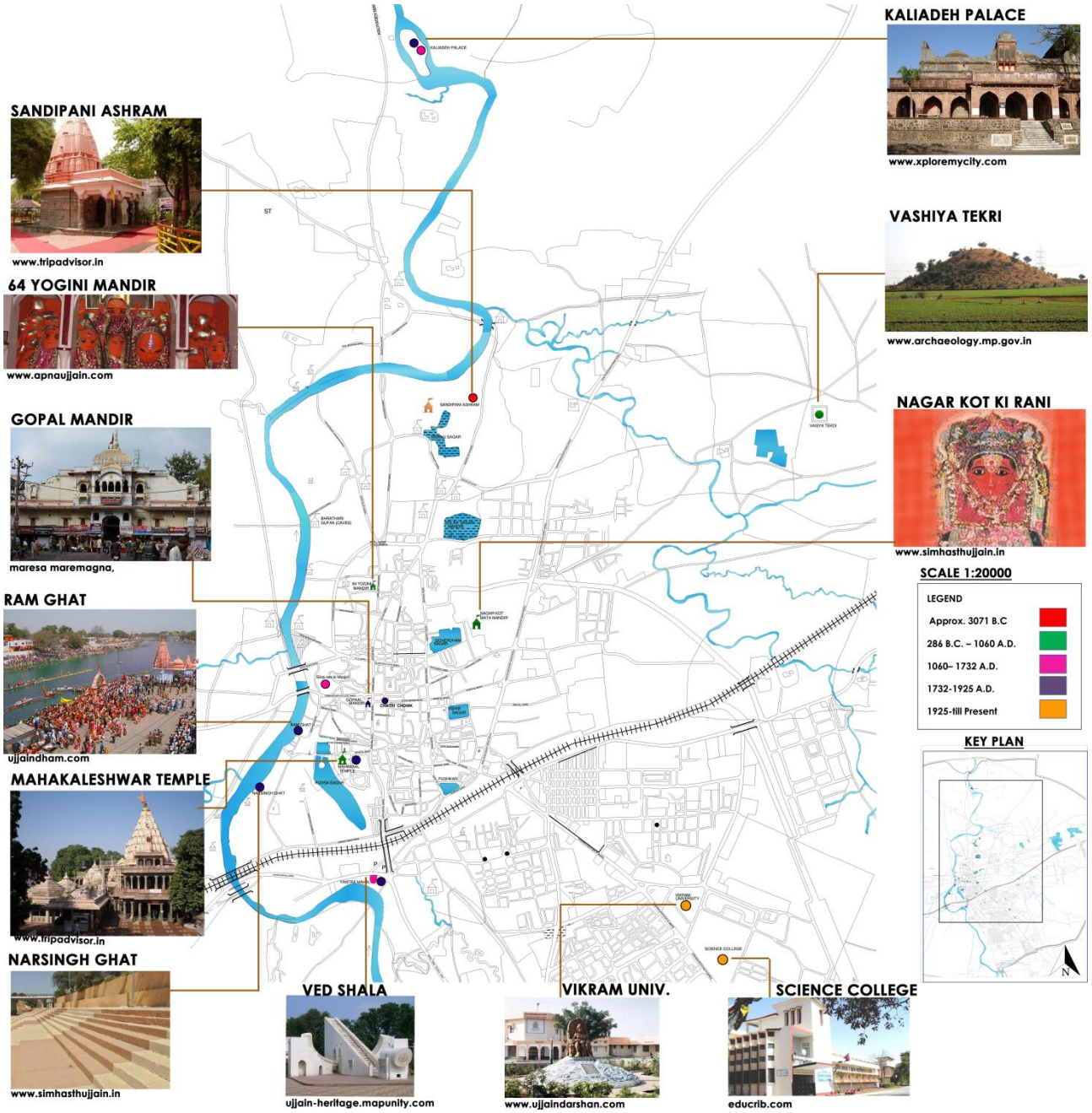
Figure 3 Ved shala , Ujjain



3.2.2 Historic Timeline of Ujjain

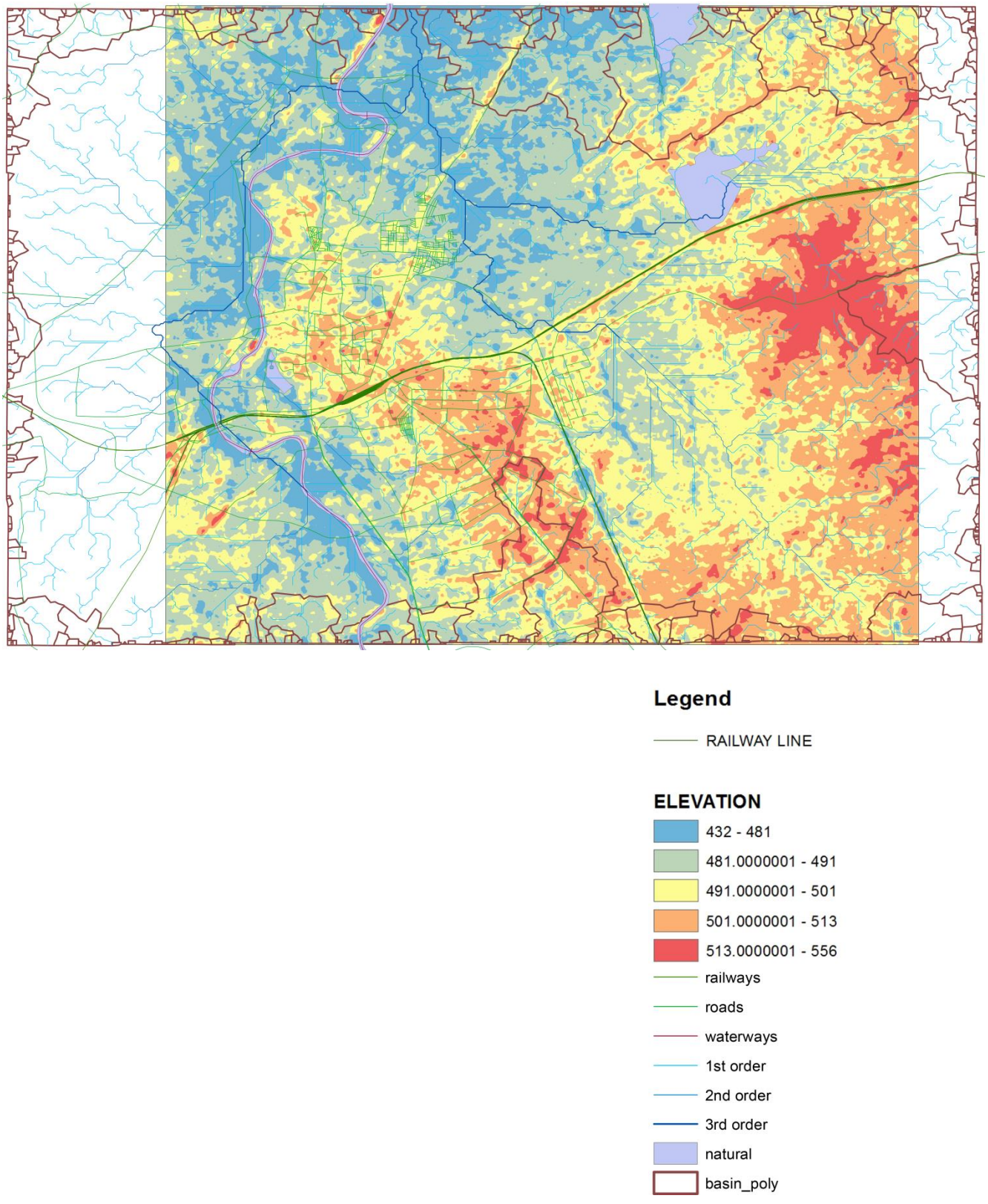


3.2.3 Historic mapping of Ujjain

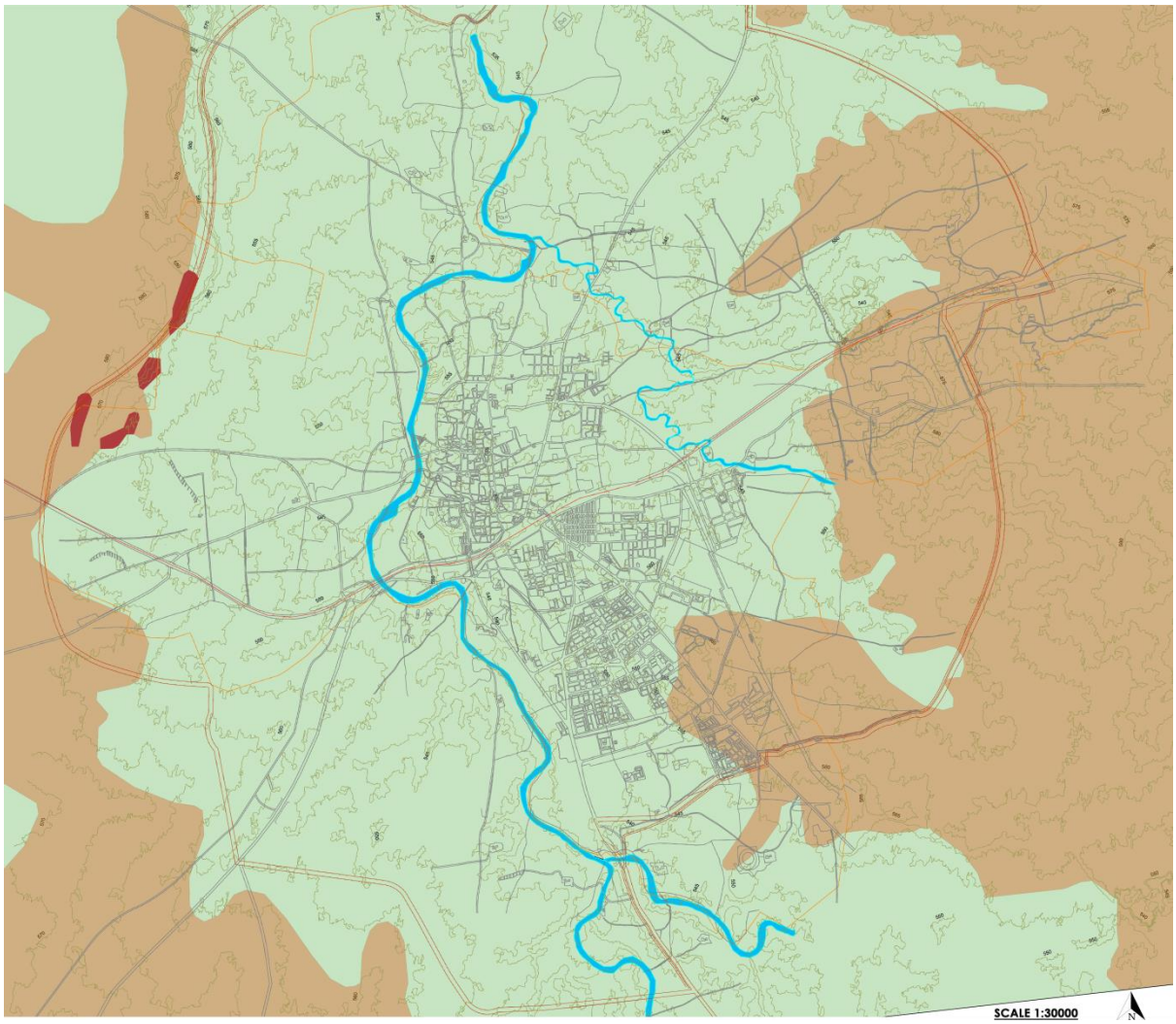


3.3 Landscape Character Assessment

3.3.1 Hydrology and elevation



3.3.2 Geology



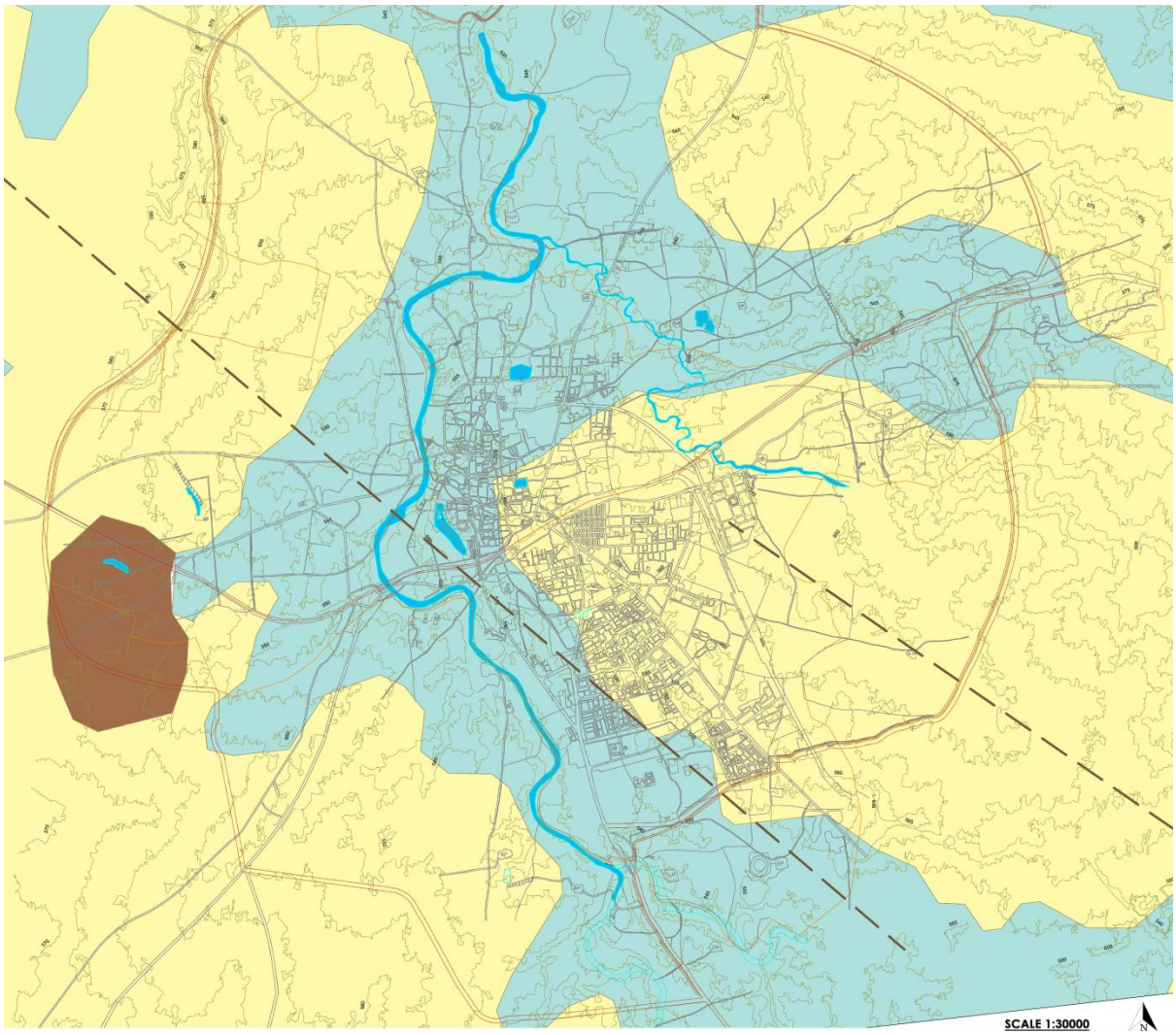
LEGEND

	SOIL CHARACTERSITICS	INFERENCES
	Black, fine grained moderately to highly porphyritic, hard rock	This particular soil type comprises of moderate to large crystals in a fine ground mass of minerals
	Black, fine grained, compact, sparsely porphyritic, hard rock	This particular soil type comprises of black, fine grained, compact particles with sparsely occuring large crystal in a fine ground mass of minerals
	Red bole	Soil comprising of deep reddish brown, fine grained earthly material

LEGEND

	LITHOLOGY	INFERENCES
	Aa basaltic flows (6 flows)	Aa is basaltic lava characterized by a rough or rubbly surface composed of broken lava blocks called clinker.The clinkery surface actually covers a massive dense core, which is the most active part of the flow. As pasty lava in the core travels downslope, the clinkers are carried along at the surface. At the leading
	Aa flows (4 flows)	however, these cooled fragments tumble down the steep front and are buried by the advancing flow. This produces a layer of lava fragments both at the bottom and top lava flows.
	Red bole	The formation of several flows of Deccan Traps was a discontinuous process. In states of inactivity, there were formation of the intrappean layers of the red bole beds which are products of weathering during major hiatus.

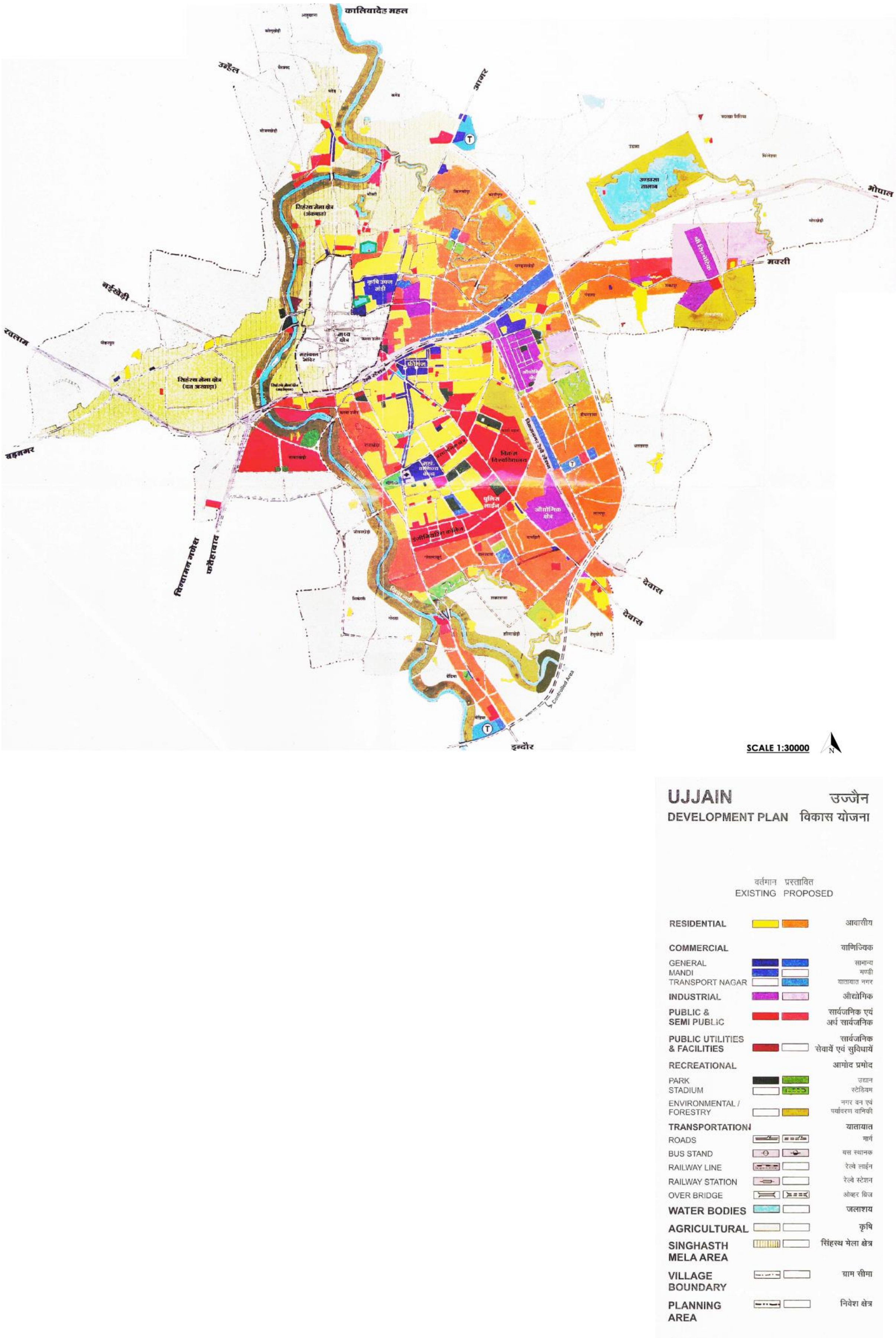
3.3.3 Geomorphology



LEGEND

	LITHOLOGY	INFERENCES
	Flood plain	A floodplain or flood plain is an area of land adjacent to a stream or river that stretches from the banks of its channel to the base of the enclosing valley walls and experiences flooding during periods of high discharge.
	Low level plateau	An elevated, comparatively level expanse of land; a tableland. (350m - 550m)
	Lineament	A lineament is a linear feature in a landscape which is an expression of an underlying geological structure such as a fault. Typically a lineament will comprise a fault-aligned valley, a series of fault or fold-aligned hills, a straight coastline or indeed a combination of these features.
	Relict Deccan Plateau	Part of the Deccan plateau, formed along the Indian peninsula.

3.3.4 Land use


कालियादेह महल
भोपाल
मक्सी
रतलाम
इन्दौर
देवास
SCALE 1:30000
N
UJJAIN उज्जैन
DEVELOPMENT PLAN विकास योजना
वर्तमान प्रस्तावित
EXISTING PROPOSED
RESIDENTIAL आवासीय
COMMERCIAL वाणिज्यिक
GENERAL सामान्य
MANDI मण्डी
TRANSPORT NAGAR यातायात नगर
INDUSTRIAL औद्योगिक
PUBLIC & SEMI PUBLIC सार्वजनिक एवं अर्ध सार्वजनिक
PUBLIC UTILITIES & FACILITIES सार्वजनिक सेवायें एवं सुविधायें
RECREATIONAL आमोद प्रमोद
PARK उद्यान
STADIUM स्टेडियम
ENVIRONMENTAL / FORESTRY नगर वन एवं पर्यावरण वानिकी
TRANSPORTATION यातायात
ROADS मार्ग
BUS STAND बस स्थानक
RAILWAY LINE रेल्वे लाईन
RAILWAY STATION रेल्वे स्टेशन
OVER BRIDGE ओव्हर ब्रिज
WATER BODIES जलाशय
AGRICULTURAL कृषि
SINGHASTH MELA AREA सिंहस्थ मेला क्षेत्र
VILLAGE BOUNDARY ग्राम सीमा
PLANNING AREA निवेश क्षेत्र

3.4 Mapping of Sacred Landscape, Ujjain

3.4.1 Ujjain as a Tirth Kshetra

Sapt Puri

-There are seven holy tirthas or pilgrimage centres known as the Sapta Puri, where Gods in different incarnations known as avatars are believed to have descended. Sapta means seven and Puri means a town.
-The Vaishnava Puranas enumerates seven sites as the gates of Moksha: Ayodhya, Mathura, Māyā, Kāsi, Kāñchī, Avantikā (Ujjain), and Dvārāvatī.

12 Jyotirlingas Shrine

Mahakal, Ujjain (or Avanti) in Madhya Pradesh is home to the Mahakaleshwar Jyotirlinga temple. The Lingam at Mahakal is believed to be Swayambhu, the only one of the 12 Jyotirlingams to be so. It is also the only one facing south and also the temple to have a Shree Rudra Yantra perched upside down at the ceiling of the Garbhagriha (where the Shiv Lingam sits). It is a place where Shakti peeta and Jyotirlingam are together.

51 Shakti Peeth

Reckoned as one of the one of the 51 shakti peethas of Goddess Durga, Harsiddhi Temple is a highly revered pilgrimage in Madhya Pradesh. The temple located on the banks of the river Kshipra . According to legends, during the event when Lord Shiva was carrying the corpse of his wife Sati, her elbow feel in the same place where the temple currently stands, and the deity is worshipped here as Harsiddhi and Shiva as Lambakarna (Long eared one).

3.4.2 Yatras and Sacred Network

REGIONAL SACRED PRECINCTS

State of Madhya Pradesh consist of 7 major pilgrimage sites.

1.INDORE	2. KHAJURAHO	3.JABALPUR
-Ujjain	-Chitrakoot	-Amarkantak
-Omkareshwar	-Maihar	
-Maheshwar		
-Mandsaur		

SAVARI

The Shahi Savari of Lord Mahakaleshwar
Hari hara Milan

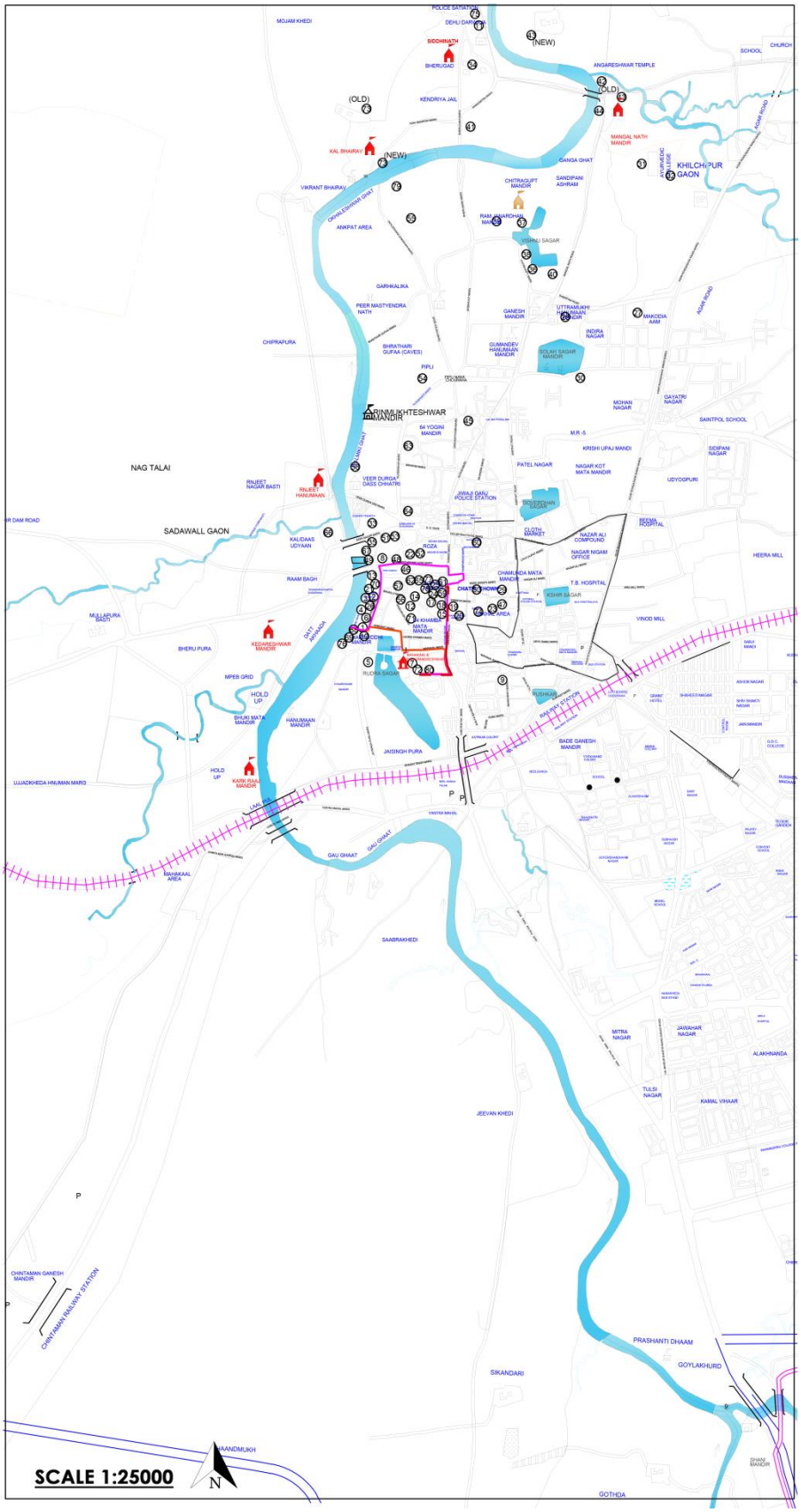
FAIRS

1. Kartik mela 2. Ganga darshan mela 3. Shanishehari mela 4. Kumbh Mela

YATRAS

1. Panchkroshi yatra 2. Ashta Tirth Yatra 3. Char Dwar Yatra 4. 84 Madev Yatra

Mapping of Yatras and Savaris



3.4.3 Fairs and Festivals

S.NO	MONTH	PAKSHA	TITHI	EVENT/ PROGRAMME
1.	Chaitra (Mar-Apr)	Shukla	Pratipada	New samvatsara (new year) puja of Mahakaleshwar and Chandramouleshwar panchang puja
2.	Vaisakh (Apr-May)	Krishna	Partipada	Continous jaldhara abhishek for the next two months
3.	Vaisakh (Apr-May)	Shukla	Akshaya tritya	Gifting pitchers and fruits
4.	Jyestha (May–June)	Krishna	Somavati amavasya	Mahakaleshwar darshan
5.	Ashadh (June–July)	Shukla	Guru purnima	Beginning of special decoration for Shravana and Chaturmas
6.	Shravana (July-Aug)	Krishna	Every monday	Savari (procession)
7.	Shravana (July-Aug)	Krishna	Amavasya	Deep puja
8.	Shravana (July-Aug)	Shukla	Every Monday	Savari
9.	Shravana (July-Aug)	Shukla	Nag panchami	Nagchandreshwar and Panchang Sringara of Mahakaleshwar
10.	Shravana (July-Aug)	Shukla	Purnima	Raksha sutra parv, Bhog and special decoration
11.	Bhadrapada (Aug-Sept)	Krishna	Every Monday	Savari (upto amavasya)
12.	Bhadrapada (Aug-Sept)	Krishna	Ashtami	Janmashtami
13.	Ashwin (Apr-May)	Krishna	Ekadashi	Uma Sanji Mahotsava
14.	Ashwin (Sept-Oct)	Shukla	Dvitiya	Uma Sanji visarjan savari
15.	Ashwin (Sept-Oct)	Shukla	Dashmi	Vijay Dashmi, Shani puja and savari
16.	Ashwin (Sept-Oct)	Shukla	Purnima	Sharadotsav, Dugdha vitran
17.	Kartik (Oct-Nov)	Krishna	Chaturdashi	Annakoot, Abhyanga snana
18.	Kartik (Oct-Nov)	Krishna	Amavasya	Diwali
19.	Kartik (Oct-Nov)	Shukla	Every Monday	Savari
20.	Kartik (Oct-Nov)	Shukla	Vaikunth chaturdashi	Hari-Har Milan Savari at midnight
21.	Margshirsha (Nov-Dec)	Krishna	Every monday	Savari
22.	Pausha (Dec-Jan)	Shukla	Dhan sanskriti	Annakoot
23.	Magha (Jan-Feb)	Krishna	Vasant Panchami	Special puja
24.	Phalgun (Feb- Mar)	Krishna	panchami	Different shringaras of Mahakaleshwar are done all nine days from Sashthi to Shivratri
25.	Phalgun (Feb- Mar)	Krishna	Trayodashi	Mahashivratri mahotsava
26.	Phalgun (Feb- Mar)	Krishna	Amavasya	Sehra darshan and noon Bhasma Aarti
27.	Phalgun (Feb- Mar)	Shukla	Dvitiya	Panch- Svaroop shringara darshan
28.	Phalgun (Feb- Mar)	Shukla	Purnima	Holika utsav
29.	Chaitra (Mar-Apr)	Krishna	Panchami	Rang panchami, Procession of Mahakal Dhwaja in city

Above listed are the major fairs and festivals celebrated in Ujjain and the rituals associated.

3.4.4 Temples of Ujjain

There are 5 main temple groups in Ujjain as listed below:-

Vaishnavism - The tradition is known for the loving devotion to an avatar of Vishnu (often Krishna), Key texts in Vaishnavism include the Vedas, the Upanishads, the Bhagavad Gita, the Pancaratra (Agama) texts and the Bhagavata Purana.
As a whole Vaishnavites apply a vertical tilak on the forehead called Urdhva Pundra

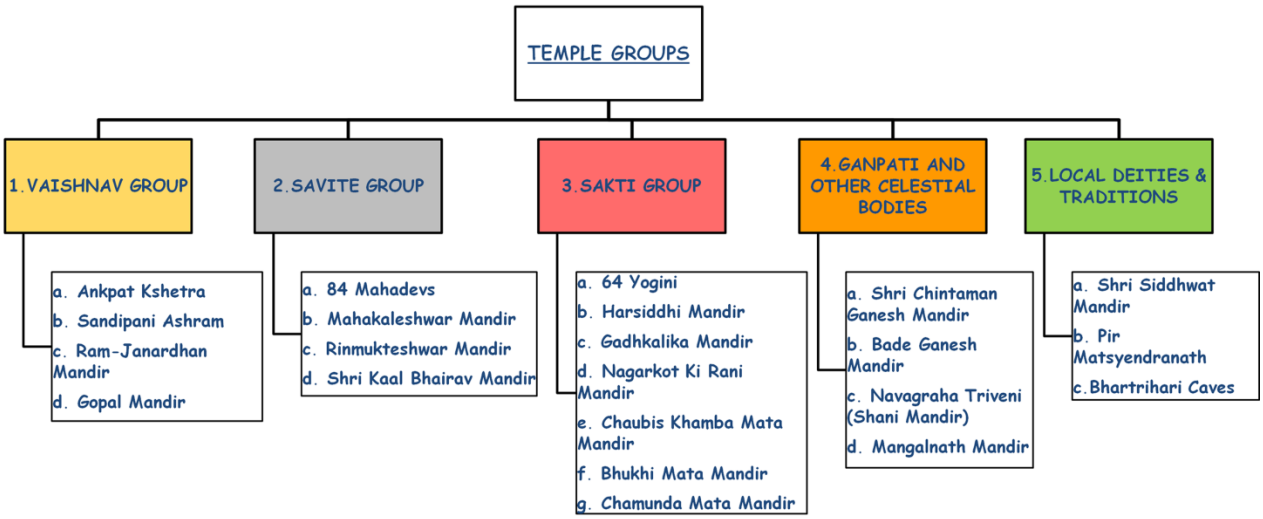
Shaivism - Shaivism is the theology that is predominantly related to the Hindu god Shiva. The Śvetāśvatara Upanishad (400 - 200 BCE) is the earliest textual exposition of a systematic philosophy of Shaivism. The Shiva Rahasya Purana, an Upapurana, is an important scriptual text; another is Tirumurai.
Savites are identified with horizontal tilak called Tripundra on forehead and garlands of Rudraksha.

Saktism - ("doctrine of energy, power, the Goddess") is a major tradition of Hinduism, wherein the metaphysical reality is considered feminine and the Devi (goddess) is supreme. It includes a variety of goddesses, all considered aspects of the same supreme goddess.

Ganpati and other Celestial bodies

Local Deities & Traditions -sacred tree, saints included

Figure 4 Temple sects in Ujjain



Hence, all major temples of Ujjain have been categorised on the basis of above listed groups.

3.4.5 Ghats of Ujjain

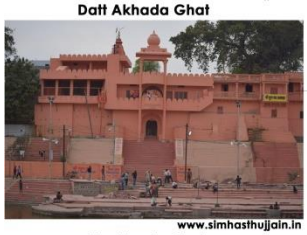
1. Ram Ghat - The Shri Ram Ghat, also known as Ram Ghat is the most ancient bathing ghat and is very popularly visited during the Kumbh Mela. It is located near the Harsiddhi Temple.
2. Datt Akhada Ghat - This ghat is situated on the left bank of River Kshipra, connecting Ujjain Barnagar Road. A road extending from the left side of a small lane on the Ujjain Barnagar Road will lead to this Ghat.
3. Siddhwat Ghat - Siddhwat Ghat is situated near Siddhawat Temple, on the left bank of River Kshipra.
4. Mangalnath Ghat - These three ghats are located near the bridge of the auspicious Mangalnath Temple, on the right and left banks of holy River Kshipra. These ghats were developed by the Water Resource Department for the purpose of the devotees who come for Simhasth Maha Kumbh or the Holy Bath.
5. Rinmukteshwar Ghat - This Ghat is situated near Rinmukteshwar Temple. You will find an ancient statue of Lord Shiva's main host "Virbhadra" and old tree under which Rinmukteshwar's Lord Shiva lingam and ancient Ganesh idol are established.
6. Kabir Ghat - Kabir ghat is situated on the left bank of River Kshipra, which is located on the right side of the Ujjain Barnagar road.
7. Narsingh Ghat - This ghat is situated on the banks of River Kshipra, on the left side of which lies the famous Kark Raj Temple opposite Bhukimata Temple.
8. Bhukimata Ghat - This ghat is situated on the left side of River Kshipra, near the famous Bhukimata Temple. A road extending from the left side of a big bridge on the Ujjain Chintaman Road leads to this Ghat.
9. Gau Ghat - It was created for the bathing purpose of the devotees during the auspicious occasion of Simhasth Maha Kumbh and the Holy Bath.
10. Prashanti Dham Ghat - This Ghat is situated in the atrium of Prashanti Dham Temple & towards the right coast of Kshipra river.
11. Triveni Ghat - The temple of Navagraha, the nine planets, on the Triveni ghat of Shipra is a prominent centre of attraction for the pilgrims. There is a confluence of Khan river near Triveni ghat on the Shipra. Mythological sanctity of the invisible river Saraswati, associated with the story of Triveni-sangam, is attributed to this place also.
12. Chintaman Ghat - This ghat is situated on the left bank of River Kshipra which flows under the Lalpul Railway Bridge located near a big bridge on the Ujjain Chintaman Road.

Mapping of Ghats, Ujjain

Siddhivat Ghat

www.simhasthujjain.in

Datt Akhada Ghat



www.simhasthujjain.in

Bhukimata Ghat

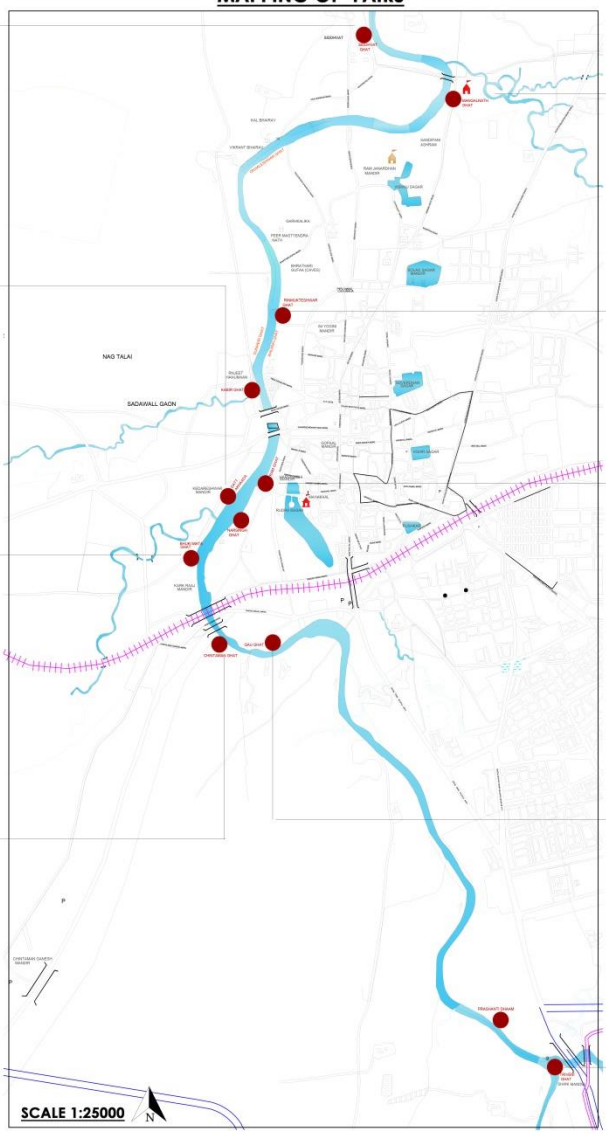
www.simhasthujjain.in

Chintaman Ghat

www.simhasthujjain.in

KEY PLAN

MAPPING OF FAIRS



Mangalnath Ghat

www.simhasthujjain.in

Rinmukteshwar Ghat

www.simhasthujjain.in

Ram Ghat

www.simhasthujjain.in

Sau Ghat

www.simhasthujjain.in

Triveni Ghat

www.simhasthujjain.in

4. Sapt Sagars – Documentation and Inferences

4.1 Rudra Sagar

Rudra is a Rigvedic deity, associated with wind or storm, and the hunt. The name has been translated as "the roarer".
Sagar is a sea or ocean, a large lake.

INTRODUCTION -
The theonym Shiva originated as an epithet of Rudra, and the name Rudra has been taken as a synonym for the god Shiva and the two names are used interchangeably.

A close study of contours reveal that the mound on which Mahakal temple is located at a distance of 12m from the river, forms a terrace at 6m where a large sheet of water (Rudra Sagar) joins/divides the temple from the goddess temple of Harsiddhi located at the west bank of the lake. This sacred hill of Mahakal and his consort around Rudra Sagar was the scene of one of the earliest Saivism, inviting some of the most important teachers to this place.

At present the tank has a densely populated slum area on
its southern side, Mahakal Temple Complex on eastern side, Settlements and temple
complexes on western side and Ramghat on North West side.

System & Characteristics

1. Rudra Sagar Lake forms the backdrop of Mahakalji Mandir and is also used for ritual bathing on several occasions round the year.
2. Total Catchment Area of lake is 218 ha with the water spread of the lake being 22 ha in extent. The elongated lake is 270m wide at its widest point and 1100 m along its length. Its peripheral length is 2600m with average summer depth of 0.50 m and maximum depth varying between 1.50 -2.50 m post monsoons.
3. Presently the main source of water is storm water runoff and wastewater.
4. Lake is physically divided into three parts: Central Lake, northern Lake and Southern lake.
5 The northern area [2.52 ha] has got segregated from the main lake as a result of a dividing causeway. Due to overflow from sewer line this portion has accumulated a lot of sludge.
6. The central zone [12.83 ha] has shallow waters and is eutrophic status owing to inflow of wastewater from the east bank.
7. Southern area [7 ha] has extremely shallow bed and quickly becomes dry thereafter being used for crossing the lake or field sports.

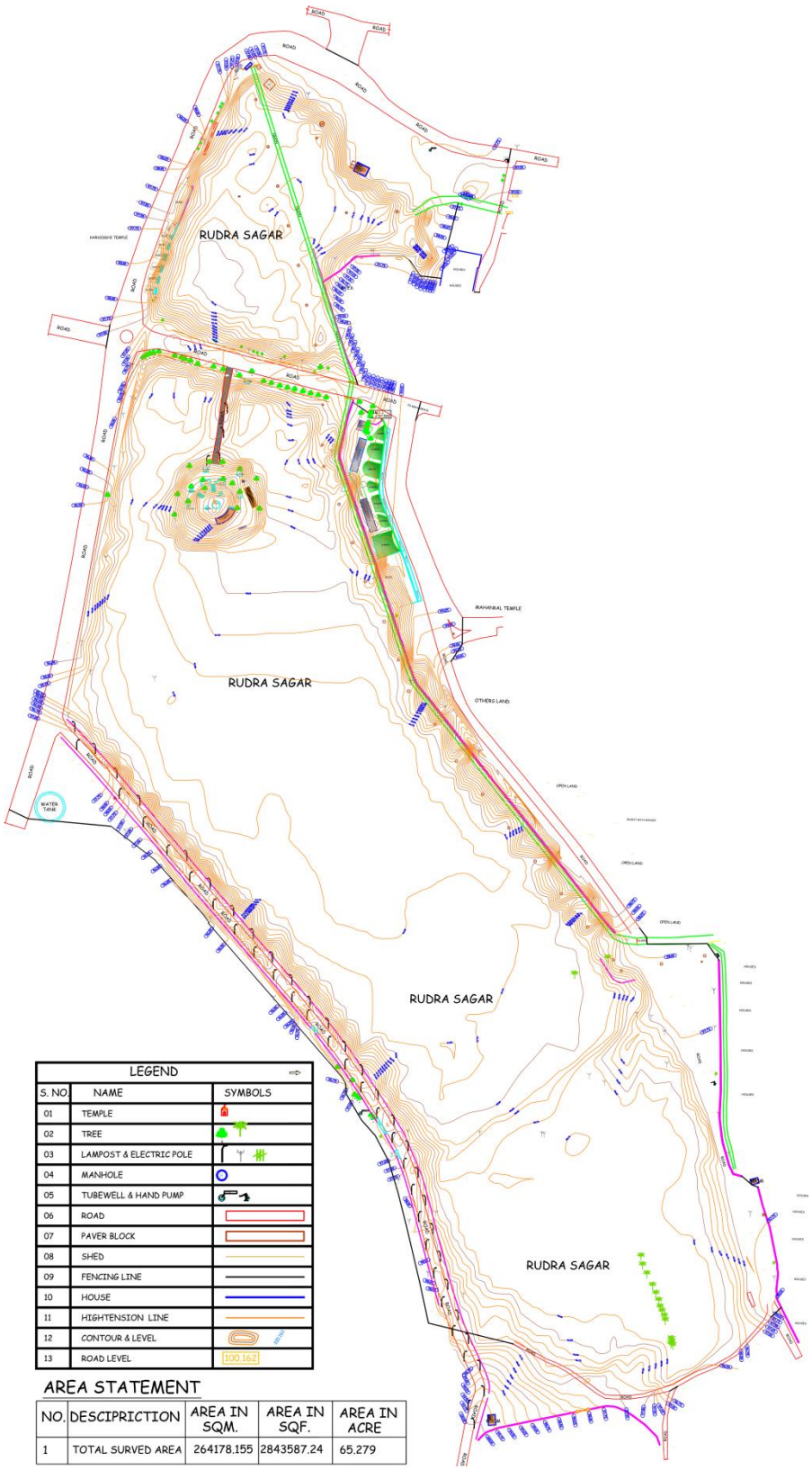
EXISTING DRAINAGE SYSTEM

1. The existing lake is fed by two major drains called ‘Gandhanalla’ and ‘Hanuman nalla’ from the town. There is a sewer drain running from south to north on east bank. The outlet point is undersized and choked with garbage leading to spillovers during rains.
2. The discharge of these sewers has contaminated the underground water of this area to a great extent. The level of pollution is the highest in the Ujjain region. It contains calcium, magnesium, sulphate and nitrate salts.

Figure 5 Present condition of Rudra sagar

s

Figure 6 Rudra Sagar



OBSERVATIONS

1. Rudrasagar is in the midst of urbanized area whose changing catchment character has limited the rainfall runoff flows into the lake.

2. The sources of water are rainfall which directly falls over the lake and the immediate surrounding area.
3. The water body has shrunk because of erosion of the banks and the Consequent silting Sewage drains leading into this water body aggravate the situation further as it is also a recharge area with two paleo-channels.
4. The rapid urbanization of the area unaccompanied by a sewerage system resulted in untreated sewage inflows into the lake.
5. The lake today is experiencing "eutrophication" due to high content of nutrients. This vitiates its visual quality.
6. In 2001 , complete dry land in place of lake suggests , lack of maintenance. No water conservation technique empleyed at this stage.
7. Presence of “surfacant” in 2012 shows major degradation of lake till 2014.
8. Condition of the lake gets even worse during Kumbh , as water is pumped out to create space for akhadas to reside.

ISSUES
1. Organic sediments settling on the bed
2. Foul odour in vicinity
3. Undesirable Visual Aesthetics
4. Leaching of contaminants into the underlying groundwater aquifer
5. Breeding ground of mosquitoes and other disease vectors
6. Inadequate water depth & spread round the year
7. Water quality above bathing norms
8. Absence of aquatic life due to eutrophication
9. Rainfall runoff inflow brings pollutants
10. Bypass Drain outlet through Rudra Sagar undersized [Sewage inflow through drains].
11. Solid waste/garbage dumped directly in Rudra Sagar Garbage is prevalent contributing to poor water quality and ugly visual aspect
12. There is a problem of untreated point inflow and direct discharge of waste water

4.2 Pushkar Sagar

Pushkar in Sanskrit means blue lotus .
- Hindus revere it with the gods Vishnu, Brahma and to a lesser degree Kubera, and the goddesses Lakshmi and Saraswati .
- In Buddhism the blue Lotus flower is symbolic with a victory over the spirit of self, that is to say being able to leave wisdom, intelligence, and knowledge behind and becoming open to spirituality and the attachment to life.

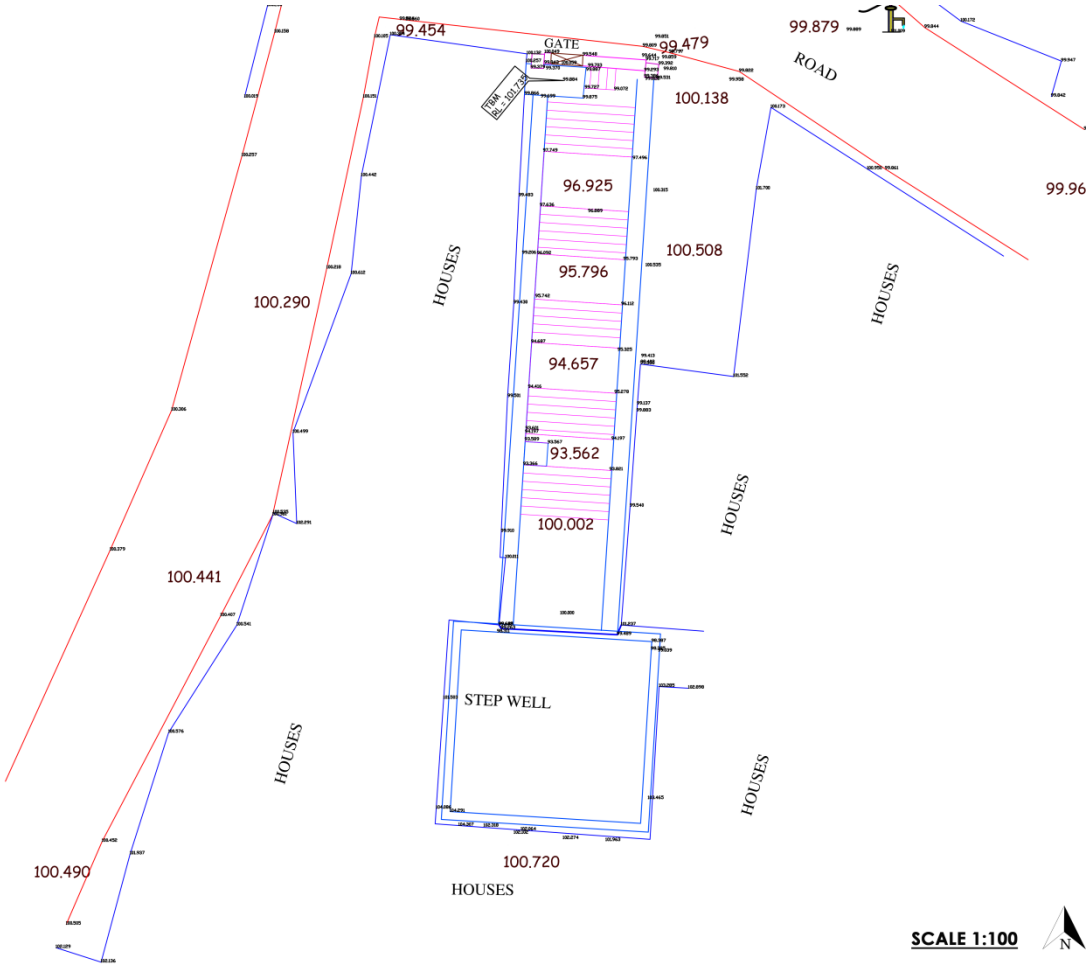
INTRODUCTION -
Pushkar sagar is situated at Naliabakhal is one of the Seven Holy Tanks of the city Ujjain. Due to rapid urbanization and absence of public drainage system in the city this water body is converted in to a collection tank of dirty water.

OBSERVATIONS

1. North of Sakhipur not far from Rudra Sagar area.
2. Heavily encroached and surrounded by houses.
3. Pushkara Sagar is also under the process of reclamation.
4. The tank reduced to a baoli now for use by pilgrims for performing rituals.
5. Water present in baoi is heavily degraged and not fit for bathing or drinking purpose.

ISSUES

1. Foul odour in vicinity
2. Undesirable Visual Aesthetics
3. Breeding ground of mosquitoes and other disease vectors
4. Water quality above bathing norms
5. Solid waste/garbage dumped directly in baoli. Garbage is prevalent contributing to poor water quality and ugly visual aspect
6. There is a problem of untreated point inflow and direct discharge of waste water.



4.3 Kshir Sagar

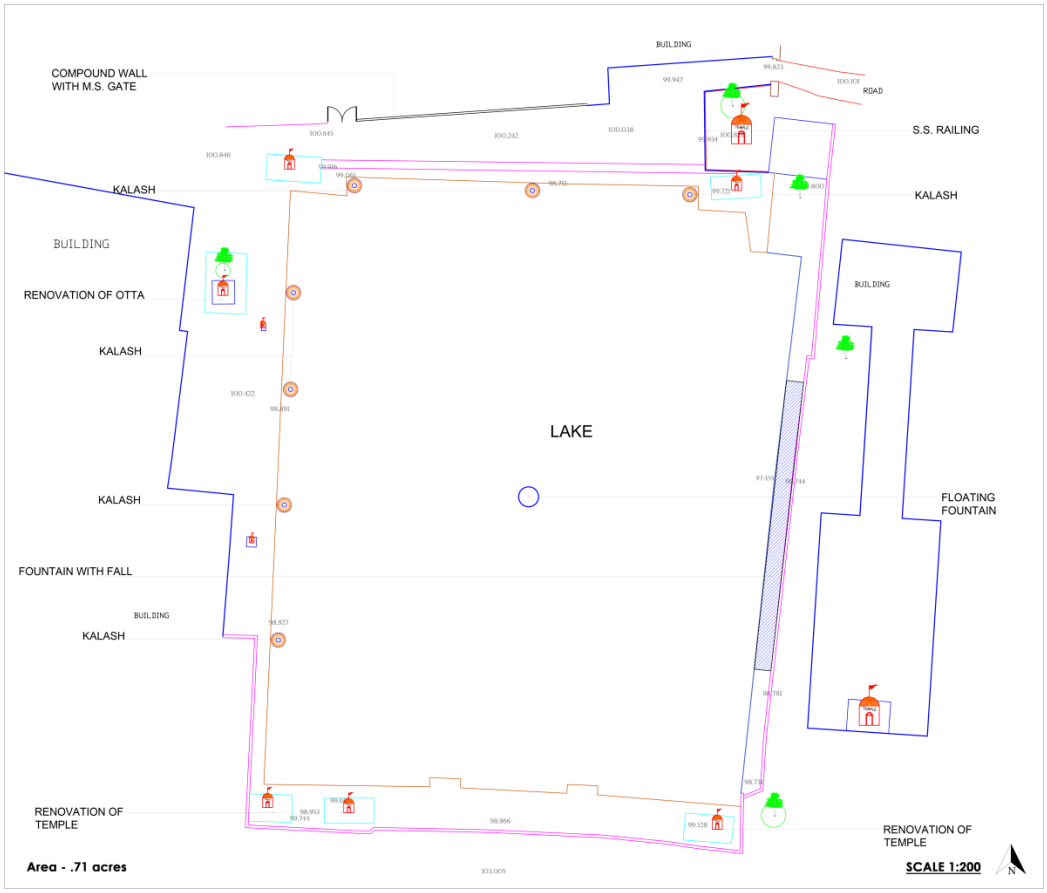
In Hindu cosmology, the Ocean of milk (kṣīroda, kṣīrābdhi or Kṣīra Sāgara) is the fifth from the center of the seven oceans.
It is spoken of in the Samudra manthana.

OBSERVATIONS

1. Originally extended up to the railway station and gave birth to streams like Gandhavati which dried up due to the Nai Sarak and Kanthal area development.
2. Natural source of water supply blocked due to siltation.
3. Garbage is thrown into the tank, although after Simhastha 2016 proper maintanance has been taken of the tank.
4. Lacks accessibilty along the premesis.

ISSUES

1. Organic sediments settling on the bed
2. Foul odour in vicinity
3. Undesirable Visual Aesthetics
4. Breeding ground of mosquitoes and other disease vectors
5. Inadequate water depth & spread round the year due to siltation
6. Absence of aquatic life due to eutrophication
7. Rainfall runoff inflow brings pollutants
8. Garbage is prevalent contributing to poor water quality and ugly visual aspect
9. There is a problem of untreated point inflow and direct discharge of waste water.



4.4 Gowardhan Sagar

Govardhan Sagar that has almost lost its existence, located in the east of Nikas and south-west of the hill of Nagar Kot Devi. This water body is situated on Ankpat Road and near patel colony at Ujjain city.

OBSERVATIONS
1.UDA and other bodies encroaching and reclaiming land.
2. Defecation and garbage dumping is prevalent.
3. Lake completely dried in 2001, but in 2006 water is quite visible in google image, hence proving that lake was still in fair condition.
4. Since 2006, lake has been covered with invasive macrophytes, suggesting the degrading condition of lake till date.
5. Also being under disputed land category, maintanance and restoration has been avoided by the authority.

ISSUES
1. Over growth of macrophytes - Eichhornia crassipes, Ipomoea aquatica, Spirodela polyrhiza, Limnophila sessiliflora and Lemna sp.
2. Heavy siltation in lake.
3. Organic sediments settling on the bed
4. Foul odour in vicinity
5. Undesirable Visual Aesthetics
6. Breeding ground of mosquitoes and other disease vectors
7. Inadequate water depth & spread round the year
8. Water quality below bathing norms.
10. Rainfall runoff inflow brings pollutants
11. Solid waste/garbage dumped directly. Garbage is prevalent contributing to poor water quality and ugly visual aspect
12. There is a problem of untreated point inflow and direct discharge of waste water

Figure 7 Present condition of Gowardhan Sagar



4.5 Purushottam Sagar

1. With the beginning of Purushottam Maas, the devotees headed out for the Darshans of Sapt-Sagar, 84 Mahadev and Nar-Naryan of the city. Purushottam, the holy month, occurs once every three years.
2. The existing lake is mostly rain fed , but on the west of lake is an existing nallah which also feds the drain.
3. Although a sewer line passes on the north of the lake.
4. Sandipani Ashram , Geeta Shakti peth , Hanuman Mandir and Shri

Chandrayateshwar Mahadev are few temples near this lake.
5. Ankpat marg is the major road on west, Indra nagar -new residential settlement on south.

OBSERVATIONS
1. Contains water throughout the year.
2. The rapid urbanization of the area unaccompanied by a sewerage system resulted in untreated sewage inflows into the lake.
4. Divided into sections and is used for singhara cultivation.
3. From 2001-2014, lake has been exploited for agriculture and later left in degraded condition, with vast area of lake covered with macrophytes .
5. lack of maintenance. No water conservation technique empleyed at this stage.
6. Pathway built along the periphery of lake in 2015, combined with sound and light shows.
7. In 2015 major changes for restoration of lake were made for Simhastha 2016.
- pathway designed along the periphery
- renovation of temple precincts near the lake
- check on water quality.

ISSUES
1. Lake premises does not incorporate barrier free environment.
2. Water quality unfit for drinking purposes.
3. Religious offerings disposed directly in lake.
4. Garbage is prevalent contributing to poor water quality and ugly visual aspect
5. There is a problem of untreated point inflow and direct discharge of waste water.
6. Heavy vehicular movement along the lake edges, which disturbs the overall picturesque value.
7. Dense urbanisation in west and south of lake.

Figure 8 Present condition of Purushottam Sagar

Fig. No. Purushottam Sagar

4.6 Vishnu Sagar

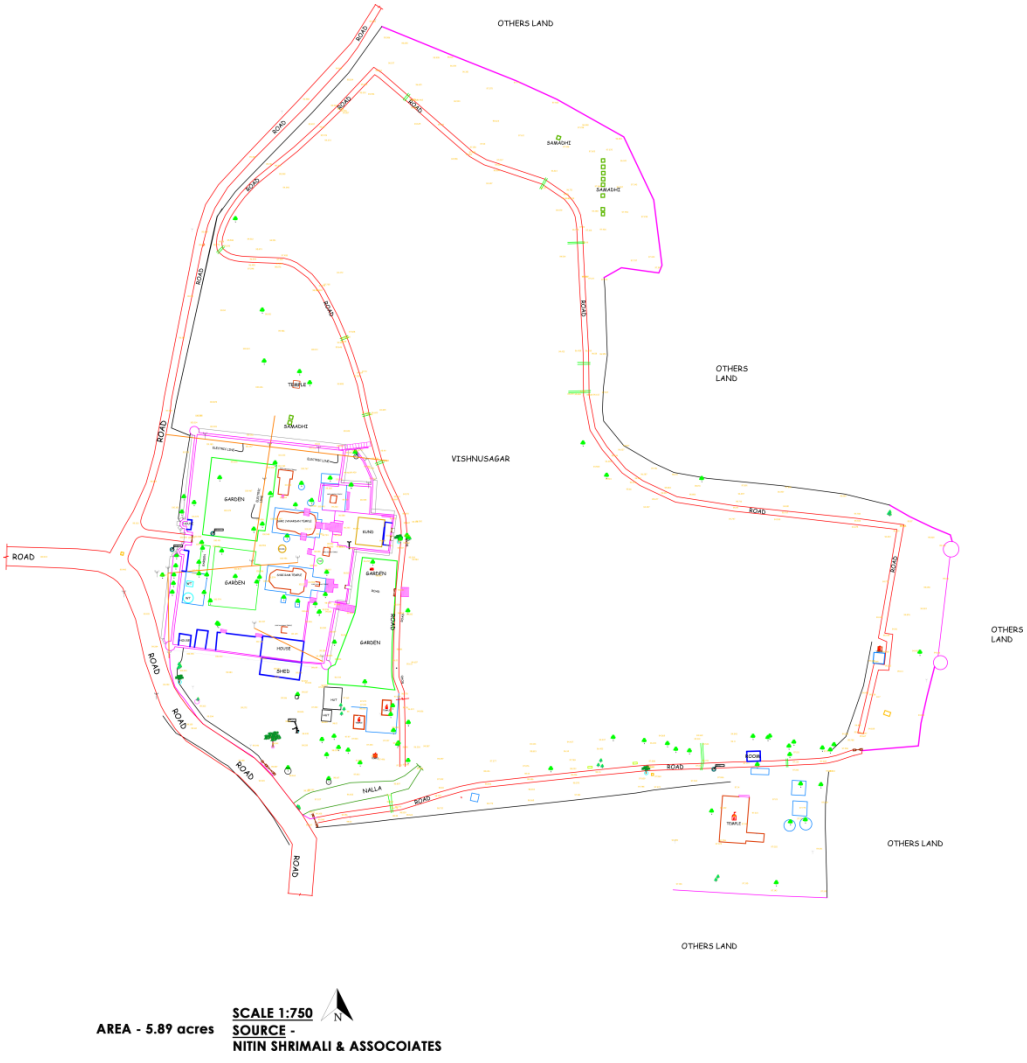
OBSERVATIONS

1. Contains water throughout the year.
2. Lake is rain fed.
4. Fountain’s and musical shows done ocassionaly.
3. Lake was completely dried in 2001, with moderate vegetation visible on site.
5. In 2007/2008 lake was desalted and vegetation removed, so as to collect rain water .
6. Lake vicinity comes under private ownership.
7. In 2015 major changes for restoration of lake were made for Simhastha 2016.
- Gazebos and pathway designed along the periphery
- renovation of temple precincts near the lake
- Check on water quality.
8. Different species of birds can be seen in the tank during monsoon.
9. Away from the city; therefore forested and wooded till 1966 such that hunting was banned .

10. Childrens park provided.
11. Sandstone steps for ghat made in2004

ISSUES
1. Playground was part of the lake.
2. Water quality unfit for drinking purposes.
3. Religious offerings disposed directly in lake.
4. Garbage is prevalent contributing to poor water quality and ugly visual aspect
5. Dustbins are provided, but not used.
6. Kund inside the temple precinct has not been properly maintained.

7. Lake covered much larger area before, but as Ram Janardhan temple was tilting , hence to a strong foundation, ground infront of the lake was raised and leveled, where now a playground is made.
8. As the premises is open for all, ethical principles are not followed,
- People consider it as a recreational space more than a sacred space.
- Walk around and inside the temple precinct with shoes,
- dustbins are provided , but are rarely used by visitors.



4.7 Ratnakar Sagar

Near Maksi Road about 12-15 kms out of Ujjain close to Madhavpura village.

OBSERVATIONS

1. Irrigation tank providing water for industry and dairy plants. Has a spread of 10 sq km.
2. Chhattri and ghats are 16th century.
3. Pingala Nadi serves the tank.
4. The villagers illegally fish here and use it for their daily needs.
5. Good state today and measures should be taken to retain it in this state.
6. A resting and recreational space for pilgrims during Panchkroshi Yatra.
7. Large farmland surrounds the lake.
8. Till 2006 lake was in degraded condition and agricultural was practiced on its major portions.

9. Use “Dondi” for fishing , as boats are not allowed.
10. Several wells are situated near the lake , which are used to provide drinking water.
10. A polymer factory was setup across the lake , which was shut down due to disputes.
11. Farmlands are irrigated by water from the lake
12. Only during Panchkroshi yatra , pilgrims arrive.
13. People of schedule cast are not allowed to use certain ghats of lake.

ISSUES

1. Lake premises does not incorporate barrier free environment.
2. Improper management of ghats.
3. Religious offerings disposed directly in lake.
4. Garbage is prevalent contributing to poor water quality and ugly visual aspect
5. Heavy vehicular movement along the lake edges, which disturbs the overall picturesque value.
7. Railway line situated on the south of lake.
8. Infiltration of agricultural waste directly in lake.
9. Despite being banned, fishing is still practiced.

Figure 9 Present condition of Ratnakar Sagar

5. PROPOSAL – RUDRA SAGAR

The sacred landscape of Ujjain thrives on myths, legends and strong spiritual belief associated with numerous temples and natural environment, seen as manifestation of supreme power by the thousands of pilgrims visiting the city on daily basis. The pressure on these landscape increases during fairs, festivals and major religious congregations.

Hence, mapping of below listed parameter was done on the sample plot site- Rudra Sagar, so as to understand and mark the ecological problems for development of a framework for master plan.

- Extent of degradation of flood plains,
- suface and subsurface condition of the city.
- quality of wetland
- sewrage inlet and outlet
- source of pollution of watershed (Rudra Sagar).
- illegal encroachment,
- Present movement corridors
  (roads, major traffic terminals).
- Activities around important sacred landmarks
- Physical and biological condition of water bodies

After analysing above listed set of parameters, critical issues degrading the lake ecosystem were highlighted like-

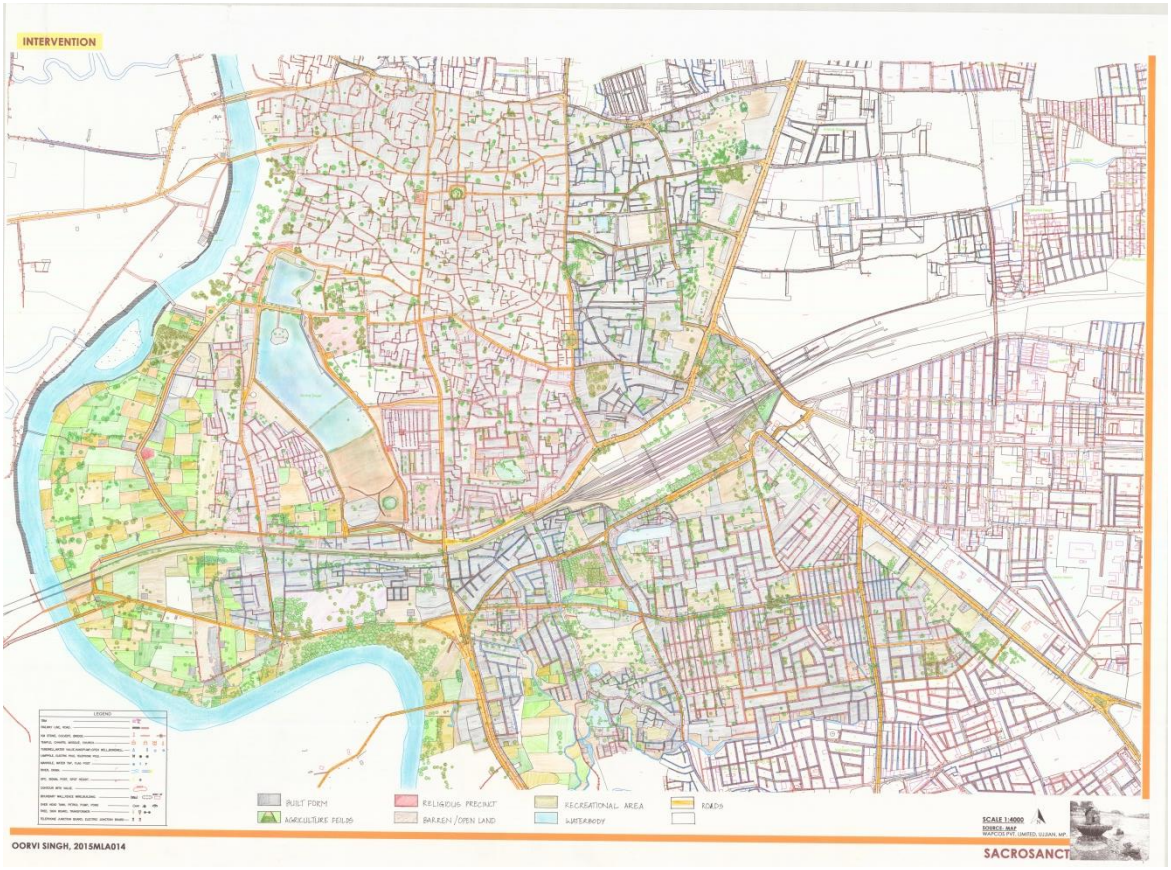
- Condition of water bodies during fairs and festivals, which in turn in negatively impacting the wet land ecosystem
- Lack of public utility services.
- Absence of well managed pedestrian network.
- Lab testing of water sample from the site, to check the present water quality and pollution status.
- Reduction in area (shrinkage)
- Reduction in depth (siltation)
- Algal bloom , aquatic weeds
- Eutrophication , toxic pollution

Thus, a framework is developed to conserve the lake ecosystem, which will positively impact the water body and help in reviving the lost sacred context of the city.

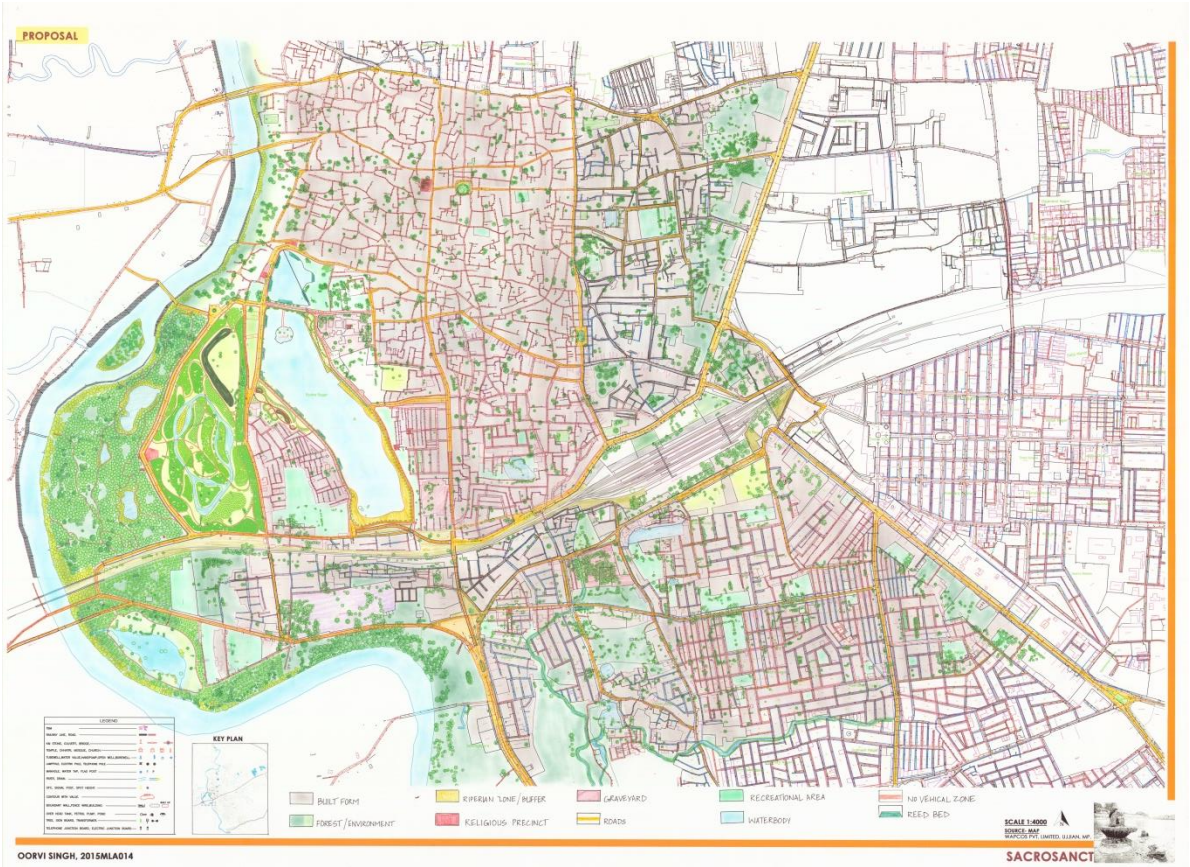
Frame Work - focused on following key features-

- Improvement of water quality by in lake treatment
- DE siltation of lake for removal of organic and toxic sediments.
- Catchment treatment to check erosion.
- Diversion and treatment of residential sewage.
- Provision of recreation space surrounding the lake and guidelines for its management.

Present case scenario-



Proposal-



6. CONCLUSION

The importance of Ujjain on a sacred map of India is inevitably centred around numerous Temples of various religious sects , especially Mahakal Temple, Kumbh, cultural landscape of Kshipra riverfront and Sapt Sagars.

The aesthetic quality of the city resides in spiritual and mythical dialogue between built (temples, shrines etc.) and natural elements (grooves, lakes, river) of the environment, which is under a constant threats from new developments, degradation and lack of civic management and upkeep.

This study highlights the negative impact on these natural sacred sites due to increased pressure on landscape from religious tourism, negligence in administration and outlines its conservation through landscape planning and design at macro level.

The proposal underlines the need to protect and manage sacred water bodies, in this case Rudra sagar, through interactive buffer spaces linking Mahakal temple complex with Rudra sagar and river Kshipra. Ecological planning of Kshipra riverfront, lake water quality assessment through regular supervision and management, streetscaping to aid accessibility during fairs, festivals and yatras. Traffic management by separating high speed traffic from the pedestrian core, providing parking and other public utility in major sacred precincts. Hence, the master plan offers a blue print for conservation of Ujjain’s sacred landscape through environmentally sustainable site planning proposals.

Bibliography

(n.d.). Retrieved from Ramsar: http://www.ramsar.org/

Dongray, K. R. (1935). *Ujjain.* Gwalior: Alijah Darbar Press.

Govt., M. P. (2015). Retrieved 2016, from Simhasth: http://www.simhasthujjain.in

Gunn, A. T. (2008). *Sacred Sites: an Overview.* The Gaia Foundation.

Madhya Pradesh Govt. (April, 2016). *Sandesh*.

Madhya Pradesh Govt. (May, 2016). *Sandesh*.

Madhya Pradesh Town and Country Planning. (n.d.). *Ujjain Master Plan (2021).* Bhopal.

Pal, D. M. (2014). *Ujjain, The city of temples.* Niyogi Books.

Samanta, D. (1997). *Sacred Complex of Ujjain.* Delhi: D.K Printworld.

School of Planning & Architecture, Bhopal. (2011, Issue lll). *Spanderl*.

Sinha, A. (2011). *Landscapes in India : Forms and Meanings.* Asian Educational Services.

Sinha, A. (2014). The Sacred Landscape of Braj, India. *Landscape Journal 33:1 ISSN 0277-2426*, 59-75.

THE RAMSAR CONVENTION SECRETARIAT. (2004). *Information Sheet on Ramsar Wetlands.* Retrieved from Ramsar: http://www.environment.gov.au/water/topics/wetlands/database/pubs/43-ris.pdf

Valderrama, A. S. (2013). ORACLE LANDSCAPE OF ORCHHA, INDIA: RECLAIMING. University of Illinois at Urbana Champaign.