

DRAFT **URBAN RIVER MANAGEMENT PLAN** **MIRZAPUR**

NAGAR PALIKA PARISHAD MIRZAPUR
UTTAR PRADESH
June, 2026

ACKNOWLEDGEMENT

Messages from DG- MMCG

Messages from DIRECTOR NIUA

Messages from STATE PS-UD

Message- DM/Commisssinor's

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ABBREVIATIONS

S.no.	Abbreviations	Full form
1.	AMRUT	Atal Mission for Rejuvenation and Urban Transformation
2.	BOD	Biological Dissolved Oxygen
3.	CGWB	Central Ground Water Board
4.	COD	Chemical Oxygen Demand
5.	CPCB	Central Pollution Control Board
6.	DEM	Digital Elevation Model
7.	DFL	Design Flood Level
8.	DGC	District Ganga Committee
9.	DIC	District Industries Centre
10.	DM	District Magistrate
11.	DO	Dissolved Oxygen
12.	DUDA	District Urban Development Agency
13.	ETP	Effluent treatment Plant
14.	FSTP	Faecal Sludge Treatment Plant
15.	GHSL	Global Human Settlement Layer
16.	HFL	Highest Flood Line
17.	I&D	Interception & Diversion
18.	IEC	Information Education Communication
19.	kLD	Kilo Liters per Day
20.	MLD	Million Liters per Day
21.	MoEFCC	Ministry of Environment, Forest and Climate Change
22.	MSWG	Multi-Stakeholder Working Group
23.	MVDA	Mirzapur–Vindhyachal Development Authority
24.	NBS	Nature Based Solutions
25.	NGO	Non-Governmental Organisation
26.	NGT	National Green Tribunal
27.	NGT	National Green Tribunal
28.	NIUA	National Institute of Urban Affairs
29.	NMCG	National Mission for Clean Ganga
30.	NPP	Nagar Palika Parishad
31.	PPP	Public-Private Partnership
32.	SBM	Swachh Bharat Mission
33.	SBR	Sequencing Batch Reactor
34.	SHG	Self Help Groups
35.	SMCG	State Mission for Clean Ganga
36.	STP	Sewerage Treatment Plant
37.	TDS	Total Dissolved Solids
38.	TPD	Tonnes Per Day
39.	UASB	Up-flow Anaerobic Sludge Blanket
40.	UDD	Urban Development Department
41.	ULBs	Urban Local Bodies
42.	UPPCB	Uttar Pradesh pollution Control Board
43.	URDPFI	Urban and Regional Development Plans Formulation and Implementation Guidelines
44.	URMP	Urban River Management Plan
45.	UWD	Urban Waterbody Diagnostic Tool
46.	WTP	Water Treatment Plant
47.	ZLD	Zero Liquid Discharge

E. EXECUTIVE SUMMARY

A river and a city share an important relationship. The river supports the city by providing water, helping regulate the climate, and shaping the city's identity. In return, the city is responsible for protecting the river by conserving its catchment area, managing water flow, and preserving biodiversity. However, in recent years, this relationship has become unbalanced, with city relying on resources from rivers and disposing waste into them, which harms the river's health. The Urban River Management Plan (URMP) is a strategic framework that aims to restore this relationship by moving from exploitation of rivers to their protection and sustainable management.

The purpose of the Urban River Management Plan (URMP) Mirzapur is to develop a dedicated strategy for managing River Ganga and one stream in the planning area in an efficient and sustainable manner. This distinctive relationship underscores the need for a management approach that not only strengthens the city's internal water systems but also embraces its role as a steward of the larger river basin.

River water quality at Vindhyachal (upstream) and Mirzapur (downstream) meets Class C category as per CPCB standards. The degraded water quality is due to microbial contamination from sewage and waste inflows. The degradation is also due to the impact of indirect pressures from nallahs, groundwater extraction and land-use practices, including solid waste dumping in along the river, sewage discharge into agricultural fields and disposal of religious waste at Baba Ghat, Baria Ghat, Hanuman Ghat etc. These interconnected challenges underscore the need for integrated pollution management and ecological restoration within Mirzapur's urban river framework.

The document is based on the Strategic Framework for Managing Urban River Stretches developed by the National Institute of Urban Affairs (NIUA), in association with the National Mission for Clean Ganga (NMCG). It proposes tangible and practical actions along with several recommendations under a ten-point agenda (or objectives), to ensure the "Nirmal" (clean) and "Aviral" (continuous) nature of the river. The interventions are presented at the concept level for broad understanding, with Detailed Project Reports (DPRs) to be prepared subsequently. URMP document is a living document, evolving continuously to address emerging issues in river management.

Approach adopted for preparing URMP for Mirzapur

To prepare URMP, a Multistakeholder Working Group (MSWG) comprising 13 members, chaired by the District Magistrate, Mirzapur, was constituted to lead the process. The team from NIUA and NMCG jointly facilitated the MSWG meeting. This was followed by a rapid baseline assessment to understand river-related issues and challenges faced by the city and to identify opportunities for enhancing river-city interaction. The assessment was based on secondary data, published reports and ongoing projects. It covered planning provisions related to river, streams, nallahs etc; status of river pollution and groundwater, encroachments in floodplain and ongoing projects in the city and waterbodies. Based on the baseline assessment and MSWG deliberations, 21 projects/interventions were identified for inclusion in the Mirzapur URMP.

Envisaged benefits of URMP for Mirzapur city

It is envisaged that implementing URMP will yield several tangible and intangible benefits, as listed below.

- ▶ It will improve climate resilience and environmental outlook of the city, making it more appealing to residents and visitors as well as help in providing ancillary benefits such as water pollution control, thriving biodiversity, flood mitigation and improved groundwater recharge.
- ▶ It will improve the connect between the residents and the river by creating avenues for recreation, social bonding and leisure thereby improving the quality of life of the residents.
- ▶ It will boost the city's river-related economy and provide livelihood for multiple stakeholders.

- URMP will create a premise for shared governance with key stakeholders and citizens and enable them to take on a more active role in managing the city's environmental assets and instilling a sense of ownership around actionable items.

Interventions proposed in URMP

The table below lists the key details of 21 interventions which includes the agencies responsible for implementation, estimated costs and the source of funding against each intervention.

Table E-1: List of Proposed Interventions

Sl. No.	URMP Objective	Intervention	Responsible Agency	Block Cost (in lakhs)	Potential Financing Sources	Timeline (in Years)
2	To keep river free from pollution	Intervention 1: Fulfilling the gap in sewage treatment capacity by constructing a new 20 MLD STP at Bharuhana, Mirzapur	Jal Nigam (Urban)	5100	Namami Gange & AMRUT 2.0	3
		Intervention 2: Upgradation of existing 14 MLD UASB based STP at Pakka Pokhara	Pay Nigam (Urban), Mirzapur	700	Namami Gange & AMRUT 2.0	0.5- 1
		Intervention 3: Treatment of Effluents from informal Dyeing Industries	UP PCB & Jal Nigam (Urban)	690	Namami Gange	1
		Intervention 4: Construction of 25 kLd co-treatment plant at Pakka Pokhara for Mirzapur Zone	NPP	290	AMRUT 2.0, SUDA	1
		Intervention 5: Removal of Legacy and Solid-Waste Hotspots along the Ganga Riverbank and Ghats	NPP	130	AMRUT 2.0, SBM 2.0 & SUDA	1-2
3	To rejuvenate waterbodies and wetlands in the city	Intervention 6: To create water body Database at city level	NPP, SDA, UP PCB	35	Municipal Budget, UP Urban Development funds, 15th Finance Commission - Tied Grants (Water & Sanitation)	1 - 2
		Intervention 7: Rejuvenation of Shuklaha Talab	NPP	255.16	AMRUT 2.0, Component specific PPP, CSR	0.75 - 1
4	Enhance riparian Buffer along the riverbank	Intervention 8: Restoration of Low-density vegetation	Forest Department and Irrigation Department	2150	CAMPA and Namami Gange	1

Sl. No.	URMP Objective	Intervention	Responsible Agency	Block Cost (in lakhs)	Potential Financing Sources	Timeline (in Years)
5	To Reuse treated used water	Intervention 9: Options for reuse of treated used water				
		Option A	Jal Nigam (Urban)	6800	Adani Power limited	1-2
		Option B	Jal Nigam and Forest dept	5000	SUDA, CAMPA & AMRUT	1-2
		Intervention 10: Reuse of treated water from 7 MLD STP at Vindhyachal	Nagar Palika Parishad, Mirzapur	21	SUDA, Municipal Budget	0.1
7	To develop eco-friendly riverfront projects	Intervention 11: Provision of Essential Public Amenities	NPP	48.39	NMCG, Ministry of Tourism	1.25 – 1.5
9	To inculcate river-sensitive behaviour among citizens	Intervention 12: River Awareness Campaign – “Meri Nadi, Mera Shahar”	NPP	18.42	IEC Budget: NPP & Namami Gange, CSR Funds	0.2-0.4
		Intervention 13: Distribution of Biodegradable Kits at sacred Ghats in Mirzapur City	NPP	54.70	Municipal sanitation budget, CSR (local businesses, flower vendors), Temple trusts & SHG cost-sharing, IEC support (Namami Gange)	0.2-0.4
		Intervention 14: River Storytelling Corners for community-led narratives and cultural connection	NPP	9.27	SBM(U), NMCG, CSR Religious Boards	5-7
		Intervention 15: Behavioural Nudges through Smart Signages at Sacred Sites in Mirzapur city	NPP	12.10	municipal IEC Budget, CSR funds	–1-5
		Intervention 16: Faith-Based Engagement – Temple & Mosque Drives	River Sabha Committees	4.72	municipal IEC Budget, CSR funds, RWA	1-2
		Intervention 17: Formation of River Sabha Committees at City-Level	NPP	22.47	Municipal budget, CSR contributions.	3 - 5
10	To engage citizens in river	Intervention 17: Formation of River Sabha Committees at City-Level	NPP	22.47	Municipal budget, CSR contributions.	3 - 5

Sl. No.	URMP Objective	Intervention	Responsible Agency	Block Cost (in lakhs)	Potential Financing Sources	Timeline (in Years)
	management activities	Intervention 18: River Festival – “Mirzapur Jal Mahotsav”	NPP	148.36	Municipal budget, CSR contributions,	3-5
		Intervention 19: Youth Internship Program – “River Warriors”	Education department	38	Education Department, Municipal IEC Budget, CSR contributions from schools and coaching institutes and NGO	1 -2
		Intervention 20: Community Composting & Waste Segregation Workshops	NPP	12.22	Municipal IEC budget	1 - 2
		Intervention 21: River Clean-Up Drives – “Nadi Mitra Abhiyan”	District Ganga Committee, Jal Nigam and Local Volunteers	6.80	Municipal IEC budget allocation under SBM(U), CSR funds	1 - 2
Total				1226.9		

The total investment requirement for the 21 interventions is estimated at ₹1,227 Lakhs, with funding proposed from Namami Gange, AMRUT 2.0, municipal budgets, CSR contributions, and other state/national schemes. The proposed interventions listed under Objective 2 and 7 have been identified as priority interventions required to be undertaken at the city and state level.

1. INTRODUCTION

The National Institute of Urban Affairs (NIUA) and the National Mission for Clean Ganga (NMCG) have collaborated to promote river-sensitive urban development across cities in the Ganga basin and other Indian river basins. This collaboration aims to harness the role of the cities to rejuvenate and restore river health. As part of this initiative, two major support systems have been developed: Urban River Management Plan (URMP) Framework and Guidelines for creating River-Sensitive Master Plans.

The framework was prepared to help cities improve and sustain river stretches within their boundaries through holistic, ecosystem-based interventions. It underscores that healthy river are essential for urban livability and productivity and its vision is organized around three elements environmental, economic and social, supported by ten objectives. These objectives are translated into city-specific projects, each tied to funding sources and institutional mechanisms for effective implementation.



Figure 1-1: Ten Objectives of URMP

A total of sixty URMPs are planned in two phases with 25 in Phase I and 35 in Phase II, including five cities in Uttar Pradesh in the first phase. Funded by the World Bank under Namami Gange Mission II, this initiative is expected to guide Urban Local Bodies (ULBs) in addressing challenges such as drying rivers, poor waste management, loss of green cover, floodplain encroachment and industrial pollution through systematic, city-level planning. The three tiers of governance and monitoring committees at the center, state and city level is depicted in Figure 1-2.

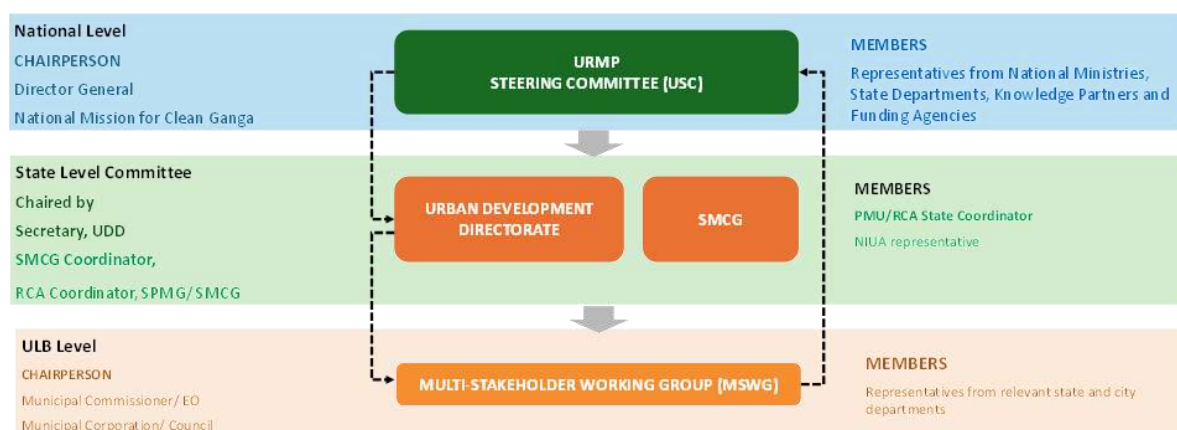


Figure 1-2: National, State & City Engagement for URMP Preparation

1.1 PROCESS FOR PREPARATION OF URMP MIRZAPUR

The preparation of an URMP follows a systematic approach as per NIUA's URMP Components and Guidance Note 2020 and strategic guidelines for making River Sensitive Master Plans 2021 to ensure effective river conservation, sustainable management and stakeholder collaboration. The process involves multiple stages, each contributing to a comprehensive and actionable plan as depicted below.

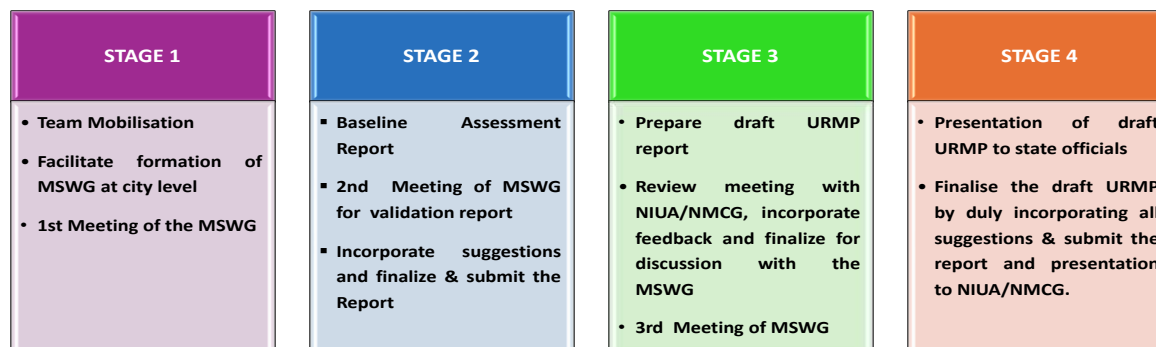


Figure 1-3: Process for preparation of URMP

1.2 STATUS OF WORK AND CONTENTS OF THE PRESENT DELIVERABLE

Tasks one to three as listed in Figure 1-3, have been completed and findings are elaborated in the present deliverable of Draft URMP Report. The detailed content of the report includes the following:

- ▶ Key points discussed during URMP State level Steering Committee Workshop for Uttar Pradesh held on 3rd May 2025 at Lucknow;
- ▶ Discussions during 1st Multistakeholder Working Group (MSWG) meeting at Mirzapur on 11th July 2025;
- ▶ Discussions during 2nd Multistakeholder Working Group (MSWG) meeting at Mirzapur on 30th April 2026,
- ▶ Analysis of the field visit, primary and secondary data available in the public domain and collected from various stakeholder departments post the MSWG meeting.

1.2.1 URMP State level Workshop

A State-level URMP Committee, chaired by Secretary, Urban Development Department (UDD), Government of Uttar Pradesh has been constituted to oversee URMP process. A State level Workshop was held on 3rd May 2025 at Lucknow chaired by Deputy Director General, NMCG and attended by Director Local Bodies & Secretary, Urban Development Department (UDD) UP, Director, NMCG, Urban Lead, NMCG, Technical Advisor, State Mission for Clean Ganga (SMCG), UP and representatives from NMCG, SMCG, State UDD, Directorate of ULBs, city representatives ULBs and NIUA (Annexure 1)

The meeting presented the guiding principles, objectives and work plan for preparing URMPs in five cities of the state. Commissioners, Executive Officers and senior officials shared the current status, challenges and future plans for river management in their cities.



Picture 1-1: State Level Workshop for Uttar Pradesh

1.2.2 Multistakeholder Working Group

To guide the development of city, a Multistakeholder Working Group (MSWG) was formed comprising of 13 representatives from Nagar Palika Parishad Mirzapur (NPP), SMCG, Tourism department, Forest Department, Uttar Pradesh Jal Nigam (Urban), Irrigation Department, UP Pollution Control Board, Ground Water Board, Development Authority, District Industries Centre and District Agriculture department (Annexure 2). Post the state level workshop, the first MSWG meeting was held on 11th July 2025 under the chairmanship of the Hon'ble District Magistrate, Mirzapur, to notify the MSWG for the city and the nodal officer for URMP (Refer- Picture 1-2).



Picture 1-2: 1st MSWG held on 11th July 2025 in Mirzapur

The second MSWG meeting for finalization of the baseline report was held on 30th April 2026 (Annexure 3) under the chairpersonship of District Magistrate, Mirzapur (Refer Picture 1-3).



Picture 1-3: 2nd MSWG held on 30th April 2026 at Mirzapur

1.2.3 Draft URMP Report

The Draft URMP report includes tangible interventions for river conservation and management for each of the ten URMP objectives. Multiple meetings and consultations with all concerned agencies along with site visits were conducted to assess the ground situation and identify opportunities for future interventions (Refer Picture 1-4). Based on the gaps and prioritized issues identified in the Baseline Assessment Report, this document outlines interventions and recommended actions. Each intervention is elaborated in detail, including the project rationale, conceptual framework, key components, broad cost estimates, funding source and the designated implementing agency. The methodology adopted for preparation of URMP has been shown in Figure 1-4.



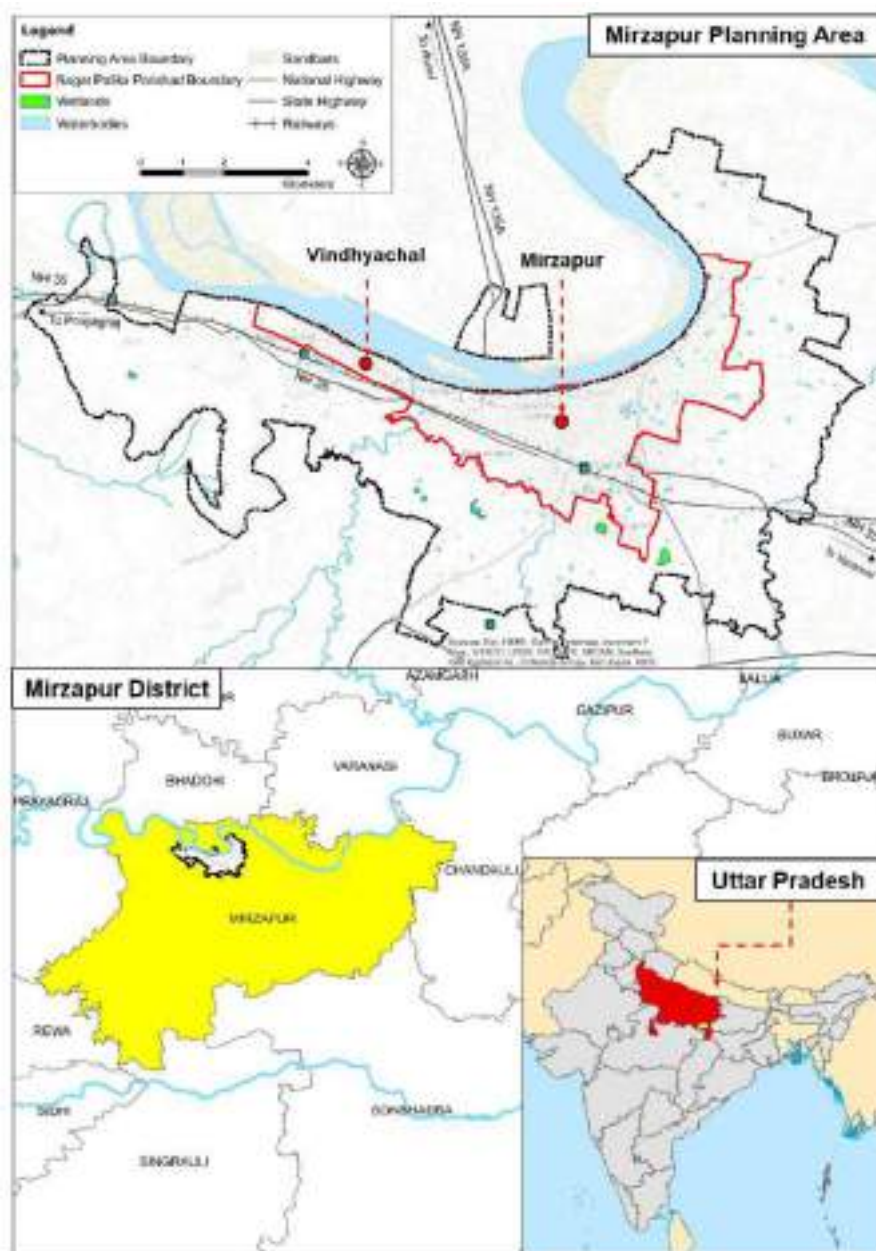
Figure 1-4: Methodology for URMP



Picture 1-4: Consultation and Site Visits

2. CITY PROFILE

Mirzapur is a Nagar Palika Parishad (NPP) located in the northern part of Mirzapur district, Uttar Pradesh. The city is situated along the southern bank of the River Ganga. Mirzapur enjoys strong regional connectivity through National Highways 135, 135A and 35, linking it to major centres such as Varanasi (63 km), Prayagraj (87 km), Rewa, Jaunpur, Ramnagar and Chunar. State Highways further integrate the city with surrounding districts and the wider eastern Uttar Pradesh region. Though New Delhi lies about 775 km away and Lucknow about 286 km, the city maintains smooth connectivity to these capitals through highway routes and the Lucknow–Delhi railway corridor. Rail connectivity is supported by two stations: Mirzapur Railway Station, the primary railhead with higher train frequency and Vindhyachal Railway Station, located on the busy Delhi–Howrah and Mumbai–Howrah corridors, offering direct access for pilgrims and residents. Air travel is facilitated by Lal Bahadur Shastri International Airport, Varanasi (63 km), serving both domestic and international routes.



Map 2-1: Contextual Setting of Mirzapur City

2.1 CITY ADMINISTRATIVE BOUNDARIES

The Mirzapur Planning Area covers approximately 114.85 sq km (as per Mirzapur- Vindhyachal masterplan, 2031) comprises of Mirzapur–Vindhyachal Municipal Areas, two Census Towns and 68 surrounding urbanizable revenue villages (Refer Map 2-2). The planning area is managed by Mirzapur-Vindhyachal Development authority responsible for preparing the Master Plan, implementing urban planning policies, regulating land use and activities and overseeing infrastructure development.

Mirzapur functions as a Nagar Palika Parishad, serving as the primary urban local body for civic governance and service delivery. It currently administers 38 wards spread over an area of 38.85 sq. km, covering the city's core and its immediate periphery. The Nagar Palika Parishad is responsible for water supply, sanitation, solid waste management, street lighting, internal road maintenance and other municipal services.

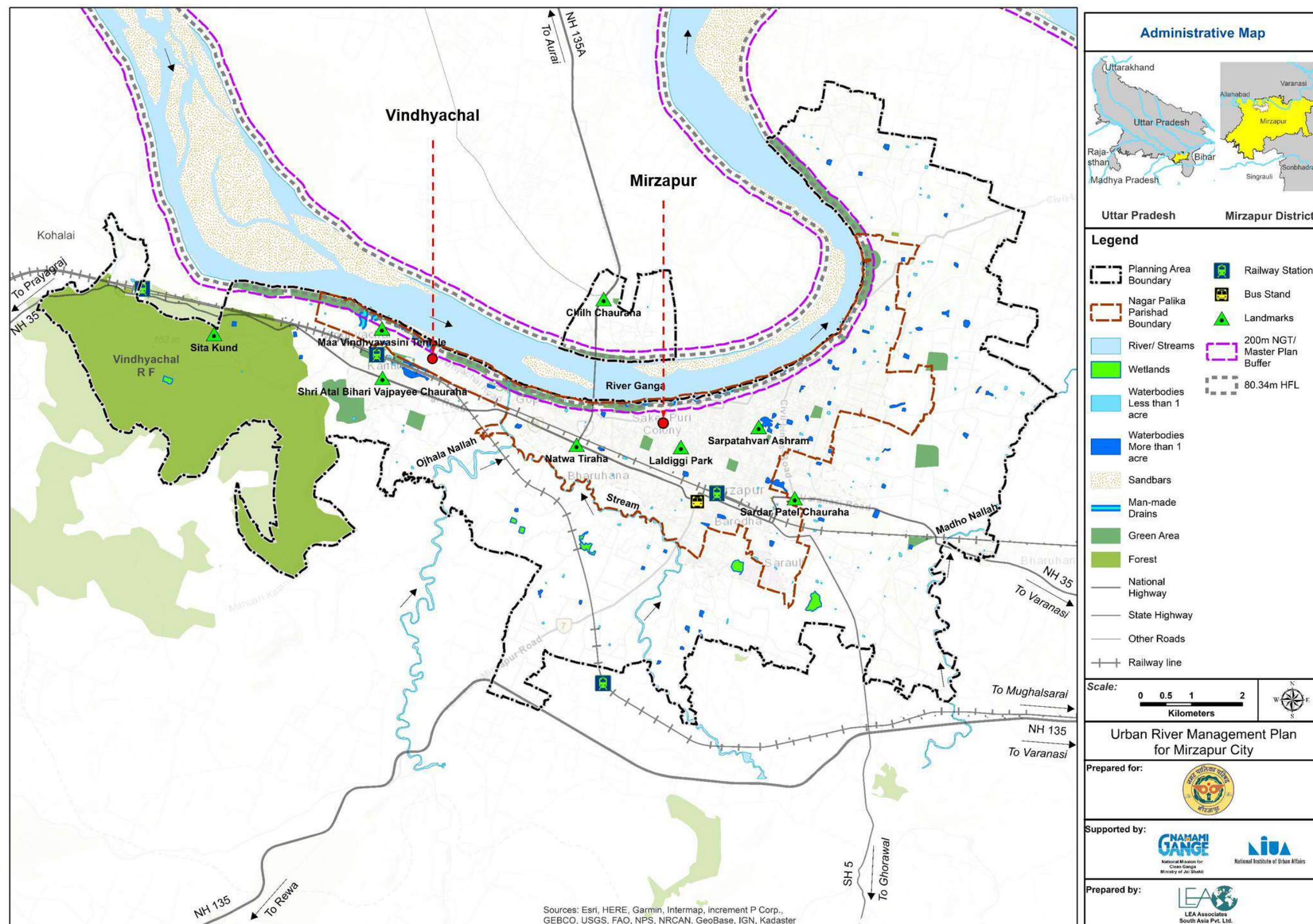
2.2 DEMOGRAPHY

As per Census 2011, total population of NPP, Mirzapur was 2.3 lakh. The population of the planning area was 3.5 Lakh with approximately 1 lakh persons (28%) residing beyond the corporation limits. The ward wise population of Mirzapur city is at Annexure 4. As per the consultant analysis, the population of the NPP is expected to grow up to 4.2 lakhs in 2051 (Refer Table 2-1).

Table 2-1: Population Projection of NPP, Mirzapur

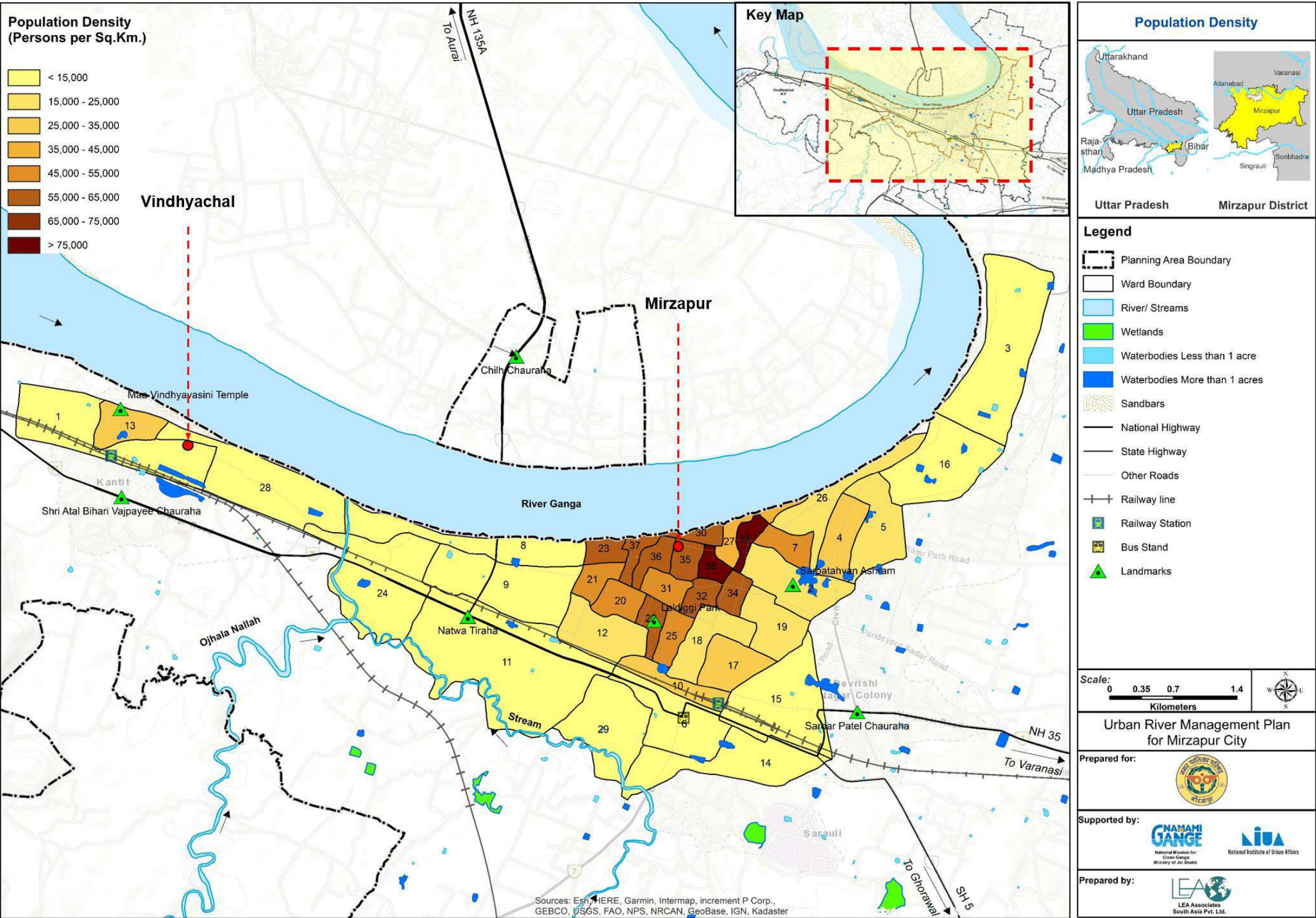
Year	Arithmetic Progression	Geometric Progression	Incremental Progress
2031	2,74,000	3,15,000	2,83,000
2041	2,94,000	3,65,000	3,15,000
2051	3,14,000	4,20,000	3,49,000

Source: Consultant Analysis



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) HFL: National Database for Emergency Management; 4) 200m Buffer: NGT; 5)Transport Network: OSM

Map 2-2: Administrative Map of Mirzapur



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Population Density: Mirzapur Nagar Palika Parishad; 3)Transport Network: OSM

Map 2-3: Population Density Map of Mirzapur

2.3 PHYSIOGRAPHY

2.3.1 Topography

Mirzapur is situated along the northern edge of the Vindhya Range. The terrain exhibits a sharp physiographic contrast between fertile alluvial plains of Ganga valley in north and the rugged, rocky uplands of Vindhyachal plateau in south. The average elevation of the city is 80 meters above sea level gradually rising towards the Vindhya hills.

2.3.2 Geomorphological Characteristic

The geomorphology of the Mirzapur planning area is primarily characterized by a graduation from active and older floodplains in the northern belt to structurally controlled plateau formations in the west and south. From a mineral resource perspective, Mirzapur retains construction-grade materials such as stone boulders, pattiya, morrum and sand, available in commercially viable quantities. These materials are actively extracted and transported to other districts and regions, forming an important component of the local construction-material supply chain.

The northern alluvial belt of Mirzapur consists of deep, rich and highly fertile soils, which support large-scale cultivation of food grains and other crops. In contrast, the southern part is characterized by hard, red soil underlain by hard rock formations. These soils have low water retention capacity, dry up quickly after rainfall and are susceptible to crop damage during floods, making them less suitable for intensive agriculture.

2.4 URBAN GROWTH TRENDS

The spatial analysis of built-up expansion between April 1995 and April 2025 is based on the Global Human Settlement Layer (GHSL) and the Mirzapur–Vindhyachal Draft Master Plan 2031. It reveals a transformation from a relatively compact river-oriented urban form to a corridor-led, poly-nodal urban structure. In 1995, the built-up footprint of Mirzapur–Vindhyachal was largely confined along the southern bank of River Ganga, with dense and continuous development concentrated around the commercial, administrative and religious precincts. The peripheral areas towards the east, west and south were predominantly open or semi-rural in character, indicating limited outward urban influence at that time.

By 2025, the built-up area exhibits pronounced linear and radial expansion, strongly aligned with regional transport corridors.

According to GHSL and Draft Master Plan 2031 urban expansion is constrained by environmental barriers:

- Ganga River along the northern boundary.
- The Vindhyachal Hills in the south-western part of the urban area act as a significant topographical barrier, further limiting outward urban growth.

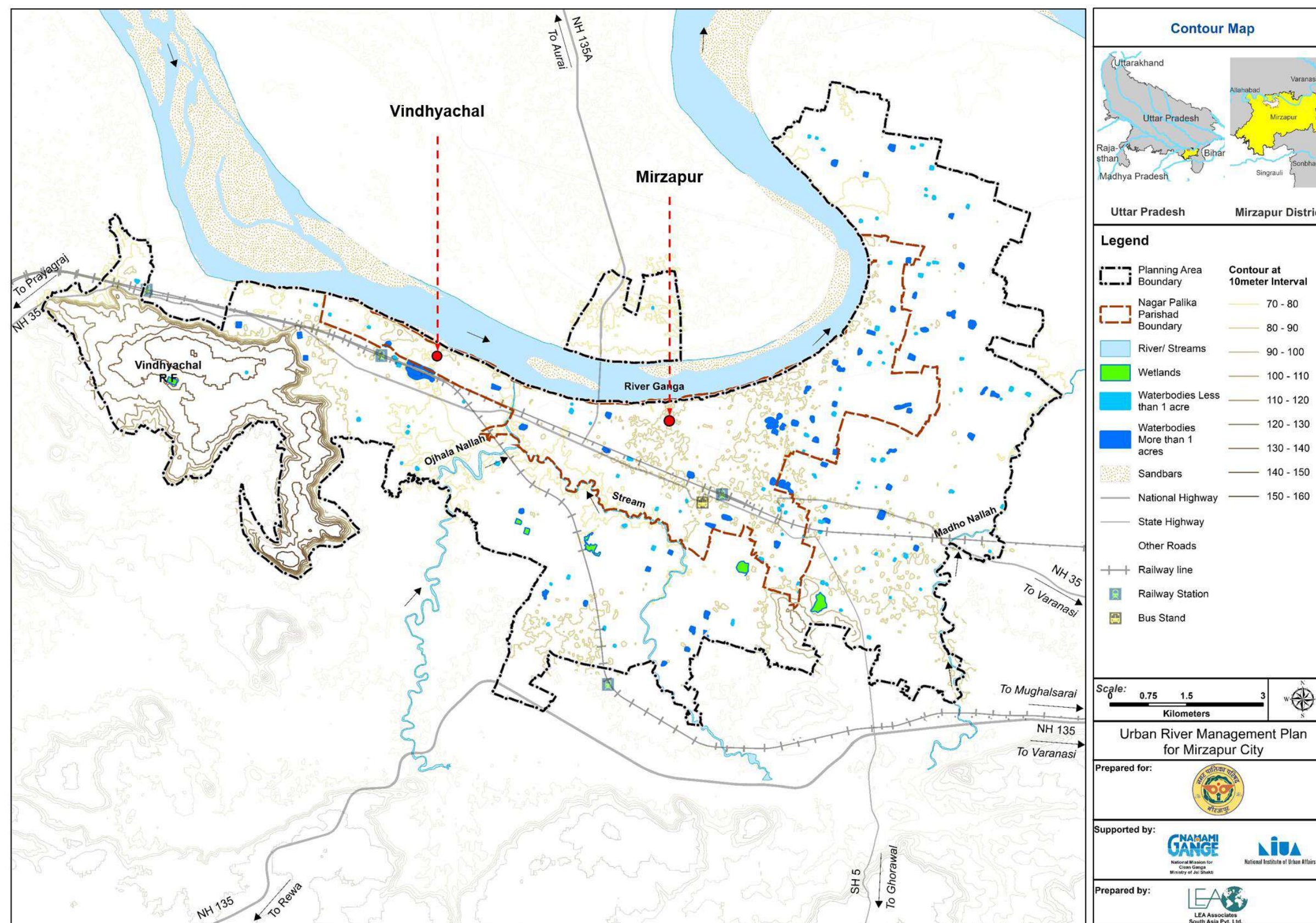
Given the physical constraints, the future urban expansion potential for Mirzapur as mentioned in the Draft Master Plan 2031 is concentrated along specific mobility corridors. They are:

- Spatial change detection highlights rapid expansion along the Mirzapur–Chunar–Varanasi corridor, driven by converging traffic from Obra, Chopan, Dala, Churk, Robertsganj and Singrauli, fueling ribbon development. Accelerated built-up growth is also evident along the Mirzapur–Jabalpur Road, supported by major institutional and urban establishments.
- "Rapid outward growth along the Mirzapur–Robertsganj Road is driven by specialized industrial and service activities such as the Chaurasia Rubber Factory, ice plants and stone/peel units catalyzing industrial-led urban expansion. The bypass road connecting

Mirzapur Tehsil, Mirzapur–Chunar Road and the Mirzapur Roadways Bus Station, passing near Binnani Degree College, has emerged as a high-growth urban pocket, marked by fast-paced residential and commercial development.

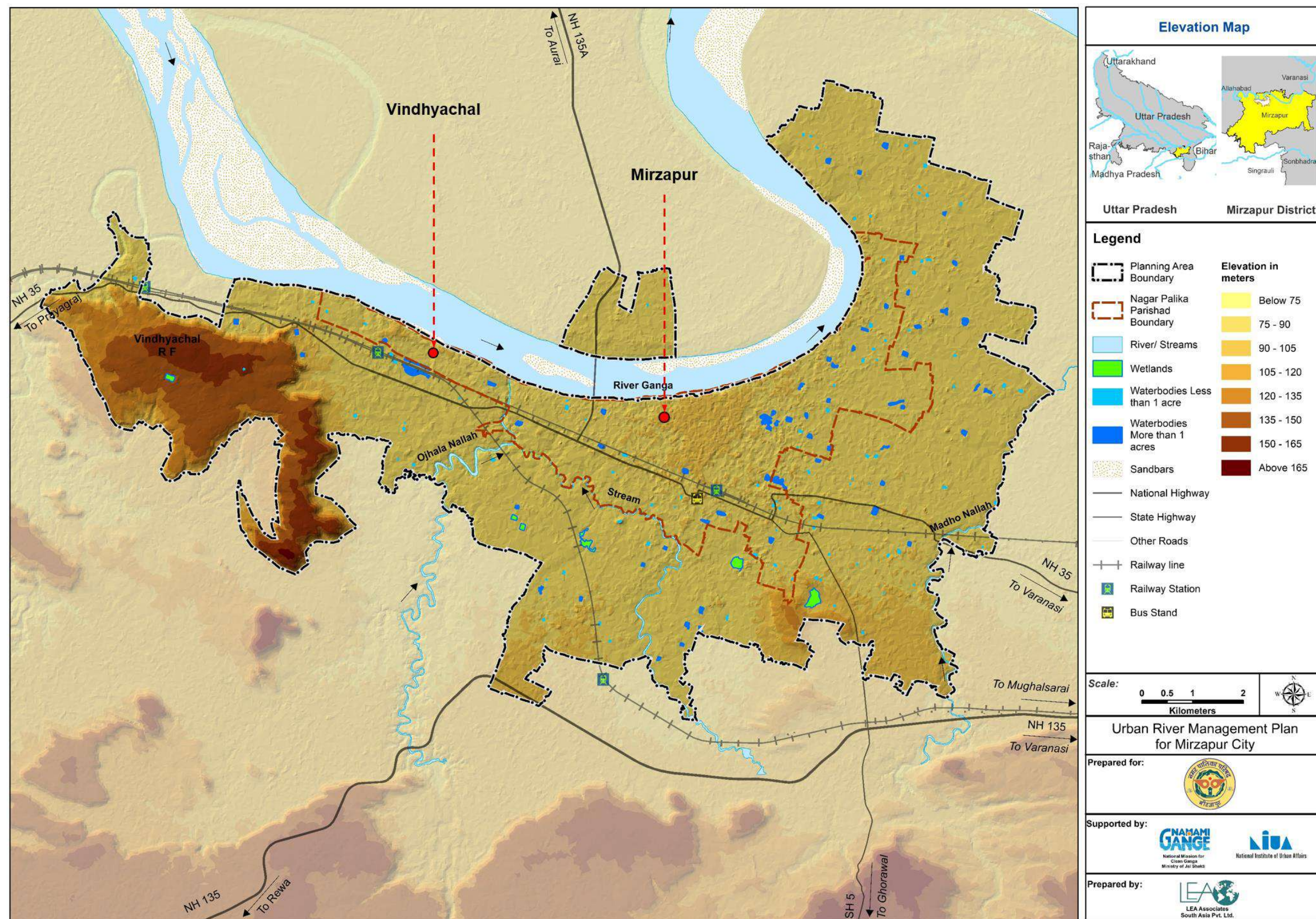
- The Mirzapur–Bhatauli Ghat Road, which serves as one of the principal internal spines of the Mirzapur–Vindhyachal urban area, is witnessing very high development intensity.

The completion of the Mirzapur–Prayagraj Road over the Ganga, providing direct connectivity to National Highway-7, has strengthened Mirzapur’s linkage with Varanasi, Jaunpur, Bhadohi, Aurai and Gopiganj, particularly supporting the carpet industry and allied trade. Vindhyachal’s intensifying growth is reshaping the Mirzapur–Vindhyachal urban system. Road networks aligned with Maa Vindhyavasini Devi Temple and related religious hubs are driving concentrated commercial, hospitality and residential development along pilgrimage corridors



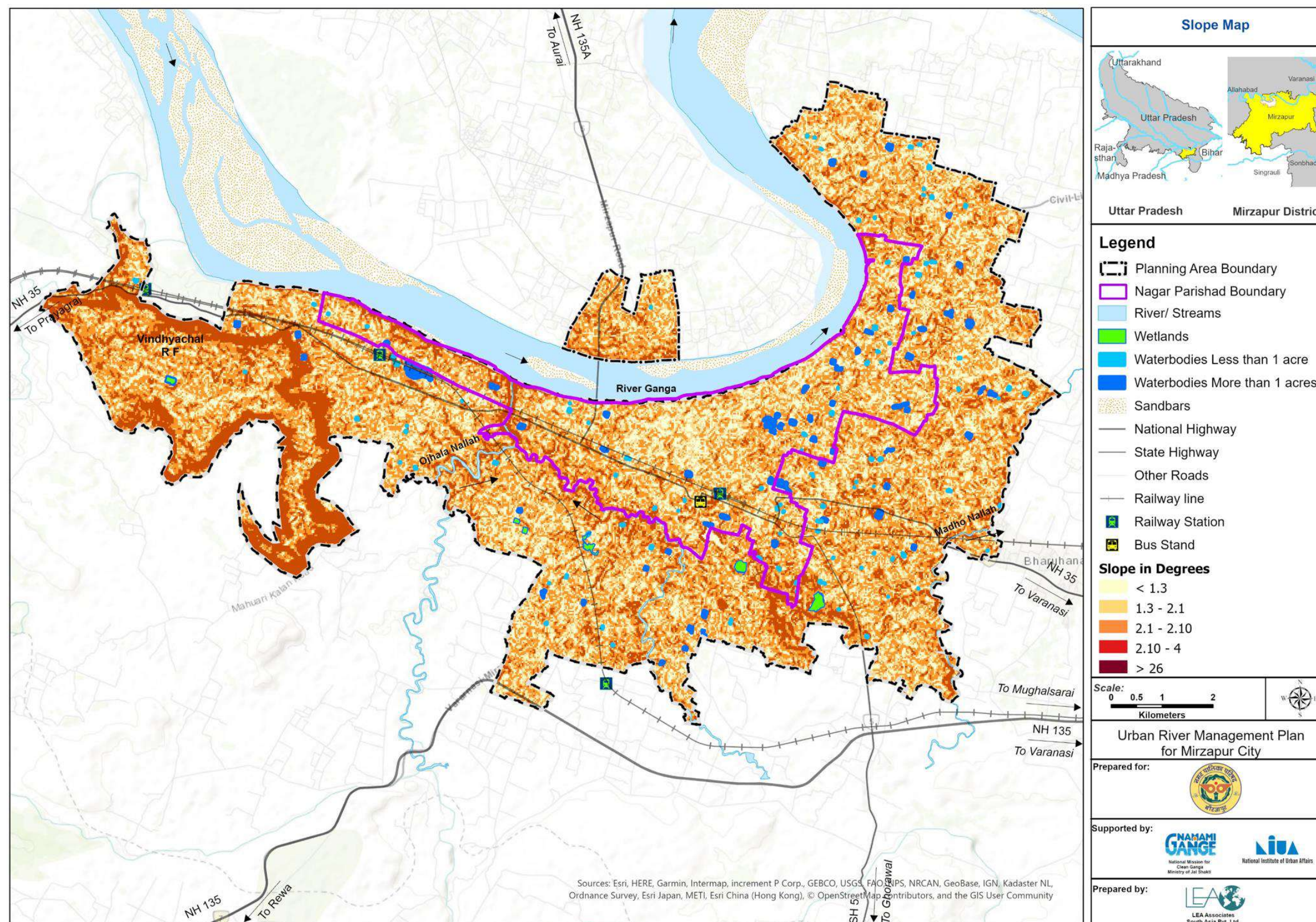
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) DEM; 4) Transport Network: OSM; 5) Consultant Analysis

Map 2-4: Contour map of Mirzapur



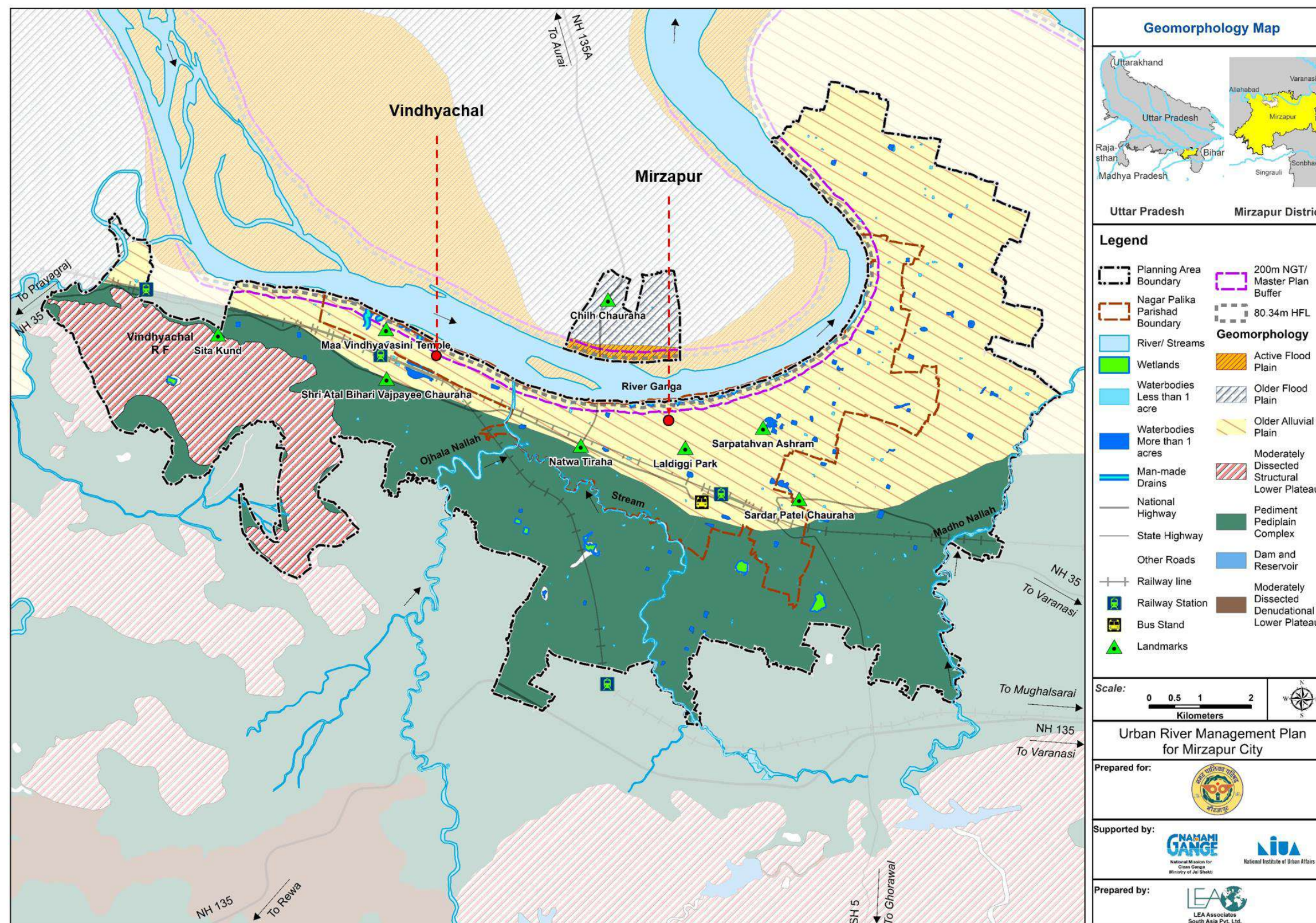
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) DEM; 4) Transport Network: OSM; 5) Consultant Analysis

Map 2-5: Elevation of Mirzapur



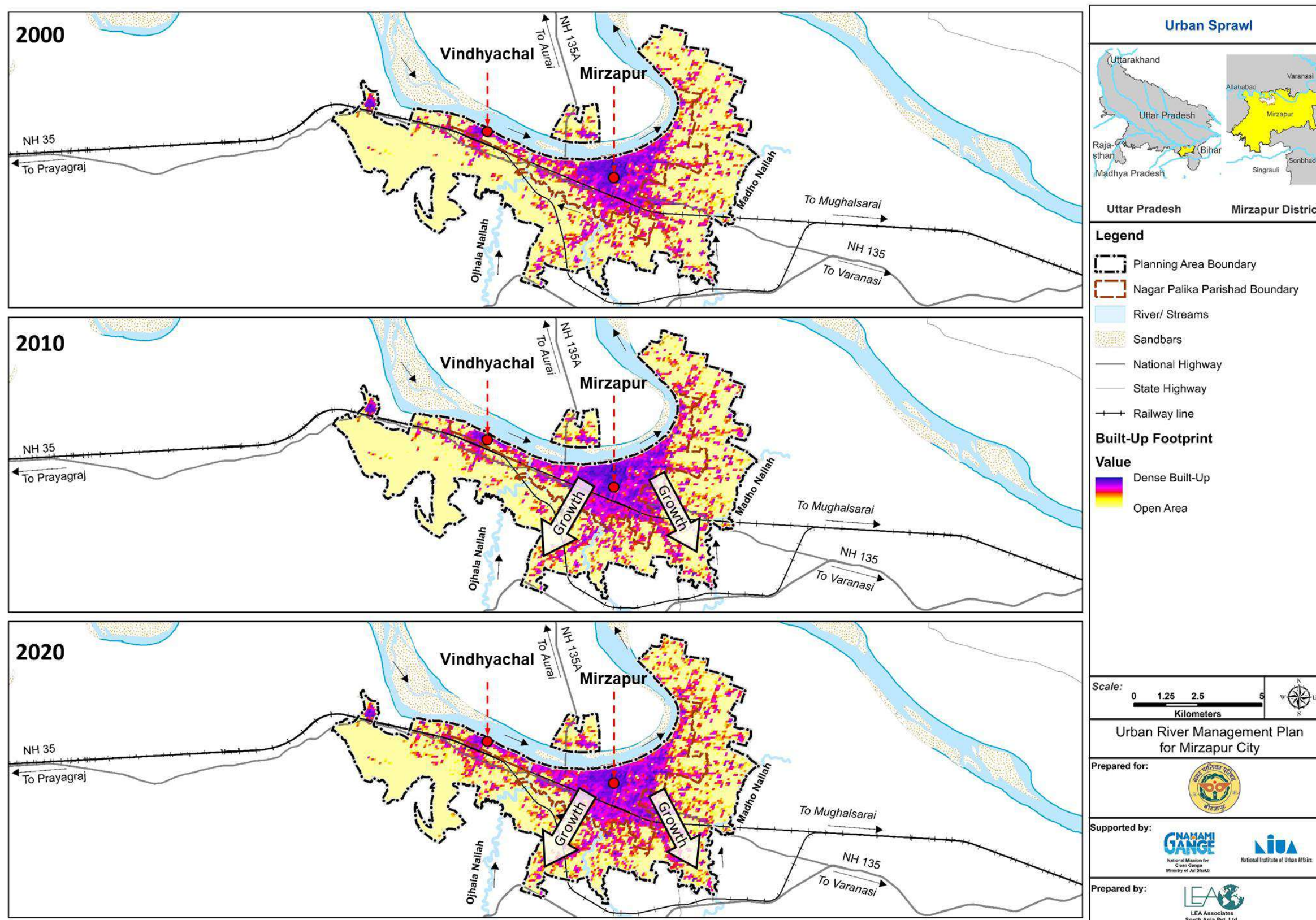
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) DEM; 4) Transport Network: OSM; 5) Consultant Analysis

Map 2-6: Slope map of Mirzapur



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Geomorphology Data: Bhukosh; 4) HFL: National Database for Emergency Management; 5) 200m Buffer: NGT; 6) Transport Network: OSM

Map 2-7: Geomorphology map of Mirzapur



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Built Up: GHSL Data; 4) Transport Network: OSM; 5) Consultant Analysis

Map 2-8: Urban sprawl in Mirzapur

2.5 HISTORY AND CULTURAL PROFILE

During the Mughal period, the region formed part of the Benares province. Under Emperor Akbar, the area fell within an important administrative and territorial zone linking Allahabad (Prayagraj), Banaras (Varanasi), Chunar and Rohtas. In 1775, sovereignty over the region was ceded by the Nawab Wazir of Oudh to the East India Company, though it remained under the zamindari of the Raja of Benares until 1794, when Raja Mahip Narayan Singh surrendered authority to the British. Thereafter, district administration largely focused on revenue and fiscal settlement, marking a significant shift in governance.

Mirzapur emerged as a major trading centre in the early nineteenth century, benefiting from its strategic location on the Ganga and its connectivity through the Great Deccan Road to central India. Cotton, silk and other commodities were traded extensively, linking Mirzapur with regions such as Rewa and beyond. British administrative influence shaped the city's urban form, with several localities and markets named after British officials and the Nagar Palika Parishad building standing as an example of colonial engineering.

Culturally and religiously, Mirzapur holds immense significance. The Vindhyachal temple, one of the most revered Shakti Peeths, attracts lakhs of pilgrims annually and is deeply embedded in Hindu mythology. Ancient temples such as the Shiva temple at Larwak, preserved by the Archaeological Survey of India, further highlight the region's architectural and spiritual heritage.

There are 12 major festivals and fairs of which 4 are associated with rivers. The list of these festivals and fairs is listed in Table 2-2 below.

Table 2-2: Festivals and events in Mirzapur

Festival / Fair	Month	Location	Cultural Significance
A. Festivals			
Deep Mahotsav	Kartik Amavasya (Oct–Nov)	Ganga Ghats	Illumination of the riverbanks with lamps; evening celebrations and fireworks
Kajri Mahotsav	Monsoon season (Bhadrapada)	Citywide	Commemorates Kajli, daughter of King Kant Naresh; rooted in regional folk music tradition
Jhula Utsav	Shravan (Monsoon)	Dwarkadhish Temple, Kunj Bhawan, Ganga–Yamuna–Saraswati Temple	Five-day festival with decorated swings and illuminated temples
Ganga Dussehra	Jyeshtha Dashami (May–June)	Pakka Ghat, Mirzapur	Ritual bathing in the Ganga; grand cultural programme and Ganga Aarti
B. Fairs			
Lohindi Fair	Monsoon	Near old Hanuman Temple (2 km from city)	Known for artistic tattoo stalls; local folk fair
Ojhala Fair	Bhadrapada Shukla Dwadashi & Kajri (Karna Pratipada)	Ojhala River & Baman Bhagwan Temple	Linked to mythological legends; legal betting; sacred healing pond
Kanwar (Kin Vi) Mela	Rajab (Islamic calendar)	Dargah of Hazrat Khwaja Ismail Takhishti, near Vindhyachal Railway Station	Symbol of religious harmony; associated with Sufi traditions
Vindhyachal Fair	Vasantik & Sharadiya Navratri	Vindhyachal Temple	Major national-level pilgrimage to Maa Vindhyavatsini
Ashtabhuja Mandir Fair	Last Tuesday of Shravan	Ashtabhuja Mandir	Folk religious gathering with large local participation
Sheela Devi Temple Fair	Aadh & Shravan (Mondays)	Sheela Devi Mandir, Vijaypur Basti	Weekly devotional gatherings

Festival / Fair	Month	Location	Cultural Significance
Garbara Devi Fair	First Monday of Agahan	Garbara Devi Temple, MP Border	Large regional religious fair
Baman Dwadashi	Bhadrapada Shuklaha Paksha (12th day)	Baman Bhagwan Temple, near Ojhala Bridge	Celebration linked to Vamana avatar of Lord Vishnu

Source: Consultation with the Tourism department, Mirzapur, 2025 and Draft Master Plan Report Mirzapur 2031



Deep mahotsav



Kajari festival



Vindhyavasini Temple



Ashtabhuja Temple

Picture 2-1: Cultural Profile of Mirzapur

2.6 TOURISM PROFILE

Mirzapur is a prominent religious and cultural destination, attracting tourists from across India and abroad, particularly to Vindhyachal, one of the most revered Shakti Peeths. The city witnesses large inflows during festivals such as Ganga Dussehra, Sharadiya Navratri and other major occasions, when ghats and temples become focal points of devotion and celebration. Key attractions include the Maa Vindhyavatsani Devi Temple, Trikon Yatra circuit, scenic waterfalls, Chunar Fort (locally referred to as Chunar Takla) and surrounding lakes. As per Master Plan 2031, international tourist remains relatively low compared to Varanasi. The Maa Vindhyavatsani Devi Temple has also gained prominence due to its association with the Kashi Vishwanath Corridor and the planned development of the Vindhya Corridor (Vindhyadham) is expected to significantly boost tourism potential. Together, these cultural, religious and natural assets position Mirzapur as a growing hub for pilgrimage, heritage and eco-tourism.

2.7 SOCIO-ECONOMIC PROFILE

2.7.1 Economic Activities along the river

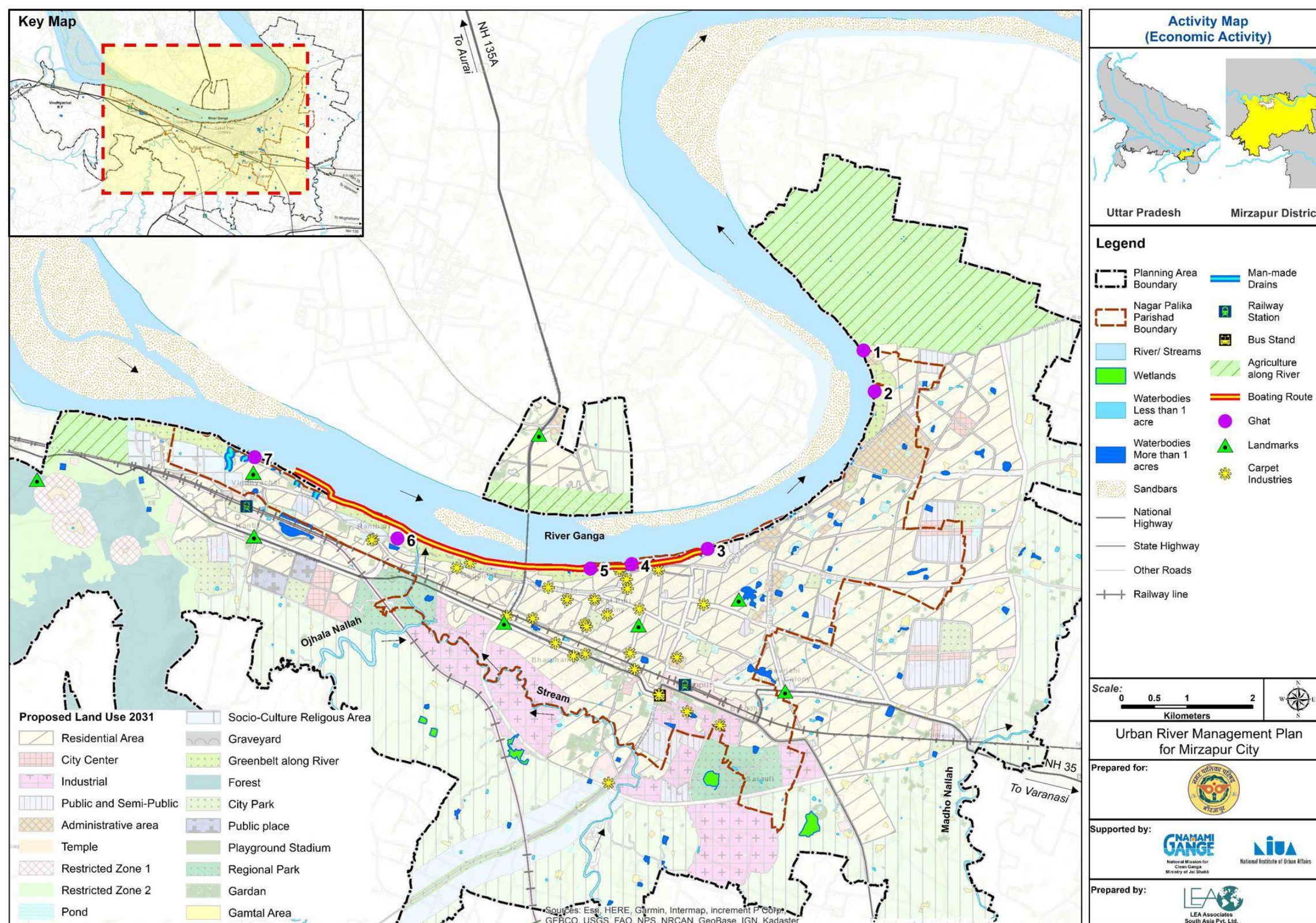
- 1. Water Transportation:** While its role in large-scale navigation has declined, the river continues to support short-distance boating and daily movement across the city. Presently, boats operate regularly from key points such as Rasulpur, Vindhyashini Ghat, Ganjia, Chhotti Basahi,

Nar Ghat, Baria Ghat, Hanuman Ghat, Jamunahiya, Bharuhana and the stretch near the Bhairo Baba Temple, providing connectivity for residents and pilgrims alike.



Picture 2-2: Boating activities along the ghats

- 2. Agriculture:** Agricultural activities along the Ganga floodplain in Mirzapur, though limited in extent, continue to support local livelihoods. The fertile alluvial soils along the riverbanks enable the cultivation of crops such as wheat, paddy, pulse and oilseeds. These practices are primarily observed in pockets such as Rasulpur and Gopalpur on the Northern side and Visunderpur, Bharuhana and Piprad and on the Southern side of the city.
- 3. Informal shops/ kisoks, street vendors:** At Vindhyachal Dham Ghat, informal kiosks and street vendors are present directly along the riverfront, serving pilgrims and visitors with offerings, snacks and refreshments. On other ghats such as Fataha, Pakka Ghat and Nar Ghat, however, the riverfront steps are more constrained, leaving little space for vendors to set up directly on the ghat. In these cases, kiosks and stalls are located nearby, lining the approach roads and adjoining lanes, ensuring accessibility.



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4) Transport Network: OSM

Map 2-9: Economic Activities in Mirzapur

2.7.2 Religious activities along the rivers

Religious activities along the riverfront in Mirzapur are deeply woven into the city's spiritual and cultural identity. The ghats serve as sacred spaces where pilgrims and local communities gather for ritual bathing, daily worship and seasonal festivals. At Vindhyachal Dham Ghat, thousands of devotees perform ceremonial baths and participate in the evening Ganga Aarti. Pakka Ghat and Nar Ghat host vibrant fairs and festivals such as Kajri, Makar Sankranti and Ganga Dussehra, drawing large crowds and reinforcing the river's role as a spiritual lifeline. Ghats like Hanuman Ghat, Baba Ghat and Baria Ghat are close to temples, where devotees gather for puja, Diwali celebrations and evening congregations. Rituals such as idol immersion, aarti and festive illuminations transform the riverfront into a living corridor of faith, memory and community, making the Ganga not just a natural resource but the spiritual bloodstream of Mirzapur.

2.7.3 IEC and Social Engagement (Annual calendar, frequency, target audience)

Creating a river-sensitive society requires behavioral change, active participation and awareness across all sections of citizens. The focus is on integrating sustainable practices into daily life, ensuring that rivers are seen as community assets that need protection.

1. IEC Activities of District Ganga Committee, under Namami Gange:

Under the initiative of Namami Gange, Mirzapur's citizens are actively engaged in awareness campaigns at ghats, schools and colleges through drawing, rangoli, debates and expert lectures, complemented by community-led cultural events like Deepdan and Ganga Aarti. The Ganga Cycle Run held on 26th October 2023 awarded prizes to the top six participants, while the 25th Nainagarh Mahotsav in 2024 marked a milestone in celebrating traditions, heritage, art and culture. Organized by the District Ganga Committee, the Mahotsav emphasized river rejuvenation, plantation drives, Ganga Gram involvement, biodiversity conservation and revival of small rivers and wetlands, with a unique youth-led rap performance on Maa Ganga creatively engaging younger audiences.



Picture 2-3: IEC activities conducted under Namami Gange

Source: District Ganga Committee Mirzapur

2. IEC Activities of Nagar Palika Parishad, Mirzapur:

The Nagar Palika Parishad implements a range of Information, Education & Communication (IEC) and citizen-awareness drives under the Swachh Bharat Mission (SBM) and Azadi Ka Amrit Mahotsav (AKAM) framework. These initiatives promote source segregation, sanitation and safe waste handling through public gatherings, felicitation events and digital outreach.

Awareness and IEC Activities (2024)

- **Planning and Implementation:** All awareness and IEC programs were coordinated by Mirzapur cum Vindhyachal Nagar Palika Parishad under the Swachh Bharat Mission framework, in collaboration with Ward-level sanitation teams, NGO and market associations

- **AKAM Programs:** A series of 10 AKAM-themed activities focusing on waste segregation and public toilet hygiene were conducted between September 2021 to November 2022. These activities were conducted at Auditorium NPP, Sankatmochan Ward, Sankatmochan Ward, Ghurahupatti, Trimohani, Fataha, Danghar, Anagarh Ward, Ghantaghar Ward, Basanahi Bazar Ward, Trimohani Ward, Bathua Ward, Station Ward, Purani Dashmi Ward, Ghurahupatti Ward, Trimohani Ward, Mahuwariya Ward, Danghar Ward, Uttari Sabari Ward, Sankatmochan Ward, Pradhan Karyalay, Pt. Deen Dayal Chauraha Laldiggi Mirzapur & Sardar Patel Chauraha, Bharuhana Mirzapur. Approximately 800 sanitation workers were involved in the program. These programs are focused on solid waste management.
- **Zero-Waste Events:** 5 zero-waste events were organized in 2023 and 2024. 3000 sanitation workers participated in the drive.
- **Single Use Plastic (SUP) Ban Campaign:** 6 awareness meetings were conducted between 2023 and 2024 with market associations, traders and shopkeepers.
- **Other IEC activities:** 62 activities were held, in the last 3 years. Mirzapur DM Office Trimohani, Bhatawa ki Pokhari, Laldiggi, Sadar Malviya Nagar Kasarahatti, GIC ground, City club, Nar ghat, Fataha ghat, etc. These activities include events such as street cleanliness drives, Swachh city campaign, river cleanliness drives, etc.



Picture 2-4: IEC activities by Nagar Palika Parishad, Mirzapur along Vindhyachal Dham Ghat and Baria Ghat

3. NGO involvements:

Several NGOs are engaged in river-related awareness programs in Mirzapur. Among them, GSB Seva Samiti plays a prominent role. While most initiatives are planned and implemented by the Nagar Palika Parishad, the NGO collaborates by mobilizing communities, promoting waste segregation, enforcing

plastic bags and encouraging river cleanliness through citizen-led initiatives. It has also organized sapling distribution drives to raise public awareness.

2.8 INSTITUTIONAL FRAMEWORK

The list of existing agencies responsible for planning, development and service delivery within the planning area are presented in Table 2-3.

Table 2-3: Role and responsibility of key government agencies for Mirzapur City

Sl. No.	Department	Key Role and Responsibilities
A. Regional/ State level		
1	District Administration, Mirzapur	Maintaining law and order, coordinating civic operations and ensuring regulatory compliance across the city.
2	Forest and Wildlife Department	- Protect wildlife habitat in nearby forest areas comprising native flora and fauna, endangered species and biodiversity-rich zones. - Conserve water catchment areas by implementing watershed management, preventing soil erosion and maintaining forest cover to ensure sustainable groundwater recharge and surface water quality.
3	Mirzapur Tourism Development Department	- Formulate district tourism policies and long-term development strategies - Develop eco-tourism zones and nature trails with Forest Department coordination - Monitor environmental and social impact of tourism projects - Implement safety protocols and eco-friendly practices
4	State Mission for Clean Ganga, Uttar Pradesh	- Execute centrally funded projects for sewage treatment, river rejuvenation, drainage management and ghat development - Ensure timely completion of STPs (Sewage Treatment Plants), I&D (Interception & Diversion) works and faecal sludge management projects - Oversee construction and beautification of ghats, crematoria and riverfront amenities to enhance religious and tourism experiences while maintaining sanitation. - Run awareness campaigns, school programs and public outreach to encourage citizen participation in river conservation.
5	Irrigation and Water Resource Department, Uttar Pradesh	- Construct and maintain embankments, spurs, check dams and anti-erosion works along rivers - Develop watershed projects to conserve soil and water in hilly terrain. - Plan, design and construct canals, dams, barrages, lift irrigation schemes and tube wells to support agriculture - Identify and mark the maximum flood level recorded or estimated during a major flood.
6	Pey Jal Nigam, Uttar Pradesh	- Plan, design and construct drinking water supply, - Implement rural water schemes such as Jal Jivan Mission, - Install chlorination units, UV treatment, or filtration systems in contamination-prone zones, - Prepare Detailed Project Reports (DPRs) and execute works for sewer networks, sewage treatment plants (STPs) and drainage systems in coordination with Urban Development Department or Smart City Projects.
7	Ground Water Board, Mirzapur	- Monitors groundwater levels and quality across the region. - Maps aquifers and assesses water availability for sustainable use. - Guides rainwater harvesting and recharge techniques.
8	Town and Country Planning Department, Uttar Pradesh	- Prepare Master Plans, Zonal Development Plans and Land Use Maps for cities, towns and notified areas, - Prevent unauthorized constructions and encroachments, - Conduct public consultations, hearings and surveys before finalizing plans.

Sl. No.	Department	Key Role and Responsibilities
9	Uttar Pradesh Pollution Control Board	- Enforce key environmental acts including: Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, Environment Protection Act, 1986, Plastic Waste Management Rules, 2016, Biomedical Waste Rules, E-Waste Rules, Solid Waste Rules, etc. - Regularly monitor water quality of the rivers, - Actively support the Namami Gange program through monitoring and enforcement, - Ensure no untreated sewage or industrial waste is discharged into rivers, - Conduct regular inspections of industrial units, hotels, stone crushers, mining sites, etc.
10	DIC, Mirzapur	- Supports the setup and growth of Micro, Small & Medium Enterprises by offering guidance, subsidies and approvals. - Acts as a one-stop hub for entrepreneurs to access licenses, registrations and government schemes. - Organizes training, counseling and awareness programs to foster local entrepreneurship. - Prepares district-level industrial profiles and identifies potential sectors for investment and development.
11	Department of Agriculture	- Promotes major crops like wheat, paddy, pulses and sugarcane through improved seeds, fertilizers and farming techniques. - Implements government schemes such as PM-KISAN, soil health cards and crop insurance to support farmers financially and technically. - Oversees irrigation planning, promotes water-efficient practices and supports infrastructure like tubewells and canal systems. - Collects agricultural data, monitors productivity and provides expert guidance through Krishi Vigyan Kendras and extension officer
12	Mirzapur Vindhyachal Development Authority	Oversees building permissions, zoning and development activities to ensure planned growth and prevent unregulated construction
13	Nagar Palika Parishad Mirzapur	- City governance and civic administration - Urban services and infrastructure – solid waste management, maintenance of road & drainage, management of water supply & sewerage - Environment and public welfare activities - Development and planning - Public interface and emergency services.

3 ECOLOGICAL PROFILE OF THE CITY

3.1 RIVER AND ITS ECOSYSTEM

The river ecosystem of Mirzapur–Vindhyachal is defined by River Ganga and seasonal streams, which uphold ecological balance, cultural heritage and urban life. Effective flood line regulation and an understanding of river morphology to manage risks, safeguard communities and address the growing pressures of pollution, erosion and unplanned development along the riverbanks.

River Morphology: Originates from the Gangotri Glacier in Uttarakhand, River Ganga enters Mirzapur near Vindhyachal, flowing approximately 12 km within the municipal boundary and 19 km within the planning boundary. Flowing along the northern edge of the city, it exhibits a meandering course with active floodplain deposition and point bars. Continuing south-eastward, the river exits Mirzapur beyond Bharuhana and Dewari, where the channel widens into an expansive alluvial plain, carrying sediments downstream. It is a perennial river with continuous flow throughout the year, traversing eastward across Mirzapur through urban, cultural and pilgrimage zones. Seasonal fluctuations are generally moderate; however, monsoon-induced flooding occurs frequently, resulting in adverse impacts on settlements and causing damage to infrastructure along the riverbanks.

Several prominent ghats like Pakka Ghat, Nar Ghat, Hanuman Ghat, Sunder Ghat and Vindhyachal Dham Ghat lies along its course, serving as vibrant centers for daily rituals, festivals and community. The river also supports agriculture, fisheries, tourism and pilgrimage activities, thereby forming the lifeline of the Mirzapur–Vindhyachal urban system.



Picture 3-1: River Ganga at Pakka Ghat, Mirzapur

Other stream flows for about 11.5 Km within the planning area and about 5.9 Km within Municipal area the and eventually merges with Ojhala nallah then further fall into River Ganga.

Temporal Course Change of river Ganga: The shifting of the river channel has been observed towards the urban core of Mirzapur in the eastern direction (refer Map 3-1), where successive courses reveal

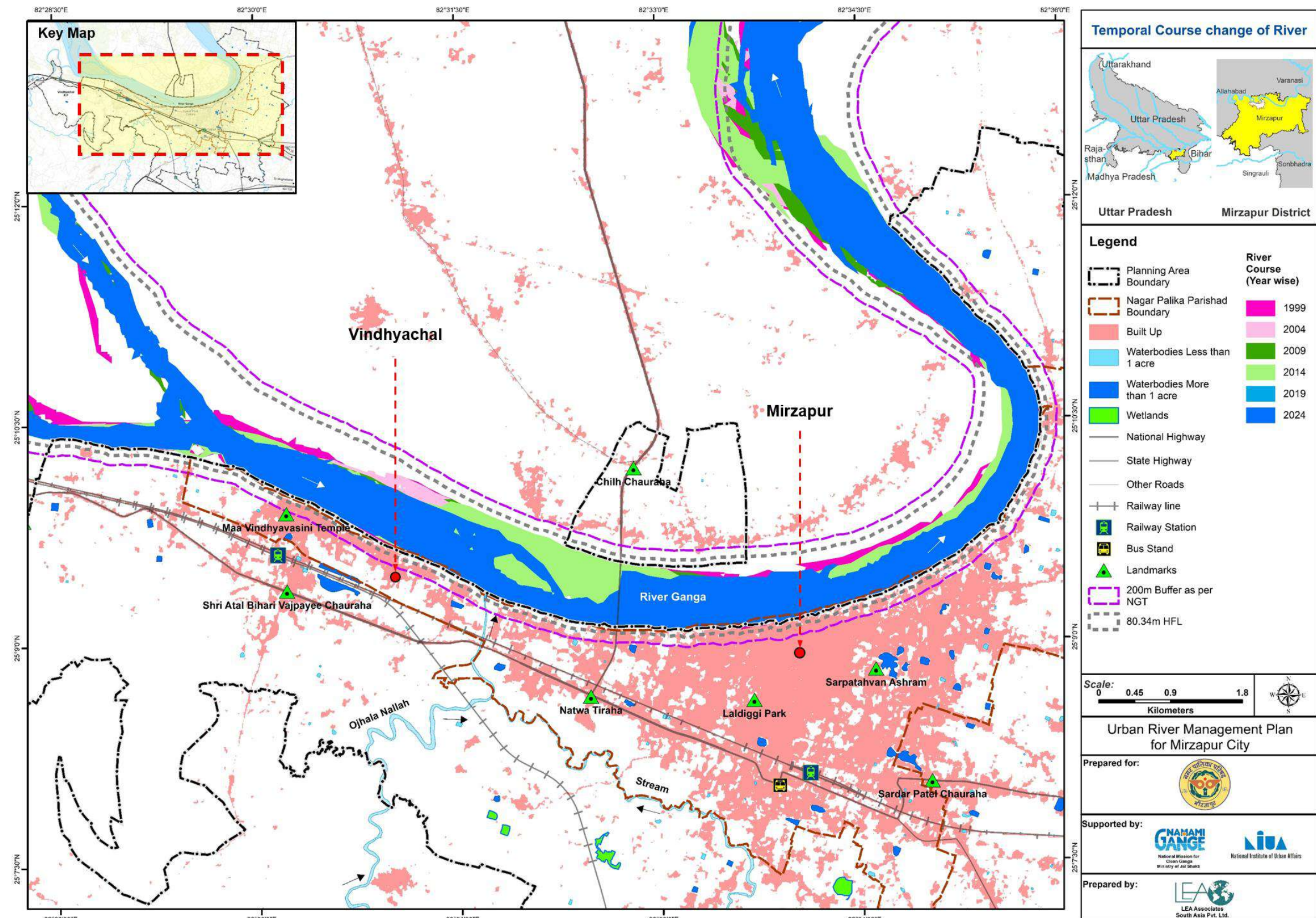
progressive bank line migration and a widening of the active channel belt along the edge of the city. This lateral migration has resulted in intensified bank erosion, repeated redistribution of sandbars, instability along the outer bends and encroachment towards inhabited areas and transport corridors in several locations such as SP Housing & Officers' Colony, Ghode Shaheed Baba site & Mahaveer Park, Chaube Ghat cremation site, Hargad Pump House, Chandika Gram & Chandika Dham Temple, Visundarpur, Dayanand Girls' Inter College, Mandaliya Hospital, Arjunpur Pump House, Hanuman Temple, Nibi village and Repuria cremation site. In response to these geomorphic pressures that exacerbate flood-related impacts, structural protection measures such as embankments and retaining walls are being implemented along the most erosion-prone reaches to safeguard nearby settlements and critical public infrastructure.

Seasonal Flow Variation: The show the seasonal variation between the pre-monsoon (April 2024) and post-monsoon (October 2024) periods. In the pre-monsoon season, the river channel is comparatively narrower than the post- monsoon season with reduced water spread. This seasonal inundation increases flood risk for settlements, while also enhancing ecological flow and sediment transportation towards the city (Refer Map 3-2).

To illustrate the river and adjoining areas, the river has been divided into two sections, each highlighting different aspects of the river–city interface. The details of these cross-sections are as under:

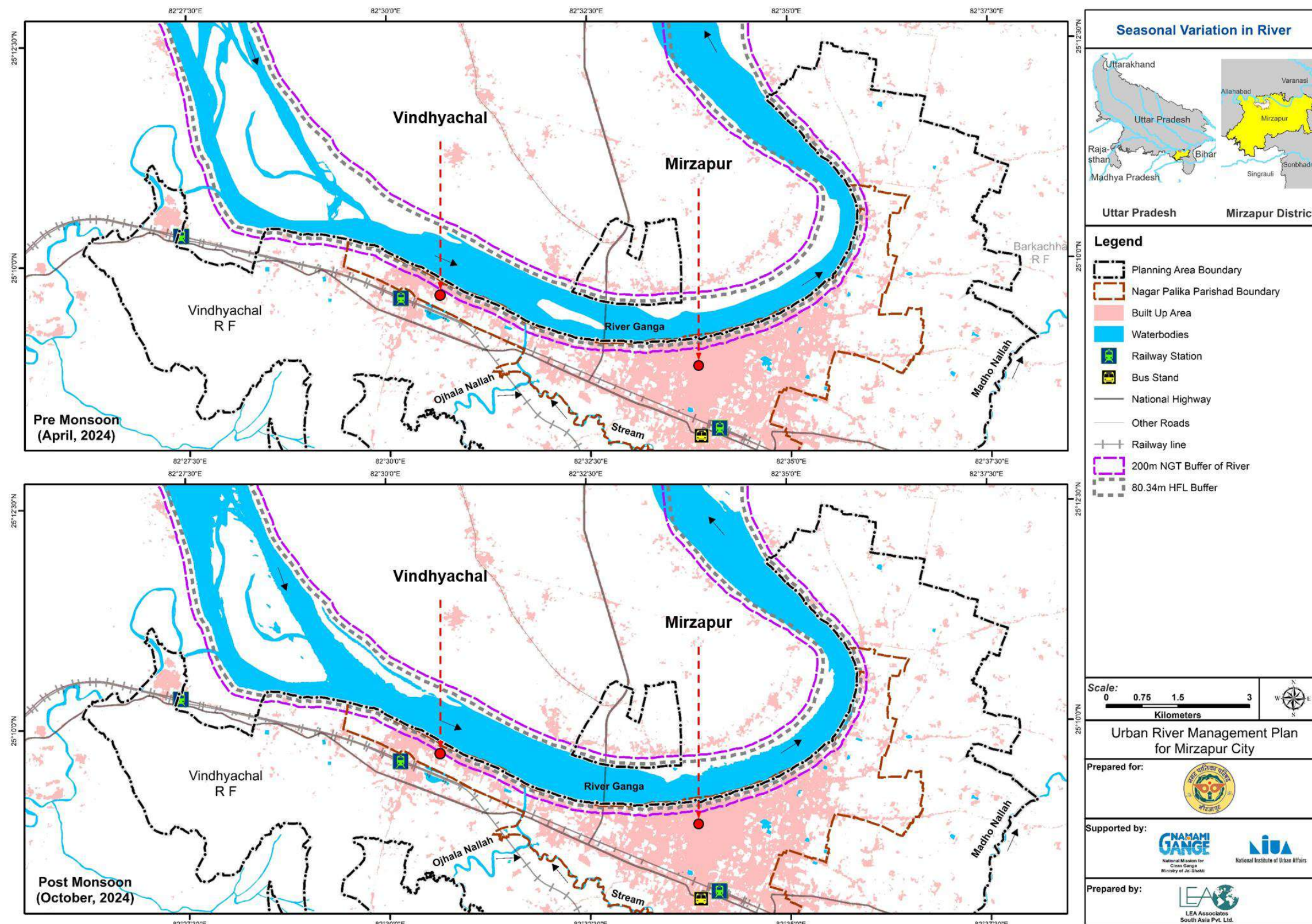
The cross-section of Upper River Ganga at Vindhyachal Dham Ghat (Vindhyachal) (Refer Figure 3-1) represents a wide river corridor with agricultural floodplain on the northern bank and urban settlement on the southern bank. Elevation varies from about 85 m near the built-up edge to nearly 110 m at the high terrace, reflecting a distinct rise away from the channel. The riverbed remains flat and low-lying for approximately 900 m of river width before rising sharply by around 25 m towards the agricultural side, suggesting sediment deposition and levee formation. A broad mid-channel bar of sand and bare patches indicates periodic flooding and shifting sediment. While the southern bank has a stable settlement fringe with sparse vegetation, the northern bank supports agriculture and open strips, subject to seasonal sand deposition. Overall, the section highlights the Ganga's active sediment dynamics with a clear contrast between urban fringe and agricultural floodplain.

The cross-section of Lower River Ganga at Nar Ghat (Refer Figure 3-2), Mirzapur shows a broad channel bordered by a wide, sand-dominated floodplain and the edge of urban settlements. Elevation varies from about 84 m at the channel base to 107 m on the upper terrace, spanning nearly 1100 m in width. The riverbed from north to south is predominantly flat and low-lying, characterized by extensive sandy mid-channel bars, active sediment deposition and seasonal flooding that shapes the floodplain dynamics. The southern urban bank lies at a slightly higher level with limited vegetation, dense habitation and traces of bank stabilization. In contrast, the northern bank rises steeply into a natural levee and upper terrace, with agricultural lands and sparse settlements beyond the floodplain. Overall, the cross-section reflects an active fluvial system with ongoing sediment deposition, relatively stable urban margins and dynamic sandbar zones typical of major alluvial rivers.



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) NDWI/ NDBI analysis: DEM Data; 4) HFL: National Database for Emergency Management; 5) 200m Buffer: NGT; 6) Transport Network: OSM

Map 3-1: Temporal Course Change of River Ganga



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) NDWI/ NDBI analysis: DEM Data; 4) HFL: National Database for Emergency Management; 5) 200m Buffer: NGT; 6) Transport Network: OSM

Map 3-2: Seasonal Variation in River Ganga



Figure 3-1: Cross Section of Upper River Ganga at Vindhyachal Dham Ghat, Vindhyachal



Figure 3-2: Cross Section of Lower River Ganga at Nar Ghat, Mirzapur

3.2 BLUE-GREEN RESOURCES IN THE CITY

According to the Master Plan 2031, Mirzapur comprises approximately 15% of blue areas (rivers, waterbodies and wetlands) and 32.27% of green areas (parks, open spaces and vegetation) within the planning boundary.

3.2.1 Blue Resources:

Waterbodies: There are a total of 163 waterbodies within the planning area of which 59 are located within the Municipal limits. Among these, 67 waterbodies are in the planning area of which 29 are within the NPP which are larger than one acre in size. A condition assessment of 11 waterbodies within Mirzapur's municipal limits shows that the waterbodies are surrounded by mixed land use. Saghara Talab Vindhyachal, Sarpatahava Talab Bahuva ka Pokhara and Gosai Talab are impacted by solid waste dumping and untreated used water inflows from nearby drains and household connections. The absence of boundary protection further contributes to waste accumulation along their edges (Refer Table 3-1).

In addition, 12 notified wetlands present within the planning area, though no wetland lies within the municipal limits. Despite the limited scale, the waterbodies and wetlands play a vital role in groundwater recharge, flood moderation and microclimate regulation, underscoring the need for their systematic rejuvenation and conservation in Mirzapur (Refer Map 3-4)



Picture 3-2: Ramaipai pond



Picture 3-3: Gosai Talab



Picture 3-4: Merthi talab



Picture 3-5: Sarpatahava talab

Table 3-1: Qualitative Evaluation Result for Water Bodies

Sl. no.	Name of Water bodies	Presence of solid waste in or around the water body	Discharge of untreated used water in the water body	Presence of a boundary protection around a water body	Visible eutrophication in the water body	Min. DO	Reduction in volume of water from previous year
1	Saghara talab Vindhayachal (left)- North of railway line	Yes	No	No	No	No access	No
2	Saghara talab Vindhayachal(right) - North of railway line	Yes	No	No	Yes	No access	No
3	Merthi talab - sabri road	Yes	No	No	Yes	No DO - public not cooperating	No
4	Telliya ka tara	Yes	No	No	Yes	No access	No
5	Ramaipati ka Pokhara	Yes	No	No	Yes	3.0 mg/L	No
6	Barondha talab	Yes	No	No	Yes	0.7 mg/L	No
7	Sarpatahava talab	Yes	Yes	No	Yes	1.3 mg/L	No
8	Bahuva ka Pokhara	Yes	Yes	No	Yes	1.7 mg/L	No
9	Sakayini talab	Yes	No	No	Yes	No Access	No
10	Gosai talab	Yes	Yes	No	Yes	2.3 mg/L	No
11	Shuklaha Talab	Yes	Yes	No	Yes	2 mg/L	No

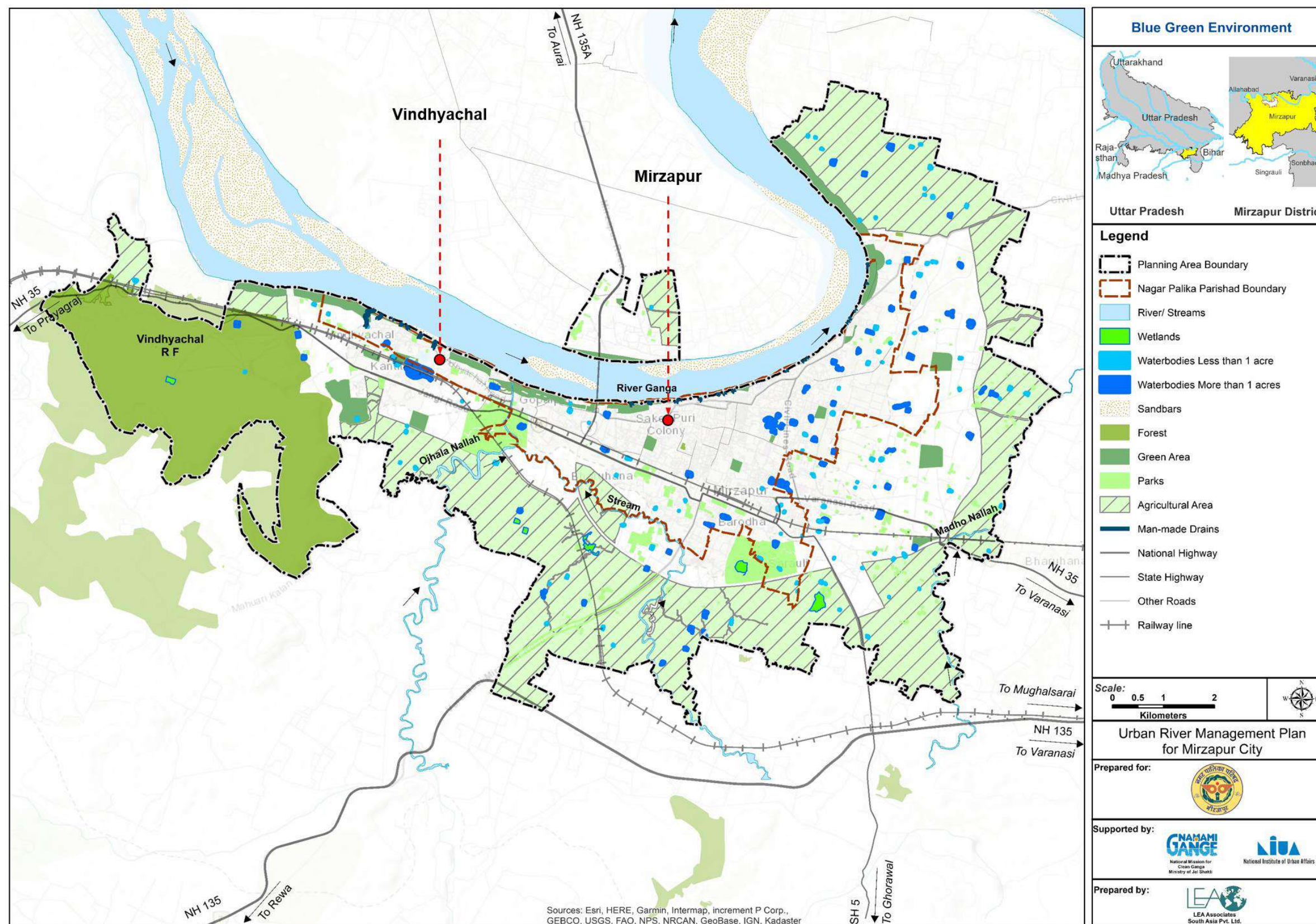
Source: Consultant's site visit and Analysis, 2025

3.2.2 Green Resources:

- 1. Forest:** Vindhayachal reserve forest is located south and southeast of the Vindhayachal city within the planning boundary. The vegetation predominantly comprises species such as palash, teak, sal, mahua, tendu, shisham and semal. The most important forest product is 'Tendu'. The tree has leaves which are used for making 'Hand-rolled Cigarette (bidi)' in the district. Khair and lac are also produced in the forest. The region's mixed dry-deciduous forests and scrublands, interspersed with rocky hills and grasslands.
- 2. Wildlife:** The Vindhayachal forest supports a rich variety of wildlife adapted to the Vindhyan landscape. These woodlands shelter mammals such as the Indian leopard, jackal, jungle cat, sloth bear, wild boar, chinkara (Indian gazelle), nilgai (blue bull) and langur. Avian life is equally diverse, with numerous resident and migratory species including Indian roller, peafowl, parakeets, woodpeckers, kingfishers and a range of waterbirds around the riverbanks and wetlands.

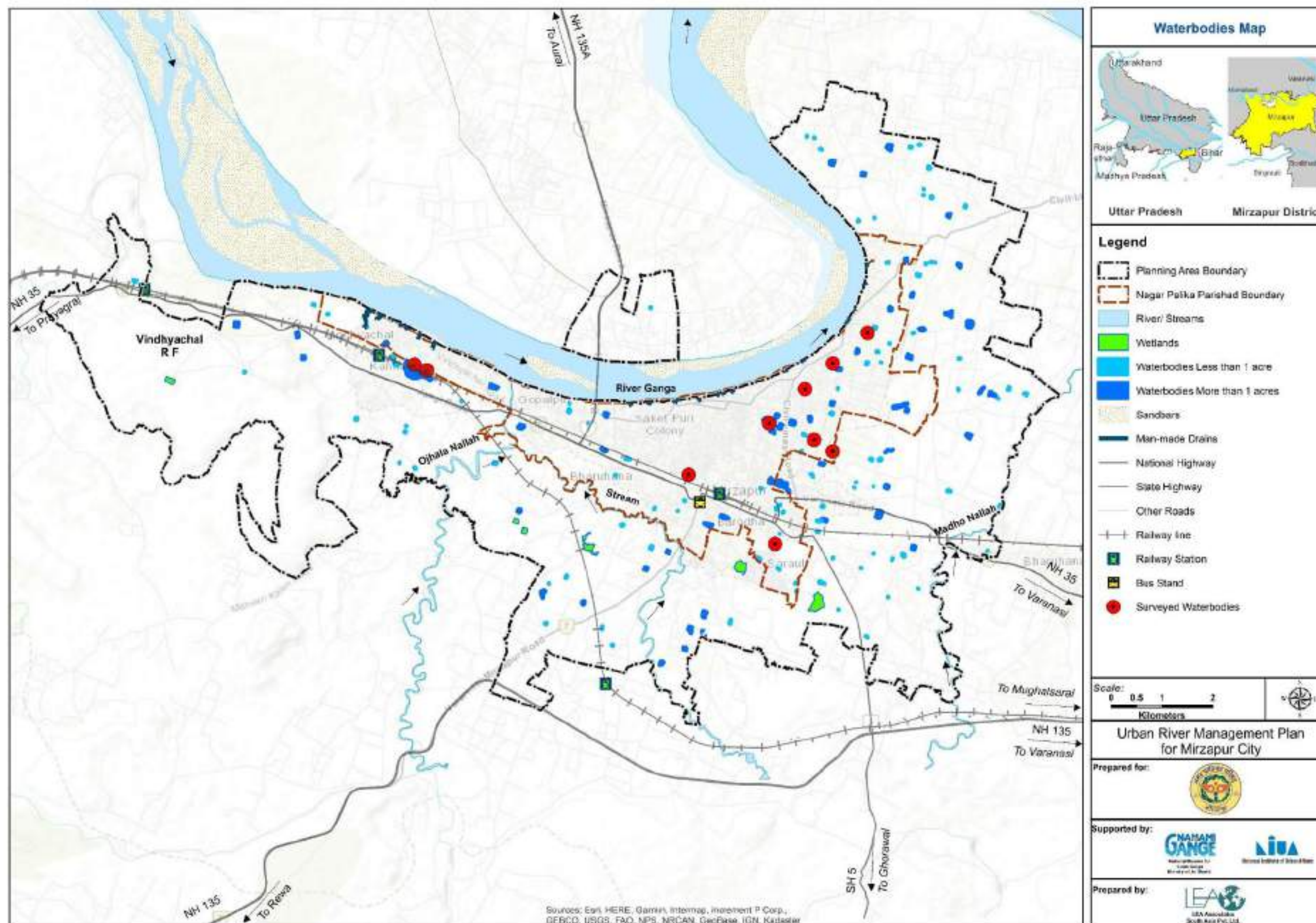
River Ganga, supports a diverse range of aquatic life, provide habitat for numerous fish species such as rohu, catla and mrigal, along with turtles and the endangered River Ganges dolphin. These organisms play an important role in maintaining the ecological balance of the region.

3. **Urban Green Belt/ parks:** As per the Mirzapur–Vindhyachal Master Plan 2031, about 2,118.76 hectares (32.27%) of land have been earmarked for parks, open spaces and green belts. This includes 220.86 hectares (3.36%) allocated for green belts, 104.96 hectares (1.60%) for city-level parks, 177.82 hectares (2.71%) for regional parks, 66.6 hectares (1.01%) for social, cultural and religious areas, 9.84 hectares (0.15%) for sports or stadium parks and 27.4 hectares (0.42%) for exhibition and tourism-related parks. The proposed share of organized greens is higher than many other medium-sized cities and 10% minimum green area requirement specified by URDPFI guidelines, 2015.
4. **Agriculture:** As per the Mirzapur–Vindhyachal Draft Master Plan 2031, about 11263 hectares (57.50%) of land have been earmarked for agriculture.



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4)Transport Network: OSM

Map 3-3: Blue- Green Environment within Mirzapur- Vindhyachal



Map 3-4: Waterbodies in Mirzapur

3.2.3 Riparian Buffer

The riverbank of the Ganga and streams are characterized by built-up and barren land, particularly along the northern bank of the River Ganga and across the entire stretch of Ojhala Nallah. Within the 30-meter buffer zone of river and 10 mts of nallah, riparian vegetation plays a vital role in regulating water flow, reducing flood risks and sustaining ecological balance. Vegetation consists mainly of native grasses, shrubs and aquatic plants (Table 3-3). Most of the land along the banks is under the jurisdiction of the Irrigation Department and Forest Department, underscoring the need for coordinated stewardship to strengthen ecological resilience.

The methodology for calculating the length of river stretch within the 30-meter buffer considers the total length of the river bank measured from the river's edge. This length is then subdivided into typologies such as embankments, dense vegetation and agricultural field, etc.

Table 3-2 presents the existing land use along banks of the river, streams and nallahs.

Table 3-2: Existing Riparian Buffer along the Banks of River, Stream and Nallah (in kms)

Typology	River Ganga		Other Stream		Ojhala Nallah		Madho Nallah	
	Northern Bank	Western Bank	Eastern Bank	Southern Bank	Western Bank	Eastern Bank	Western Bank	Eastern Bank
Dense Vegetation	-	-	0.3	2.4	0.2	-	0.6	2.5
Low density vegetation	-	0.8	2.3	6.5	-	-	3.2	3.9
Agricultural Land	-	1.0	0.6	0.3	-	0.1	0.8	0.2
Built Up/ Embankment	-	1.4	1.2	2.4	-	-	-	-
Sandbar/ Barren Land	2.6	8.2	7.0	6.8	5.5	5.8	5.2	3.1
Total	2.6	11.4	11.4	18.3	5.8	5.9	9.8	9.7

Source: Consultant's analysis from site observation & satellite imagery

The details and map of the riparian buffer along the rivers are provided in Map 3-5.

3.2.4 Biodiversity

As mentioned in the section 3.2.3 the typology of flora and fauna along the *River Ganga and stream* includes native species such as *Neem* and *Peepal*, which play a crucial role in stabilizing riverbanks and filtering surface runoff. The common flora and fauna species along with its description is listed Table 3-3. The detailed list of Flora and Fauna is given in the Annexure 5 & Annexure 6.

Table 3-3: List of Flora and Fauna Along the River / Stream

Parameter	Description
Riparian Vegetation Composition	A diverse mix of trees, shrubs, climbers and grasses that support riverbank stability and ecological balance. Dominant tree species include <i>Azadirachta indica</i> (Neem), <i>Ficus religiosa</i> (Peepal), <i>Terminalia arjuna</i> (Arjun) and <i>Syzygium cumini</i> (Jamun). Common grasses such as <i>Saccharum spontaneum</i> (Kans), <i>Cynodon dactylon</i> (Doob grass) and <i>Imperata cylindrica</i> (Cogon grass) help bind soil and reduce erosion. Shrubs and climbers including <i>Ipomoea carnea</i> (Besharam), <i>Lantana camara</i> and <i>Tinospora cordifolia</i> (Giloy).
Buffer Width and Condition	The riparian buffer exhibits variable width and condition, with relatively intact vegetated stretches in less disturbed areas and partial fragmentation near ghats and settlements.
Faunal Presence	The riparian zone supports a mix of terrestrial and aquatic fauna. Common mammals include <i>Macaca mulatta</i> (Rhesus Monkey) and <i>Herpestes edwardsii</i> (Indian Grey Mongoose), which contribute to seed dispersal and trophic balance. Frequently observed bird species include

Parameter	Description
	Common Kingfisher, White-breasted Kingfisher, Pond Heron, Cattle Egret and Black Kite, which help regulate fish and insect populations. Reptiles such as <i>Varanus bengalensis</i> (Monitor Lizard) and various snake species inhabit sandy and vegetated riverbanks, forming an important component of the food chain.

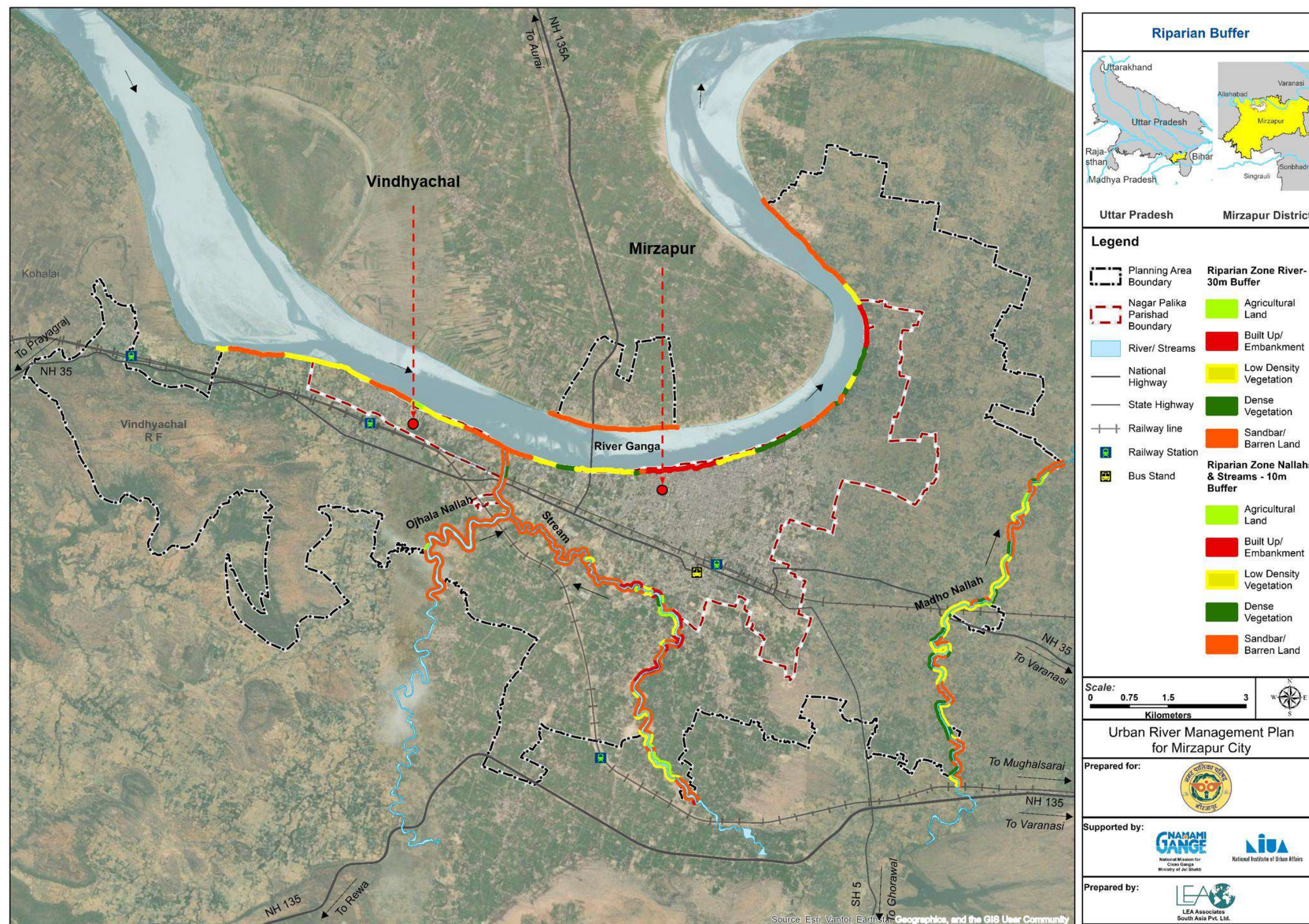


Picture 3-6: Riparian Buffer along the river



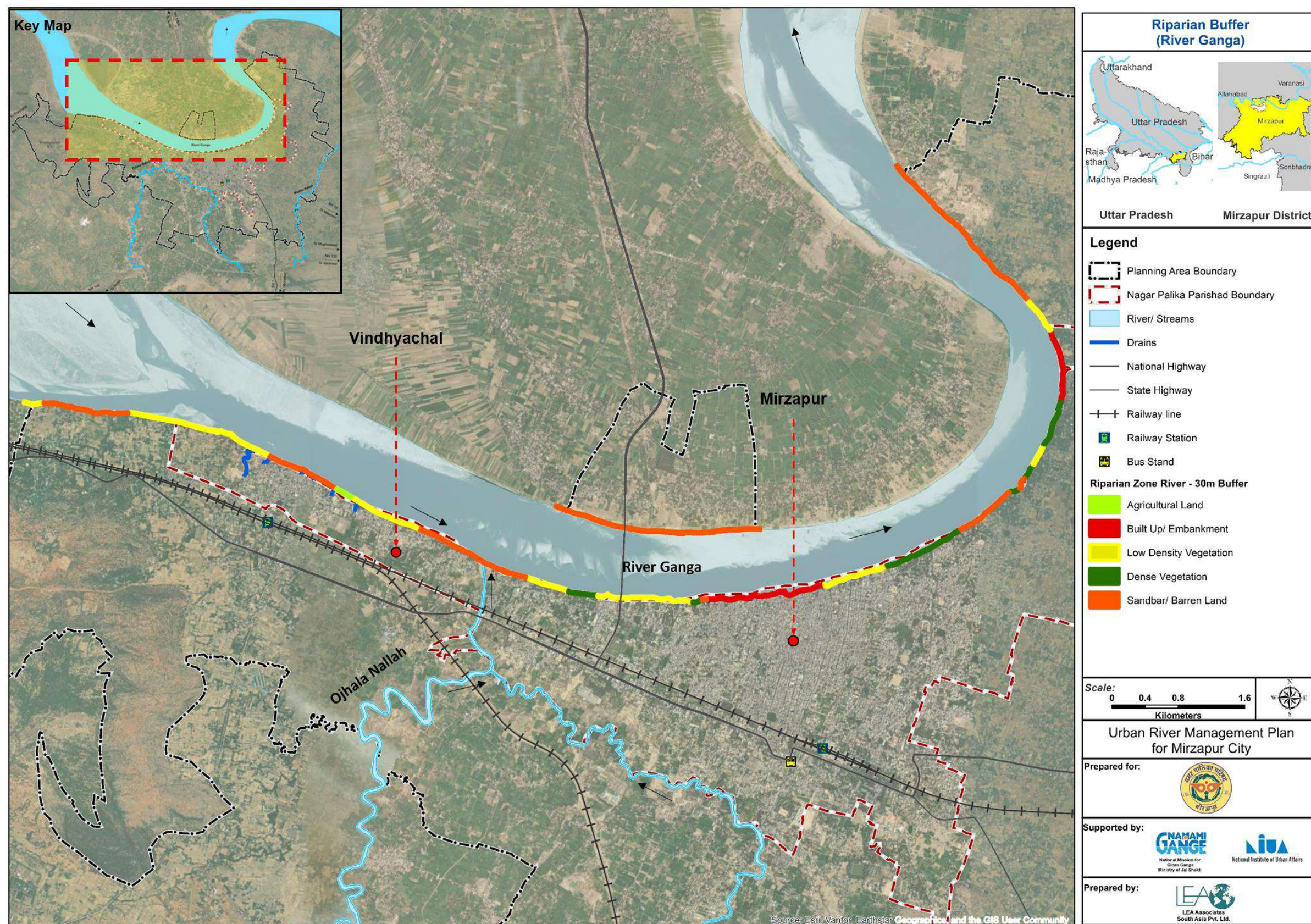
Picture 3-7: Existing Fauna species

The 'One Tree in Mother's Name' mission In Mirzapur is reinforced by the 2024-25 to 2033-34 Working Plan for the Forest Division, which proposes continuous strip plantations and riverbank afforestation to stabilize the Ganga's banks and establish green corridors.



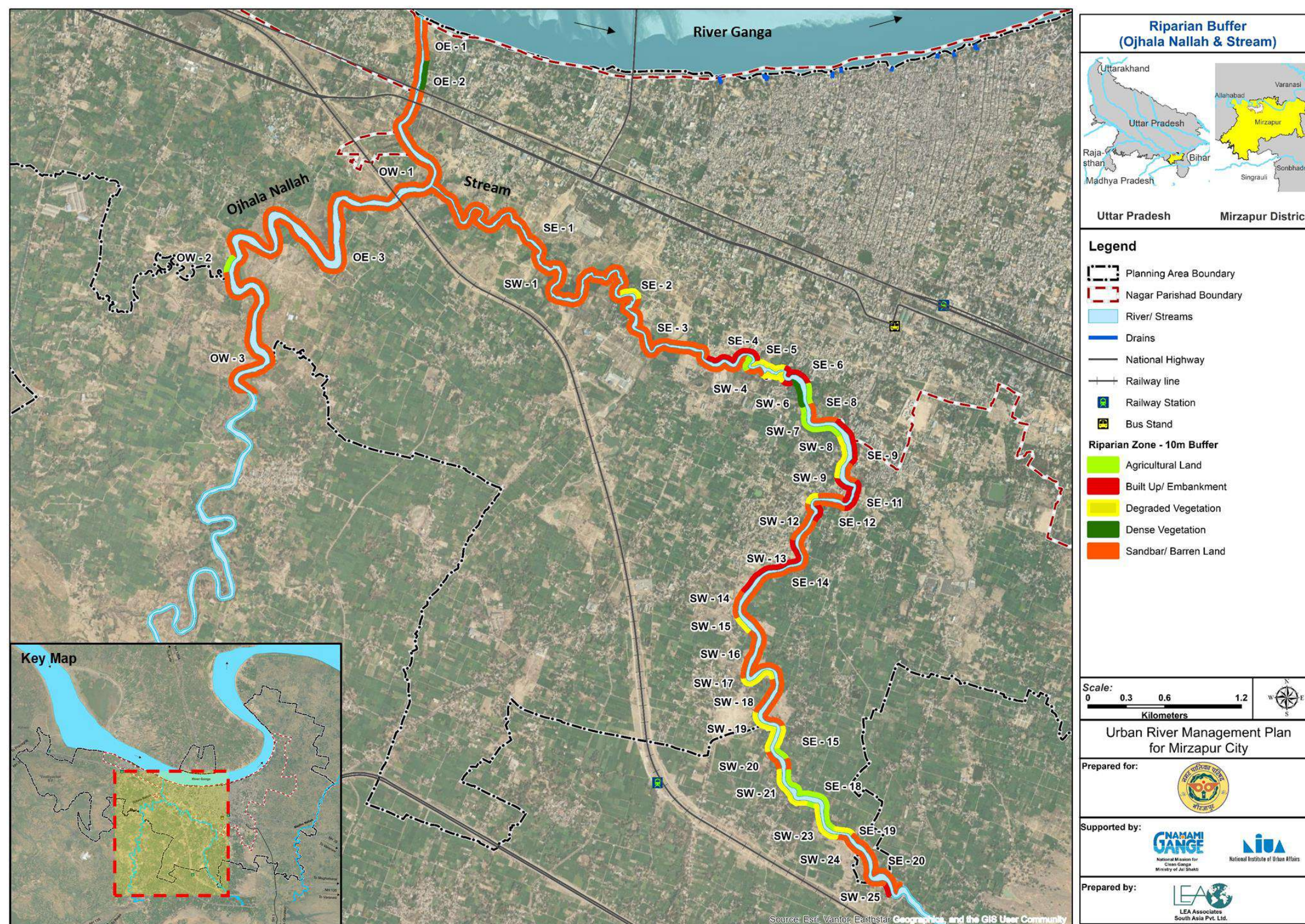
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4)Transport Network: OSM

Map 3-5: Riparian Buffer along the River, stream and Nallah



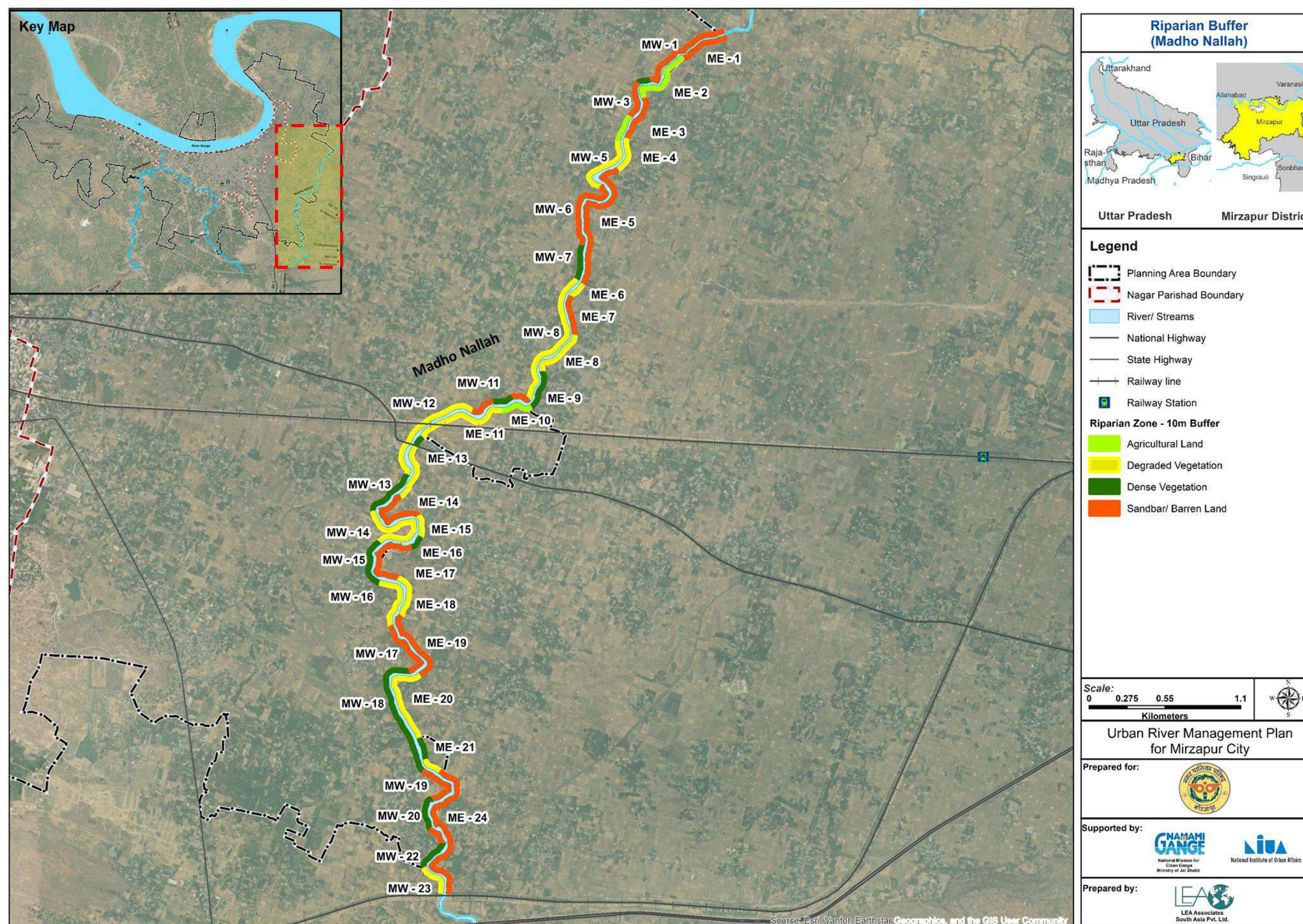
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4) Transport Network: OSM

Map 3-6: Riparian Buffer along River Ganga



Source: Mirzapur-Vindhyachal Masterplan 2031, Consultant Analysis, OSM

Map 3-7: Riparian Buffer along the Ojhala Nallah and stream



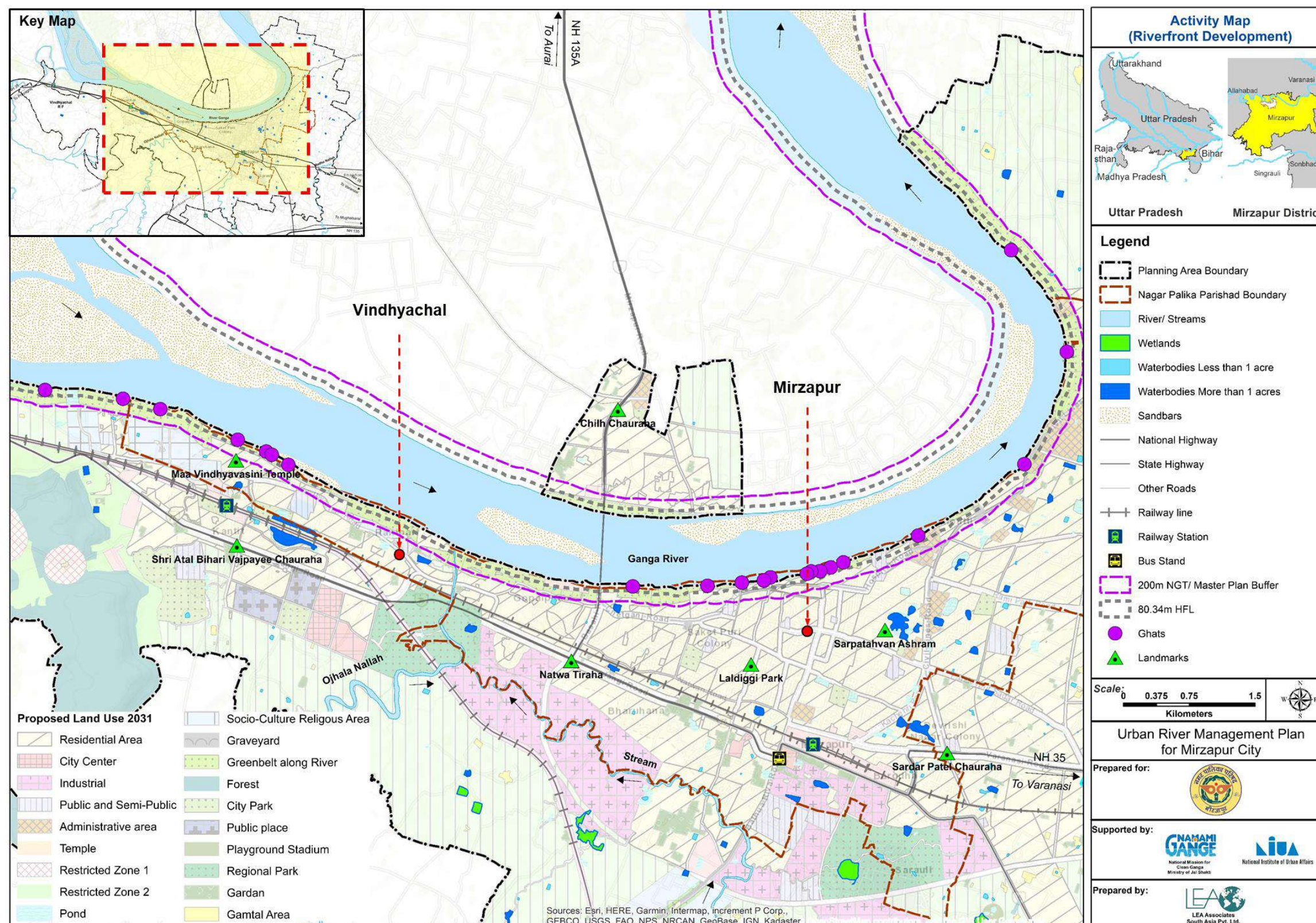
Source: Mirzapur-Vindhyachal Masterplan 2031, Consultant Analysis, OSM

Map 3-8: Riparian buffer along the Madho Nallah

3.3 ACTIVITY MAPPING ALONG THE RIVER

Activities observed along the River Ganga has been undertaken through a physical and satellite survey (refer Map 3-9). No significant activities were observed along the bank of stream.

- **Religious activities-** The riverfront of Mirzapur-Vindhyachal is marked by several prominent ghats that hold deep religious and cultural significance (Annexure 7).
 - i. **Vindhyachal Dham Ghat**, closely associated with the Maa Vindhyavasini Temple, serves as a sacred site for ceremonial bathing, rituals, and Ganga Aarti.
 - ii. **Pakka Ghat**, renowned for its intricately carved stone jaalis, is a popular venue for bathing and major festivals such as Kajri, Makar Sankranti, and Ganga Dussehra.
 - iii. **Nar Ghat**, with its historic role in river-based trade, continues to host Shiva Temple rituals and Ganga Aarti.
 - iv. **Baria Ghat**, housing temples dedicated to Shani and Shiva, is particularly vibrant during Diwali when the ghat is illuminated with diyas and candles.
 - v. **Other ghats**-In addition to these, other smaller ghats across the city also provides spaces for ritual bathing and community gatherings. Collectively, these ghats form the spiritual and cultural backbone of Mirzapur's riverfront, reinforcing its role as a center of devotion and tradition
- **Tourism and recreational activities:** Tourism and recreational activities along the river are anchored by boating and semi- permanent stalls selling puja items, food and souvenirs located within the ghat enhance visitor engagement. Hanuman Ghat **and** Sundar Ghat serve as hubs for boating, offering both leisure rides and community gathering spaces, with Sundar Ghat providing services at a fare of ₹100.
- **Cremation activities:** At Mirzapur, Chaube Ghat and at Vindhyachal, the Shivpur cremation ground at Ramgaya Ghat serve as primary sites for cremations along the riverbank. The remains of the deceased are typically cremated on the ghats and the ashes are either immersed directly into the river or scattered along the riverbanks as part of traditional last rites and rituals performed by local residents. Traditional open-air cremations still take place on the riverbed at these sites. Additionally, the practice of disposing of dead animals directly into the river has been observed.
- **Informal settlements:** As per the master plan, 2031, within the proposed buffer zone of 200 mts, the presence of settlements have been observed. These settlements occupy the flood-prone area, thereby constricting the intended protective belt and intensifying flood risk for adjacent communities



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) NDWI analysis using DEM Data; 4) HFL: National Database for Emergency Management; 5) 200m Buffer: NGT; 6) Transport Network: OSM; 7) Consultant Analysis

Map 3-9: Activity mapping along the river

3.4 FLOODING

Mirzapur is highly vulnerable to both fluvial and pluvial flooding. Fluvial flooding is driven by the swelling of River Ganga during the monsoon season whereas pluvial flooding is caused by intense local rainfall overwhelming urban drainage systems.

3.4.1 Fluvial Flooding

Flooding near the railway area in Mirzapur is driven by the backflow of river water during monsoon. When the river swells, stormwater drains and small nallahs that normally discharge into the river experience reverse flow, pushing water back into the city.

To safeguard ecological balance and regulate floodplain development, the Master Plan 2031 designates a 200-meter green belt along the River Ganga, prohibiting new construction and restricting building heights to 17.5 meters within this zone. A 6-meter green buffer is mandated on either side of drains and streams, while all water bodies exceeding one acre, as recorded in revenue records, are to be preserved with a 10-meter-wide green buffer. Furthermore, construction activities are strictly prohibited within a 6-meter radius of these water bodies, ensuring protection of river ecology, hydrology, and associated habitat.

3.4.2 Pluvial Flooding

Pluvial flooding in Mirzapur city occurs when intense rainfall overwhelms the stormwater drainage system, leading to widespread waterlogging across low-lying urban pockets. Along Ojhala nallah, ward number 11 and 24 around railway line often submerged, as the nallah fail to carry away the excess flow. In Vindhyachal, area near the temple becomes particularly vulnerable; Vindhayacal dham ghat in Vindhyachal and Hanuman ghat in Mirzapur, turn into pools of standing water during monsoon season. Civil Lines and its surrounding colonies face their own challenges, where poor drainage and rapid runoff leave streets impassable. Meanwhile, the crowded lanes of Chowk Bazaar and adjoining wards suffer waterlogging, the impervious surfaces and blocked drains turning a brief downpour into hours of disruption.

3.4.3 Ongoing/ Proposed/ Approved projects

Existing and Several cut-bank protection projects have been implemented along the southern bank of the Ganga in Mirzapur to safeguard vulnerable urban and cultural sites.

Table 3-4: List of banks- protection projects along southern bank of River Ganga

Location / Site	Length (km)	Status	Fiscal Year / Progress
SP Housing & Officers' Colony	0.65	Completed	FY 2021–22
Ghode Shaheed Baba site & Mahaveer Park	0.60	Completed	FY 2022–23
Chaube Ghat cremation site	0.40	Completed	FY 2022–23
Hargad Pump House	0.10	Completed	FY 2022–23
Chandika Gram & Chandika Dham Temple	0.34	Completed	FY 2019–20
Visundarpur	—	Ongoing	FY 2025 (13–78% progress)
Dayanand Girls' Inter College	—	Ongoing	FY 2025 (13–78% progress)
Mandaliya Hospital	—	Ongoing	FY 2025 (13–78% progress)
Arjunpur Pump House	—	Ongoing	FY 2025 (13–78% progress)
Hanuman Temple	—	Ongoing	FY 2025 (13–78% progress)
Nibi village	—	Ongoing	FY 2025 (13–78% progress)
Repuria cremation site	—	Ongoing	FY 2025 (13–78% progress)

Source- Irrigation Department, 2025

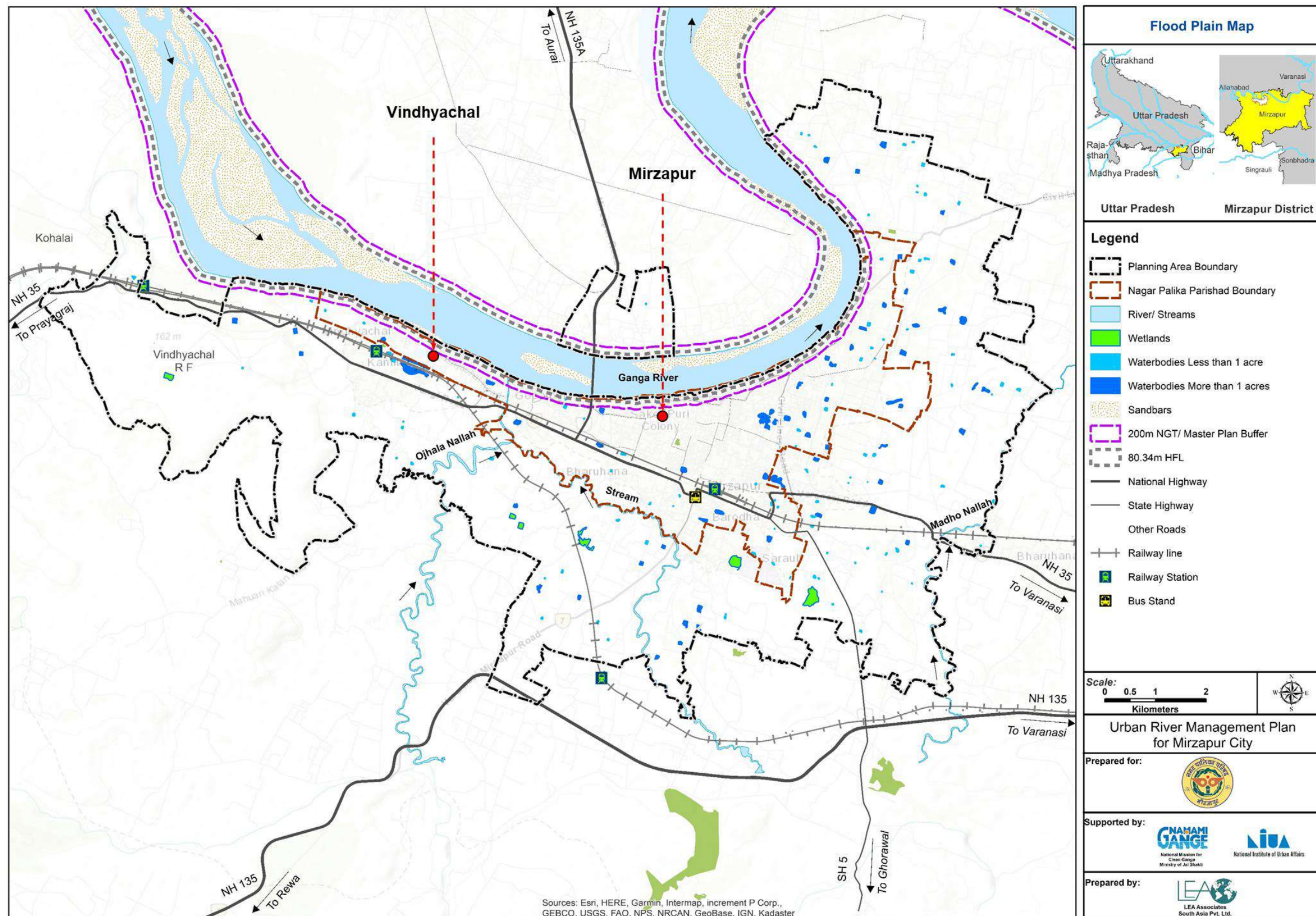
These proposals highlight a sustained effort to mitigate erosion risks, protect key infrastructure and preserve culturally significant areas along the riverfront. The detailed list of proposed projects taken up by the irrigation department in the floodplain is at Annexure 8.

3.4.4 Institutional mechanism

The Forest Department oversees ecological planning, plantation and conservation activities while the Nagar Palika Parishad handles public amenities, maintenance and urban integration.

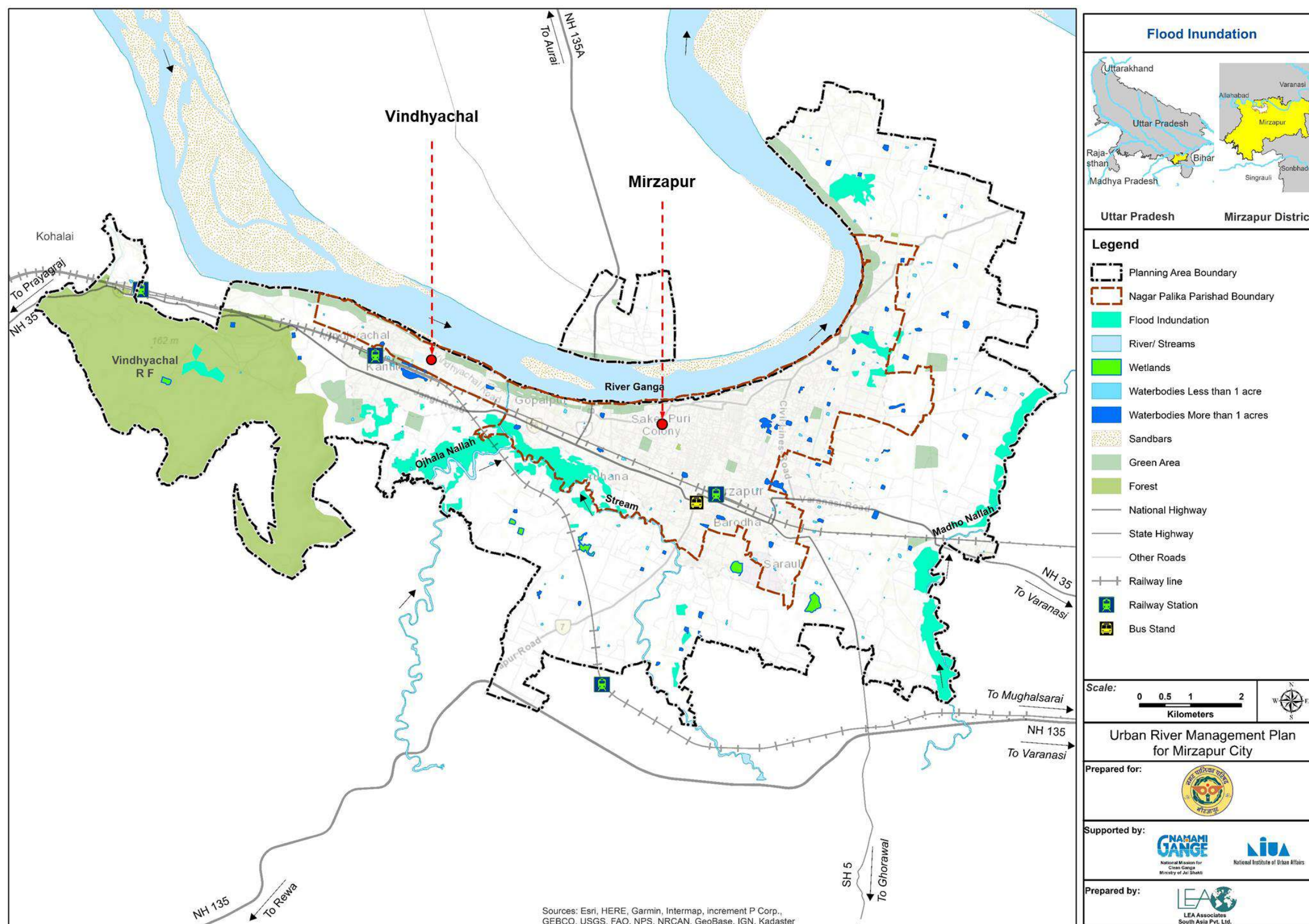
Table 3-5: Roles and responsibilities of government agencies in ecological management for Mirzapur

Departments	Role and Responsibilities
Irrigation Department	Lead agency for river bank protection, embankment construction and flood mitigation
Nagar Palika Parishad	Responsible for land regulation, solid waste management and informal settlement control along the river banks
Forest Department	Custodian of forested riparian zones and biodiversity conservation



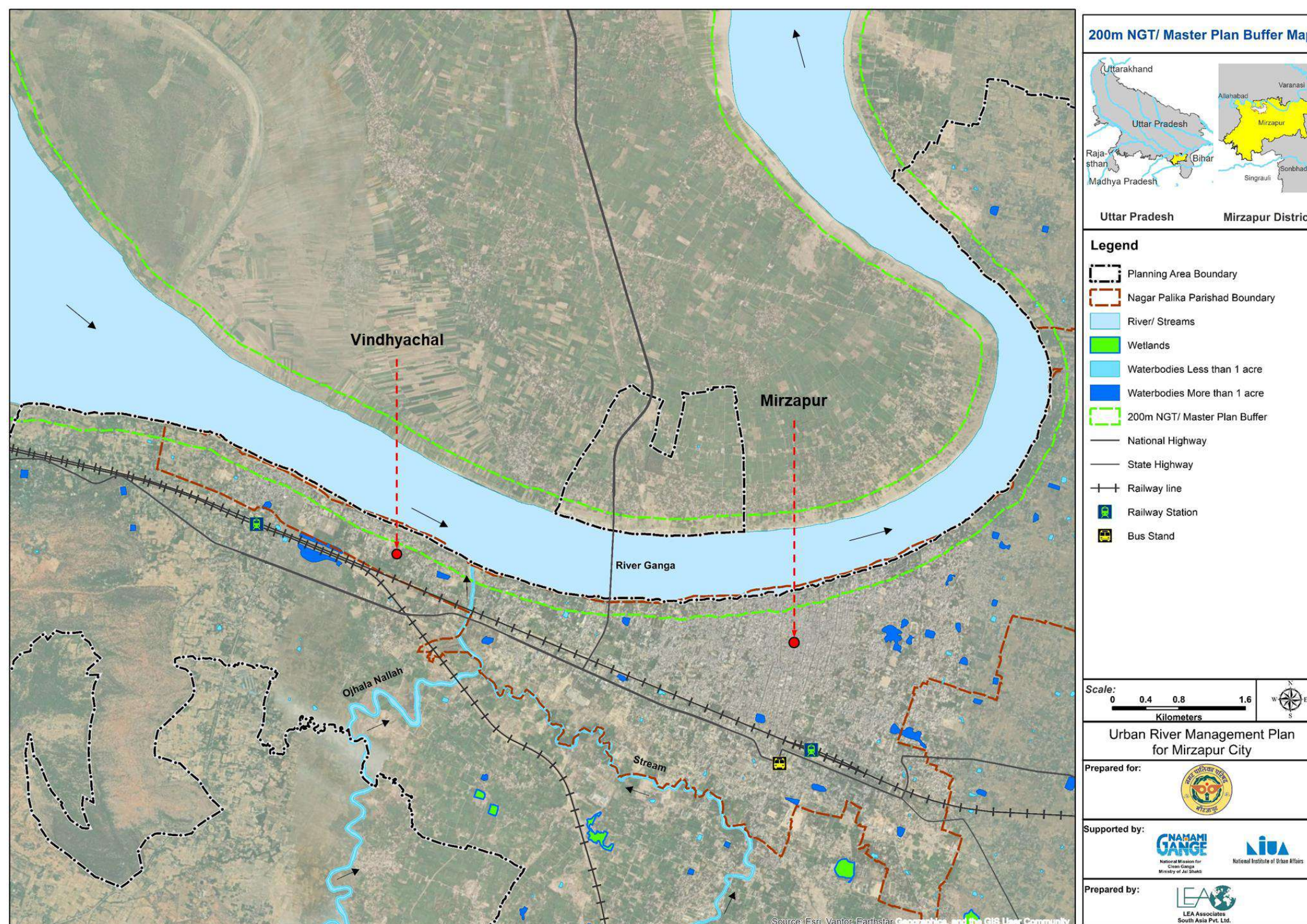
Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) HFL: National Database for Emergency Management; 4) 200m Buffer: NGT; 5) Consultant Analysis; 6) Transport Network: OSM

Map 3-10: Flood Plain Map of Mirzapur



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Flood Inundation Data: FMISC (24th July 2024); 4) Transport Network: OSM

Map 3-11: Flood inundation map of Mirzapur



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) 200m Buffer: NGT; 4) Transport Network: OSM

Map 3-12: 200m NGT/ Master Plan gutter Map

4 PHYSICAL INFRASTRUCTURE

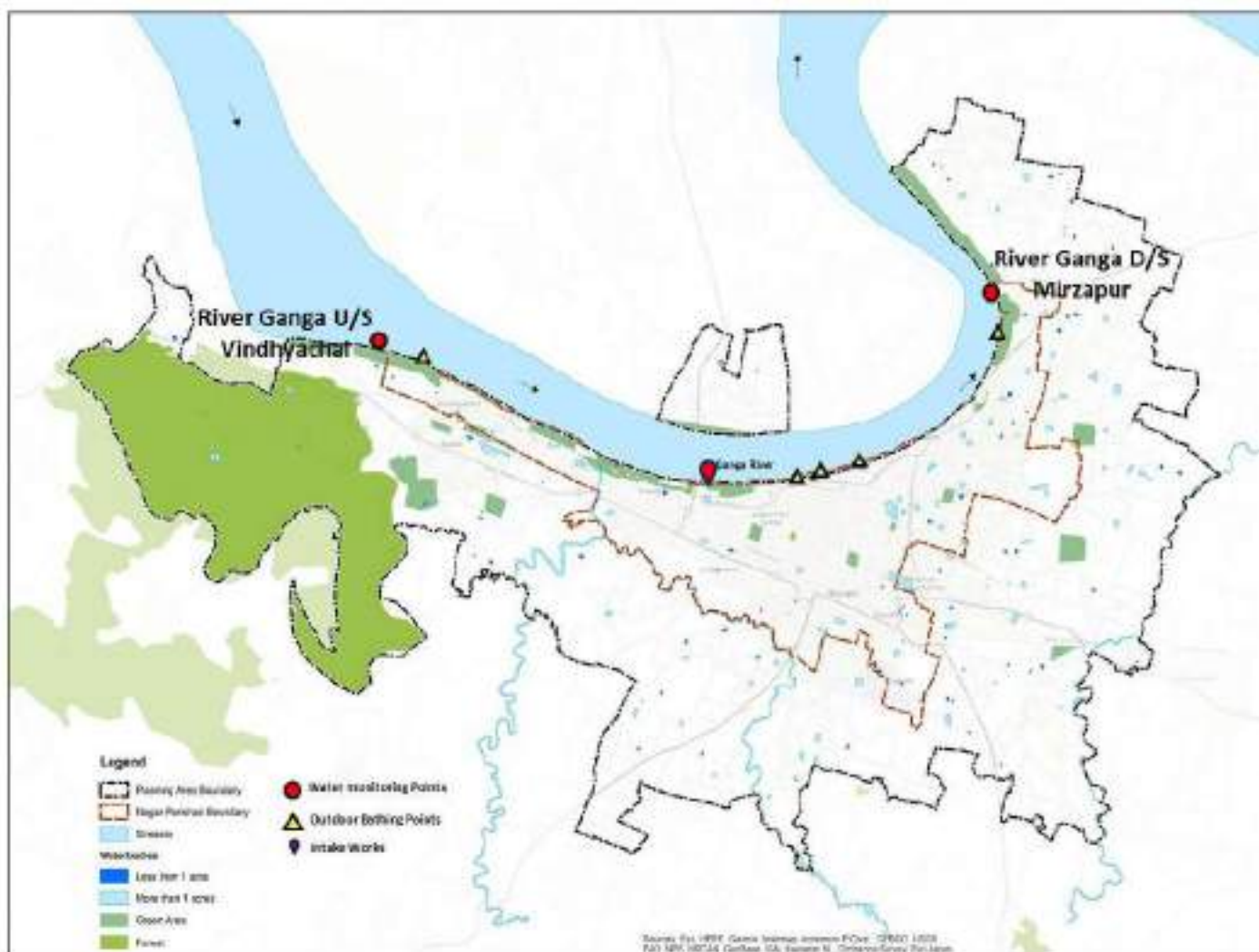
4.1 URBAN WATER MANAGEMENT

4.1.1 Surface Water

Ganga River changes drastically throughout the year at Mirzapur, swelling massively during the monsoon season but shrinking to a sluggish, shallow flow during the dry summer months. These low-flow periods are directly associated with much higher levels of pollution because less water moves past the city to dilute incoming urban runoff and untreated waste from the nallahs.

Data on Ganga River water quality was obtained from CPCB for the years 2020 to 2025 for two locations (refer Map 4-1).

- River Ganga U/S Vindhyachal
- River Ganga D/S Mirzapur



Map 4-1: CPCB Monitoring points

Source: UP Pollution Control Board, Sonbhadra division

The water quality of river Ganga as per the two monitoring stations has been studied based on the standards prescribed by CPCB (Annexure 9). The water quality in Mirzapur has been classified as category C i.e., Drinking water source after conventional treatment and disinfection. River Ganga water quality at upstream of Mirzapur at Vindhyachal is presented below in Table 4-1.

Table 4-1: Designated Best Use classification of Ganga River water at U/S Vindhyachal, Mirzapur

Year	pH	DO (mg/L)	BOD (mg/L)	Total Coliform (MPN / 100ml)	CPCB Class Achieved	Limiting Parameter for Class Upgradation
2020	8.1	8.2	2.7	26,650	Below Class C	Total Coliform heavily exceeds Class C limit (≤ 5000)
2021	7.0	9.4	2.5	9,150	Below Class C	Total Coliform exceeds Class C limit
2022	8.2	8.9	3.1	11,550	Below Class C	Total Coliform exceeds Class C limit; BOD marginally exceeds limit (≤ 3.0)
2023	8.2	8.4	2.6	1,600	Class C	Fails Class B due to Total Coliform > 500
2024	8.1	7.7	2.4	1,100	Class C	Fails Class B due to Total Coliform > 500
2025	8.1	7.6	2.7	1,500	Class C	Fails Class B due to Total Coliform > 500

Source: Central Pollution Control Board

At Vindhyachal, pH and DO consistently meet Class C (Drinking water source after conventional treatment and disinfection) criteria. However, Total Coliform counts remain the limiting factor, preventing upgradation beyond Class C. In 2022, BOD marginally exceeded the limit, but subsequent years show compliance. Improvement since 2023 reflects partial effectiveness of upstream sewage treatment interventions. River Ganga water quality at downstream of Mirzapur is presented below in Table 4-2.

Table 4-2: Designated Best Use classification of Ganga River water at D/S Mirzapur

Year	pH	DO (mg/L)	BOD (mg/L)	Total Coliform (MPN /100ml)	CPCB Class Achieved	Limiting Parameter for Class Upgradation
2020	8.0	7.0	3.8	21,500	Below Class C	Total Coliform vastly exceeds limit (≤ 5000); BOD exceeds limit (≤ 3.0)
2021	7.6	8.4	3.0	12,200	Below Class C	Total Coliform exceeds limit
2022	7.7	8.1	3.7	14,100	Below Class C	Total Coliform and BOD exceed limits
2023	7.8	7.6	3.9	17,500	Below Class C	Total Coliform and BOD exceed limits
2024	7.7	7.0	3.5	14,000	Below Class C	Total Coliform and BOD exceed limits
2025	7.7	6.5	4.0	16,000	Below Class C	Total Coliform and BOD exceed limits

Source: Central Pollution Control Board

Downstream Mirzapur consistently fails to achieve Class C standards. Both Total Coliform load (7,400–21,500 MPN/100ml) and BOD (>3.0 mg/L in most years) remain persistently high, reflecting untreated municipal sewage inflows and organic waste load. Unlike upstream, no improvement trend is visible, highlighting urgent need for drain interception and faecal sludge management.

4.1.2 Groundwater

According to the Dynamic Ground Water Resources of India, 2024, the overall groundwater status for the Mirzapur region is categorized as Safe, with an extraction stage of 61.8%, which is well below the 70% threshold. (Refer Map 4-2)

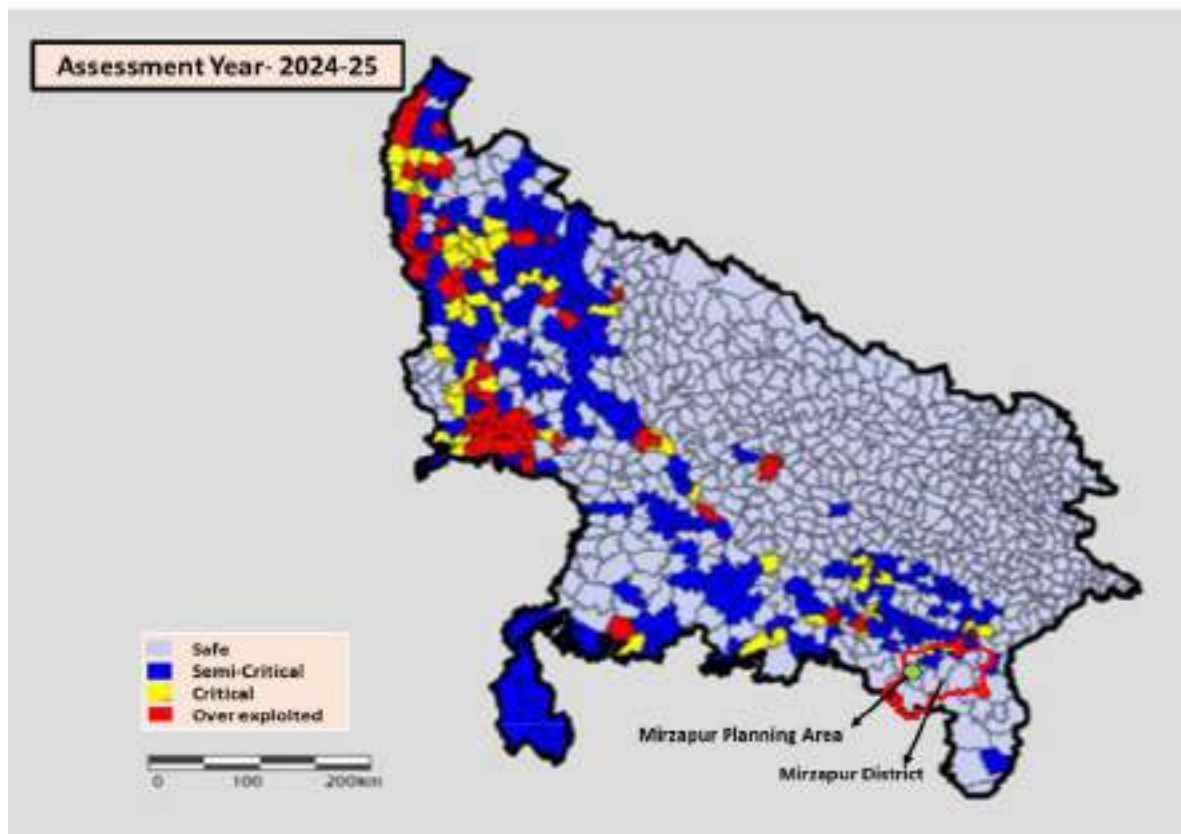
The district benefits from robust natural recharge, yielding a total annual groundwater recharge of 62,569 hectare-meters (ham). After accounting for natural discharges, the net extractable resource stands at 57,060 hams. Current extraction is estimated at 35,266 hams, which is predominantly driven by irrigation (80%), followed by domestic consumption (20%) and negligible industrial demand (<1%). This balance leaves approximately 21,397 ham of groundwater reserves available for future utilization. The region's secure categorization is largely attributed to this favorable ratio of monsoon and non-monsoon recharge against moderate sectoral demand.

According to the Data Computation Methodology used for groundwater assessment, units are categorized based on the percentage of extraction:

Table 4-3: Groundwater Extraction Status Classification Based on Stage of Extraction (%)

Stage of Extraction (%)	Categorization
0 – ≤ 70	Safe
> 70 – ≤ 90	Semi-Critical
> 90 – ≤ 100	Critical
> 100	Over-Exploited

Source: CGWB - Dynamic Ground Water Resources of India, 2024



Map 4-2: Ground water status of Mirzapur District

Source: CGWB - Dynamic Ground Water Resources of India, 2025

Mirzapur's groundwater has remained broadly stable over the decade (refer Figure 4-1). Every year, the Pre-Monsoon (PRM) water levels are deeper than the Post-Monsoon (PTM) levels. Similar values

of PRM levels demonstrate that the annual monsoon consistently recharges the city's aquifers, raising the water table.

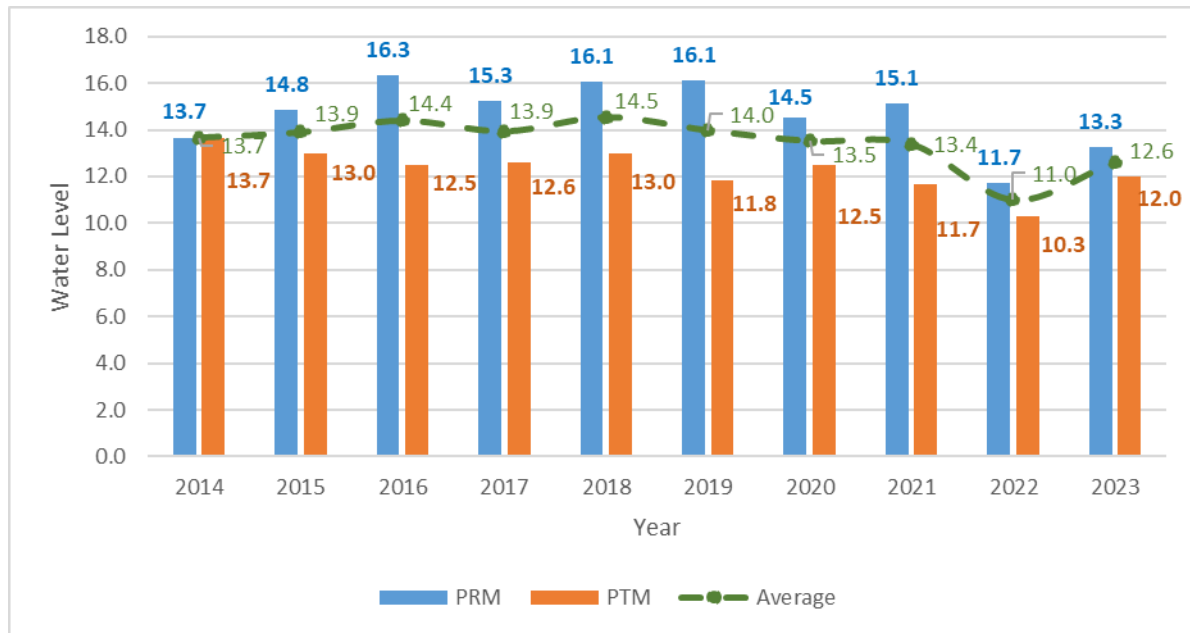


Figure 4-1: Ground Water Level of Mirzapur City (2014-2023)

Source:

https://jjm.up.gov.in/GroundWater/URBAN_RURAL_AREA_WATER_LEVEL_Block_Graph?AreaType=U&DistrictId=525&DistrictName=Mirzapur&P1=City

Groundwater Quality: Groundwater quality in Mirzapur district during 2024–2025, as reported by CGWB, was generally within safe limits. However, there are reports of high concentrations of geogenic iron and arsenic in localized aquifers in the district alongside sporadic heavy metal pollution. Hence, increased efforts are needed to enhance the share of surface water for city water supply.

4.1.3 Water Supply

Mirzapur–Vindhyachal Urban Local Body (ULB) depends on both surface water and groundwater sources to meet the daily water needs of its residents. With a growing population, the demand for water is steadily increasing. Currently the city requires about 48 million liters per day (MLD), as per CPHEEO norms of 135 liters per capita per day (LPCD), with an additional 15% allowance for transmission losses.

The ULB meets this demand through a mix of surface water and groundwater:

Surface Water – 36 MLD

- **River Ganga:** 30 MLD is extracted through intake facilities developed under the AMRUT scheme.
- **Tanda Fall:** 6 MLD is sourced from this local waterfall.
- All surface water is treated at a dedicated Water Treatment Plant (WTP) before entering the distribution network under AMRUT project.

Groundwater – 12 MLD

- Extracted through 80 tube wells operated by the Nagar Palika Parishad.
- This water is treated by chlorination before being supplied to households.

As mentioned in the above section, groundwater is now in the safe category. However, it was previously classified as semi-critical in 2021–2022, which shows that the city has shifted its reliance

toward surface water sources. This transition has reduced stress on aquifers and helped stabilize groundwater levels.

4.1.4 Institutional Mechanism

The following Table 4-4 the various departments responsible for provision of water supply in Mirzapur city.

Table 4-4: Departments responsible for provision of city water supply in Mirzapur

Department	Roles & Responsibilities
Jal Kal Vibhag (Water Works Department)	Responsible for day-to-day operation and maintenance of water supply systems.
U.P. Jal Nigam (Urban Division & Ganga Pollution Control Unit)	Responsible for capital-intensive projects that the Nagar Palika does not have the technical capacity to build
District Urban Development Agency (DUDA) – Mirzapur	Responsible for overseeing the localized implementation of state and central missions (like AMRUT and Swachh Bharat Mission-Urban)

4.2 USED WATER MANAGEMENT

4.2.1 Sewage Generation and Coverage

Mirzapur–Vindhyachal ULB generates an estimated 38 MLD of sewage¹ per day. Out of 75,159 households, approximately 37,579 (50%) are connected to the sewer network. As per Jal Nigam (Urban), the city has a total sewerage network of 275 km, which currently serves about half of the households. In addition to the sewer network, 17 drains are tapped, collectively conveying around 28 MLD of sewage to the existing four sewage treatment plants (STPs). The remaining 9 MLD of untreated sewage flows directly into the River Ganga, while approximately 1 MLD is discharged into nearby ponds (refer to Figure 4-2).

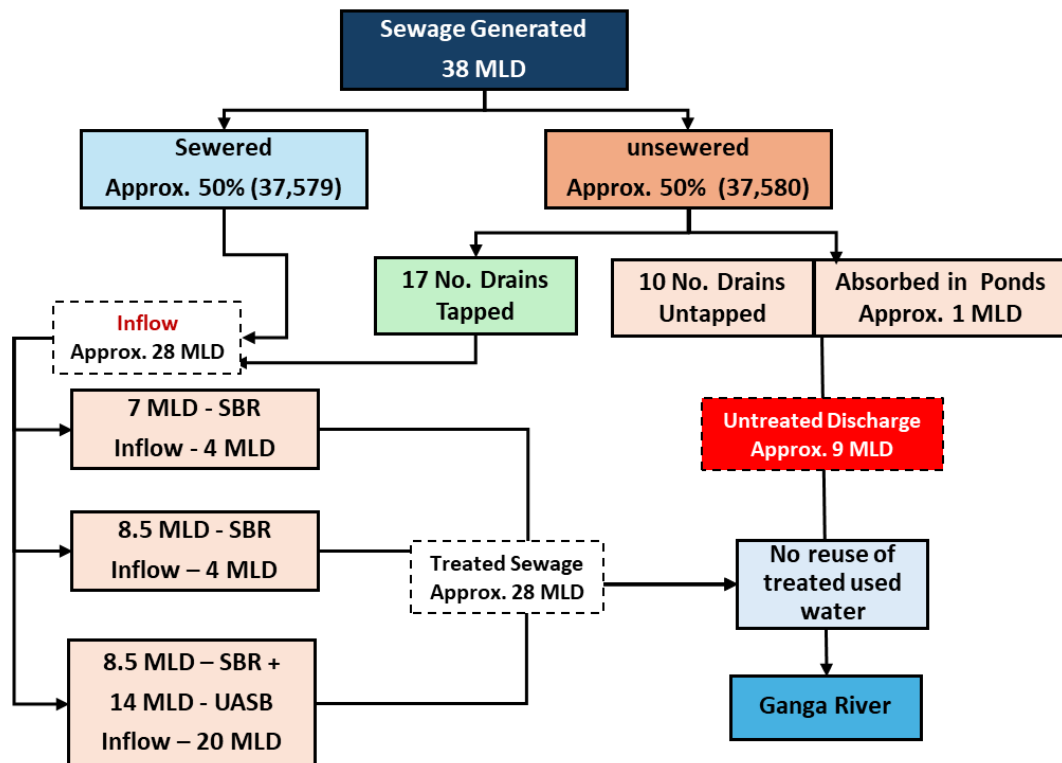


Figure 4-2: Flow chart of liquid waste in Mirzapur- Vindhyachal city

¹ Stakeholder Consultation- Jal Nigam (Urban)

Presently, under the AMRUT project, sewerage lines have been laid across the city, covering approximately 80% of the area. However, around 20% remains uncovered due to various constraints. In addition, most of the remaining drains are planned to be tapped, except for the Khandwa drain, which generates about 6 MLD of sewage and continues to discharge directly into the River Ganga (refer to Figure 4-3).

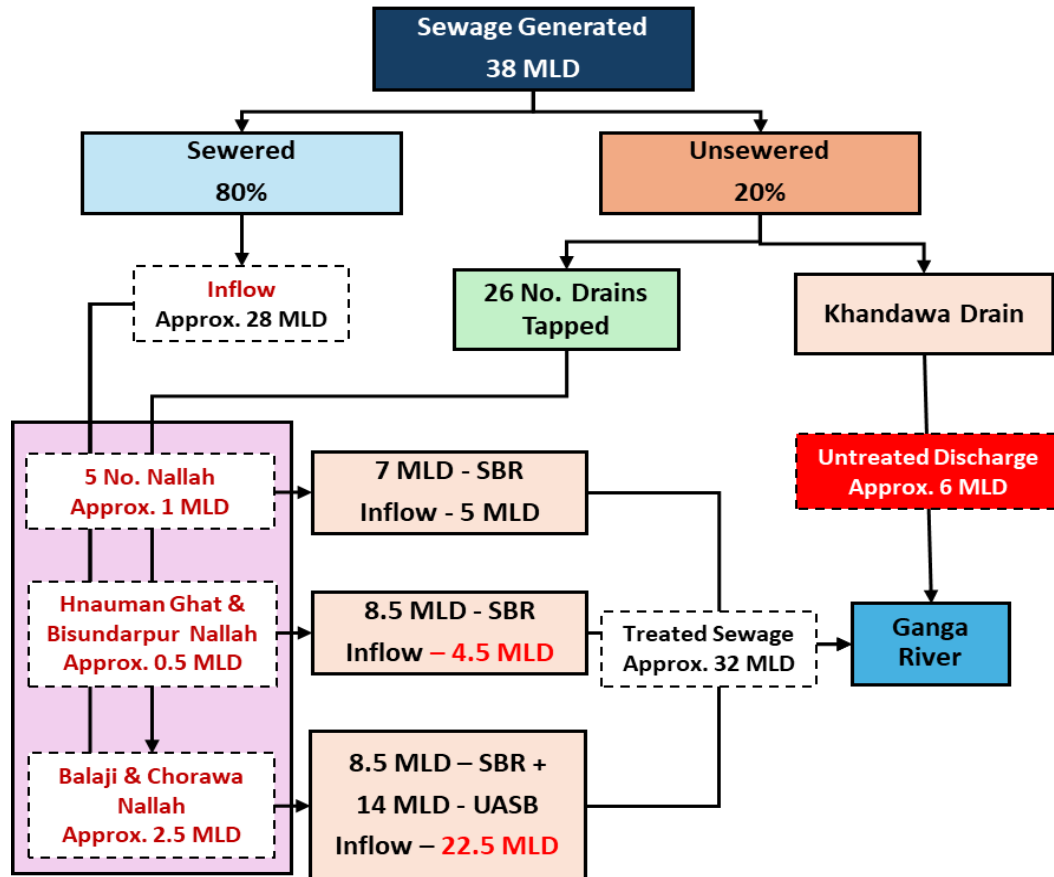


Figure 4-3: Flow chart of liquid waste in Mirzapur- Vindhyachal city after implementation of AMRUT project

Sewage treatment:

Mirzapur–Vindhyachal presently has a total sewage treatment capacity of 38 MLD, serviced through four Sewage Treatment Plants (STPs) Annexure 10. Of these, three STPs operate on Sequencing Batch Reactor (SBR) technology, while one STP is based on Up flow Anaerobic Sludge Blanket (UASB) technology. All four plants are located within the municipal area and collectively cater to seven sewerage zones, which are organized into three catchment areas. Zone 7, representing Vindhyachal, is served by the 7 MLD SBR STP at Vindhyachal. Zones 1 to 5 are connected to the 22.5 MLD STP at Pakka Pokhara, comprising a 14 MLD UASB plant and an 8.5 MLD SBR plant. Zone 6 is serviced by the 8.5 MLD SBR STP at Bisunderpur. In addition to the treatment plants, the system is supported by six pumping stations, which collectively cater to the overall functioning of the STPs and ensure sewage conveyance from different catchment areas. (Refer Map 4-3)

The quality of treated used water from all STPs is within the permissible limits of CPCB and NGT norms, except for the 14 MLD UASB-based STP, where the discharged treated water has BOD levels between 20–30 mg/L, which is not acceptable under NGT standards.

The inflow and outflow details of each STP are presented in the Table 4-5. The corresponding outfall locations are referenced in the showing discharge points.

Table 4-5: Inflow and outflow of STPs

Sl. No	Name & location of STP	Sewerage Zones	Technology	STP Capacity (in MLD)	Pumping Station Details	Inflow (in MLD)	Outflow (in MLD)	Outfall Location
1	8.5 & 14 MLD Pakka Pokhara, Mirzapur	1 to 5	SBR	8.5	1 MPS (22.5 MLD) 1 IPS (11 MLD)	20	19.8	River Ganga through Madho Nallah (Approx. 2 Km length)
2			UASB	14				
3	8.5 MLD Bisunderpur, Mirzapur	6	SBR	8.5	1 MPS (5.6 MLD)	4	3.9	River Ganga through Bisunderpur drain (Approx. 0.05 Km)
4	7 MLD near Hanuman Mandir, Vindhyachal	7	SBR	07	1 MPS (5 MLD) 2 IPS (3 MLD each)	4	3.9	River Ganga through Basvariya drain (Approx. 0.5 Km)
Total				38		28	Approx . 28	

Source: Uttar Pradesh Pey Jal Nigam Department & Site Visit



Picture4-1 : 8.5 MLD & 14 MLD STP at Pakka Pokhara, Mirzapur



Picture4-2 : 8.5 MLD STP at Bisunderpur, Mirzapur



Picture4-3 : 7 MLD STP near Hanuman Mandir, Vindhyachal

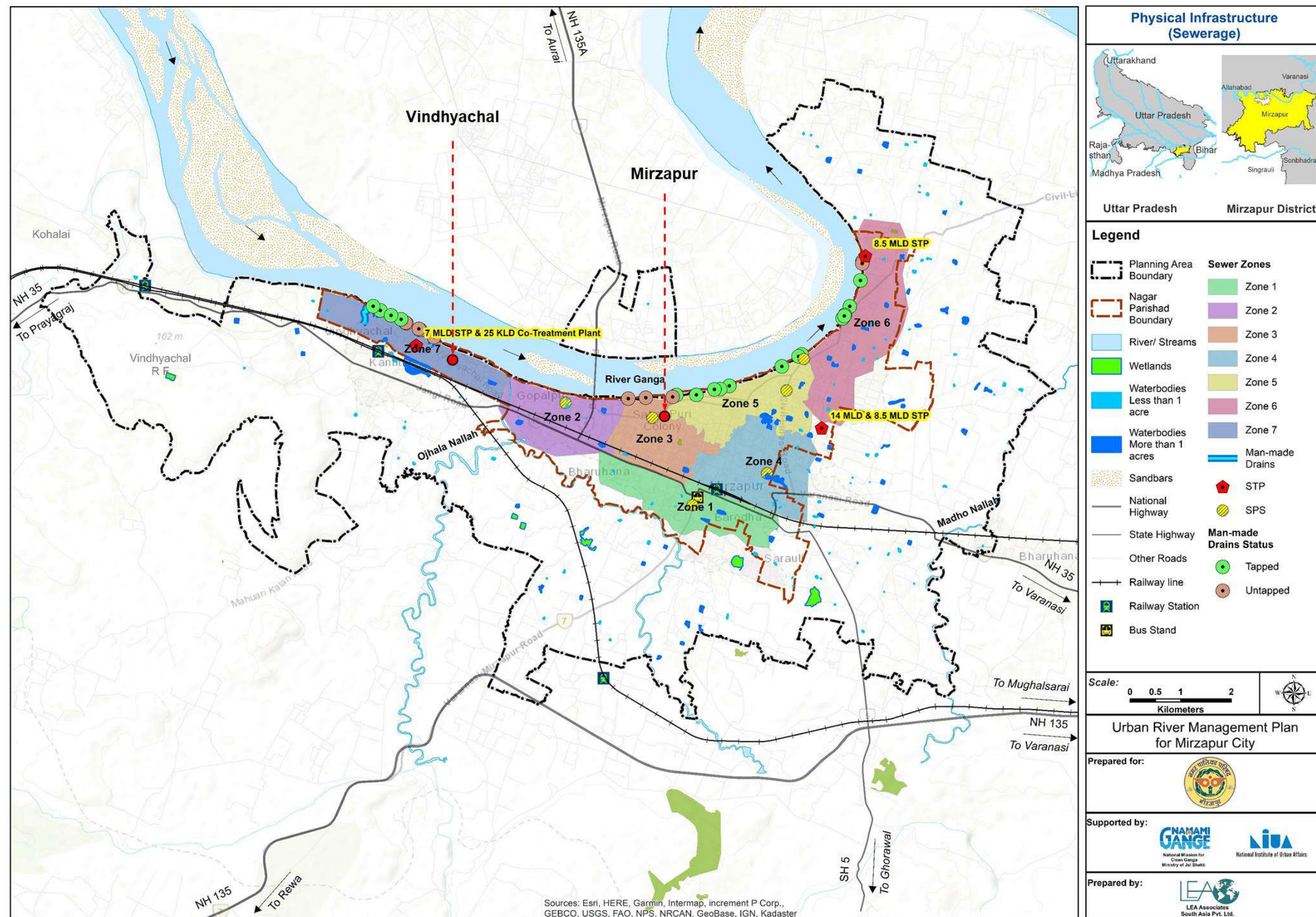
At present, there is no reuse of treated used water from these facilities. The treated used water is discharged into the River Ganga through nallahs, with discharge points shown in the Map 4-3.

As highlighted in Section 2.2.2 on population projections, sewage generation in Mirzapur is expected to rise to approximately 57.5 MLD by 2041. This would require additional treatment capacity of 19.6 MLD (Refer Table 4-6) and expansion of sewerage networks to the remaining part of the city.

Table 4-6: Sewage Generation & Treatment Capacity of STPs in Mirzapur

Sl. No.	Sewerage Zone	2025	2030	2035	2041
1	Vindhyachal Zone Sewage generation	4.8 MLD	5.3 MLD	5.9 MLD	7.0 MLD
	Existing capacity at Vindhyachal Zone	7 MLD	7 MLD	7 MLD	7 MLD
	Gap	- 2 MLD	-	-	-
2	Mirzapur Zone	28.5 MLD	31.7 MLD	35.2 MLD	42.1 MLD
	Additional flow in the Nala	8.5 MLD	8.5 MLD	8.5 MLD	8.5 MLD
	Total	37.0 MLD	42.2 MLD	43.7 MLD	50.5 MLD
	Existing capacity at Mirzapur Zone	31 MLD	-	-	-
	Gap	6.0 MLD	9.2 MLD	12.7 MLD	19.6 MLD

Source: Jal Nigam (Urban) 2025 & Consultant Analysis



Source: Mirzapur-Vindhyachal Masterplan 2031, Jal Nigam 2025 (Urban) Consultant Analysis, OSM

Map 4-3: Physical Infrastructure (Sewerage), Mirzapur

4.2.2 On site sanitation

As stated in the previous section, Mirzapur–Vindhyachal ULB generates about 102.9 kLD of faecal sludge, with nearly 50% (37,580) of household's dependent on septic tanks. The collection and conveyance of faecal sludge is managed by the Nagar Palika Parishad (NPP) Mirzapur through a fleet of five de-sludging vehicles, of which four government-owned vehicles are registered under NPP and one private vehicle operates at an average cost of Rs.2,500 per trip. The capacities of the registered de-sludging vehicles are as follows:

- 2 vehicles with a capacity of 5,000 L each
- 1 vehicle with a capacity of 3,000 L
- 1 vehicle with a capacity of 1,000 L

A 25 kLD co-treatment plant has been established at the 7 MLD STP site at Vindhyachal, but it remains underutilized, operating at only 16–20% of its capacity, as only 1–2 trips discharge into the plant daily. Septic tanks are not desludged every 3 years as per prescribed standards, and septage is often disposed directly into manholes or open drains instead of being conveyed to the treatment facility.

With the implementation of the AMRUT sewerage project, faecal sludge generation is expected to reduce to about 41.1 kLD which is approx. 15,032 (20%) of households. However, de sludging vehicles in Mirzapur often discharge faecal sludge directly into sewer manholes instead of transporting it to the co treatment facility at Vindhyachal, creating a service gap with no GPS tracking & monitoring system. In addition there is a gap of 2 desludging vehicles of 3000 L with respect to the 41.1 kLD faecal sludge generation. These practices highlight inefficiencies in collection, conveyance, and treatment, resulting in poor utilization of existing infrastructure.



Picture 4-4 : 24 kLD co-treatment facility at 7MLD STP near Hanuman Mandir, Vindhyachal



Picture 4-5 : Registered de-sludging vehicle and emptying faecal sludge into manhole at Lal Diggi instead of Co-treatment facility

4.2.3 Used water in drains

The city has a total of 27 storm water drains, of which 17 are tapped and 10 remain untapped. During the lean season, used water is diverted to the various STPs as follows:

- **9 drains** are connected to the combined STPs of **14 MLD (UASB)** and **8.5 MLD (SBR)** at Pakka Pokhara.
- **9 drains** are connected to the **8.5 MLD SBR STP** at Bisunderpur.
- **9 drains** are connected to the **7 MLD SBR STP** at Vindhyachal.

The **untapped drains discharge approximately 9 MLD** of used water directly into the River Ganga. A detailed list of drains, along with their tapped/untapped status and corresponding discharge, is provided in Annexure 11. To assess discharge quality, dissolved oxygen (DO) levels were sampled from five representative drains. The results are presented in the table below.

Table 4-7: DO levels of Storm Water Drains

Sl. No	Name of Drain	Tapped / Untapped	DO Level – Locations	Maximum value (mg/L)	Minimum value (mg/L)
1	Bisundarpur Drain	Untapped	25.177330, 82.597467	1.5	1.1
2	Hanuman ghat Drain	Untapped	25.175277, 82.597534	1.1	1.0
3	Diwan ghat new Drain	Untapped	25.165087, 82.508303	4.3	4.2
4	Khandawa Drain	Tapped	25.150805, 82.554768	1.0	0.6
5	Basvariya Drain	Tapped	25.162670, 82.513263	2.9	2.8

Source: Site Observations

The dissolved oxygen (DO) levels in all drains were found to be below the CPCB permissible limit of 6 mg/L required for healthy aquatic ecosystems. Except for the Diwan Ghat New Drain, which recorded DO levels above 4 mg/L, all other drains showed very low DO values below 3 mg/L, with the lowest recorded at Khandwa Drain (0.6 mg/L). These results indicate poor water quality and highlight the urgent need for improved used water management and treatment interventions.



Picture 4-6: Outfall of Basvariya – Khandawa - Diwan ghat - Hanuman ghat drains

In Mirzapur, most drains are covered, while a few open stretches before interception points allow solid waste to accumulate. At these points, screen bars are installed to separate waste from used water. The waste is manually removed and placed outside the drain, after which the Nagar Palika Parishad collects and transports it to the trenching ground for final disposal. This process helps prevent blockages and ensures smoother used water conveyance.

4.2.4 Industrial effluent

As per the site observations, dyeing is often carried out as a decentralized, cottage-scale activity embedded within residential wards and mixed-use neighborhoods. Numerous micro-enterprises and family-run units undertake job-work for local weavers, carpet manufacturers, and garment retailers, dyeing wool, cotton yarn, and silk to specific color palettes. (Picture 4-7) The list of polluting industries is at Annexure 12.

These units collectively generate approx. 2 MLD of toxic effluents daily. The used water is characterized by high Chemical Oxygen Demand (COD), synthetic dyes, and heavy metals, which can't handle these concentrated industrial discharges in the existing 7 MLD SBR-based STP, designed for domestic sewage, these effluents flow through the sewer network to the STP inlet chamber; however, at discharge timings, the inlet is blocked and the effluents are bypassed directly to the outlet. This practice results in untreated used water being released into drains and ultimately into the River Ganga at Vindhyachal. (Refer Picture 4-8)



Picture 4-7: Dyed stoles and chunris at shops adjacent to Vindhya Vasini Temple



Picture 4-8: Dyeing waste is received at 7 MLD STP inlet chamber



Picture 4-9: Drain carrying dye effluents directly discharges to the outlet drain of 7MLD STP

4.2.5 Institutional Mechanism

The following Table 4-8 presents the various departments responsible for provision of used water management in Mirzapur city.

Table 4-8: Departments responsible for provision of city used water management in Mirzapur

Department	Roles and Responsibility
U.P. Jal Nigam (Urban Division & Ganga Pollution Control Unit)	Responsible for the planning, design and execution of capital-intensive sewerage infrastructure. This includes Interception & Diversion (I&D) networks, pumping stations, and Sewage Treatment Plants (STPs) under schemes like Namami Gange.
Jal Kal Vibhag & Health Department (Nagar Palika Parishad Mirzapur)	Responsible for the day-to-day operation and maintenance of the municipal sewer network, localized storm water drainage, open drain desilting, and municipal solid waste clearing from drains.
District Urban Development Agency (DUDA) – Mirzapur	Responsible for overseeing the localized implementation and fund channelization of state and central sanitation missions (such as Swachh Bharat Mission-Urban and AMRUT) specifically concerning decentralized septage and used water management.

Department	Roles and Responsibility
Uttar Pradesh Pollution Control Board (UPPCB) (Regional Office)	Responsible for regulatory oversight. This includes enforcing discharge standards and monitoring the effluent quality from municipal STPs and industrial units before used water reaches local water bodies like the Ganga or the Ojhala River.

4.3 SOLID WASTE MANAGEMENT

4.3.1 Waste generation, collection and disposal

Mirzapur city generates an approximately 110.4 tonnes of solid waste daily with the following composition:

- Wet waste - 59.5% (65.6 TPD)
- Dry waste - 40% (44.1 TPD)
- Domestic Hazardous and Sanitary waste - 0.5% (0.5 TPD)

The city has implemented a two-bin segregation initiative but participation remains limited, with only 17% of households actively segregating waste at source. Door-to-door collection services operate across approximately 70% of households spanning 38 wards, supported by a fleet of 507 collection vehicles that include 38 e-rickshaws, 125 tricycles, 330 hand carts and various other vehicles. The collected waste is aggregated at 10 transfer stations, only one station is equipped with a proper shed, while the remaining nine stations are roadside facilities with elevated pavements.

The processing infrastructure in Mirzapur includes six Material Recovery Facilities (MRFs) with a cumulative handling capacity of 30 TPD for dry waste, leaving a gap of approximately 14 TPD. For wet and organic waste management, the city has established two pit composting plants of approximately 43 TPD capacity resulting in nearly 23 TPD of unmanaged wet waste. A 5 TPD Construction and Demolition (C&D) waste processing plant is operational, although current generation is only about 1 TPD. There is no dedicated processing system for domestic, hazardous and sanitary waste, which continues to be transported and disposed of at the trenching ground.

The city's designated trenching ground covers an area of 12 acres and is located near Karanpur Chauki Tand Gaon, approximately 9 km outside the Mirzapur city boundary.

Solid Waste Dumping in Nallas & Along the Riverbed: A broader gap in solid waste collection and disposal is evident across the city, with both fresh and legacy waste observed along drains and on the banks of the River Ganga. Site assessments in Mirzapur have identified two distinct categories of waste hotspots. The first consists of legacy waste embedded along slopes behind residential houses, where refuse has mixed with soil and built edges over time, requiring careful manual removal to prevent slope destabilization. The second includes ghat-side accumulations of loose mixed waste, estimated at 2–3 tonnes, concentrated in high-footfall visitor areas at major ghats. This uncontrolled presence of waste is a critical concern, as it eventually finds its way into the river, worsening pollution levels.



Picture 4-10: Solid waste accumulation along drains - Basvariya and Khandwa drains



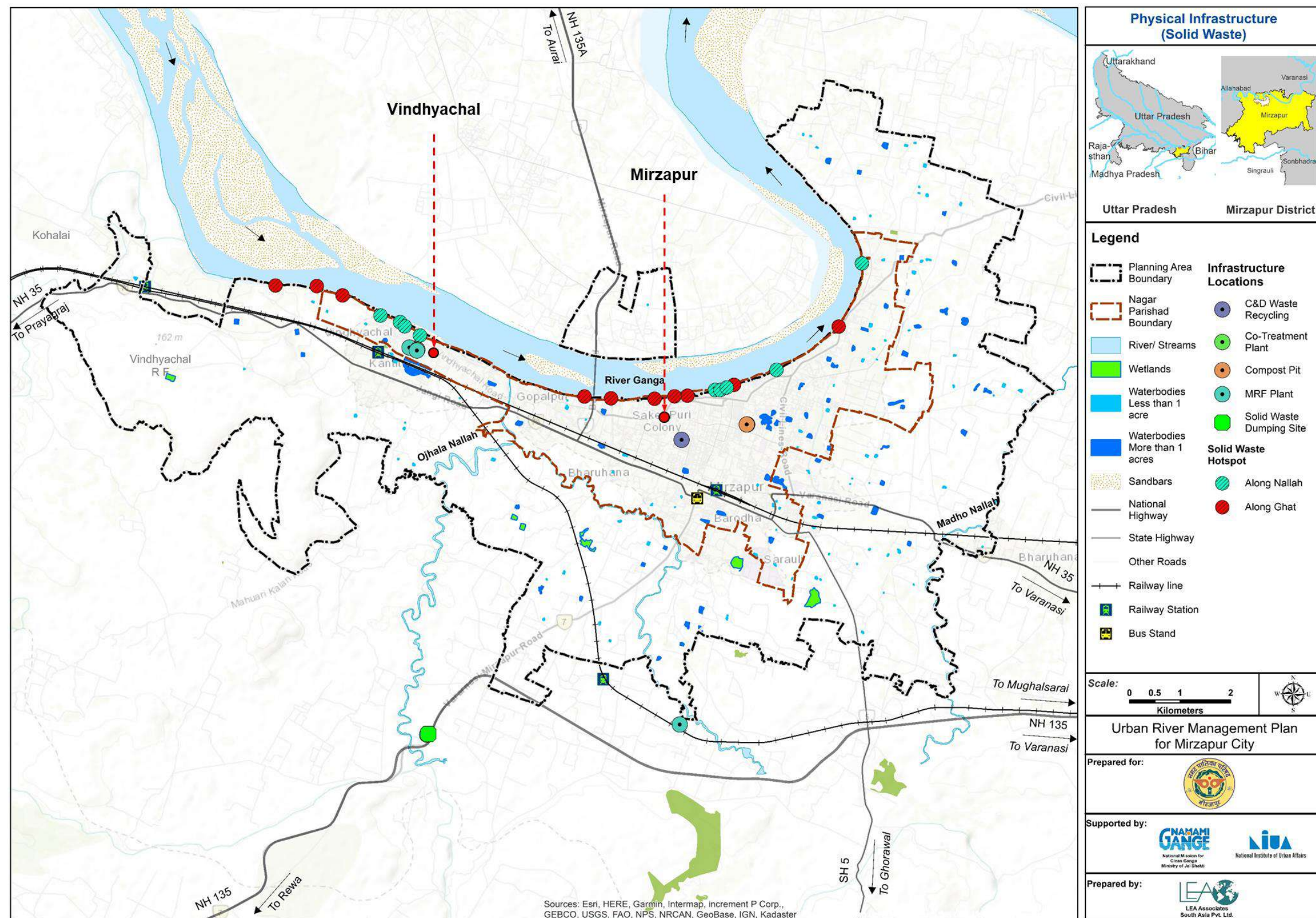
Picture 4-11: Solid waste accumulation along Ganga Riverbank - Pucca ghat and Badla ghat

4.3.2 Institutional Framework for Service Delivery

The following Table 4-9 presents the various departments responsible for provision of solid waste management in Mirzapur city.

Table 4-9: Departments responsible for provision of city solid waste management in Mirzapur

Sl. No.	Department	Roles & Responsibilities
1	Health & Sanitation Department (Nagar Palika Parishad Mirzapur)	The primary urban local body responsible for daily street sweeping, door-to-door waste collection, transportation of municipal solid waste (MSW), and maintenance of secondary collection bins, transfer stations and processing facilities.
2	District Urban Development Agency (DUDA) – Mirzapur	Responsible for the local implementation, monitoring, and fund channelization for state and central missions like Swachh Bharat Mission-Urban (SBM-U). This includes funding for SWM vehicles, infrastructure, and overseeing IEC (Information, Education, and Communication) campaigns.
3	Private Concessionaires / Empaneled Agencies (Operating under PPP with the Municipality)	Contracted private entities responsible for specialized operational tasks. This often includes executing mechanized door-to-door collection, operating Material Recovery Facilities (MRFs), and managing waste processing or legacy waste biomining sites.
4	Uttar Pradesh Pollution Control Board (UPPCB) (Regional Office)	The regulatory authority responsible for enforcing the Solid Waste Management Rules, 2016. They issue authorizations for setting up waste processing/disposal facilities and monitor groundwater and air quality around dumpsites to prevent environmental contamination.



Source: Mirzapur-Vindhyachal Masterplan 2031, Mirzapur Nagar Palika Parishad, Consultant Analysis, OSM

Map 4-4: Physical Infrastructure (Solid Waste), Mirzapur

5 SWOC ANALYSIS AND URM INDEXING OF THE CITY

5.1 SWOC ANALYSIS

Based on the baseline assessment of Mirzapur city, various issues and gaps have been identified. Based on this, a SWOC analysis has been done and presented below:

Objectives	Focus Area	Strength	Weakness	Opportunities	Challenges
Ensure effective regulation of activities in floodplain	Floodplains	Provision of 200 m greenbelt provision, building height restrictions and conservation measures to regulate floodplain use	Floodplain mapping and monitoring not yet initiated.	-	erosion, widening, shifting channels) threatens ghats, religious sites and built-up areas
Keep the river free from pollution	Water Supply	-	Groundwater dependence exceeds recharge capacity	Groundwater recharge measures can restore water balance	-
	Sewerage	sewage network covering 275 km and 37,521 household	7.23 MLD of untreated sewage continues to enter the Ganga through city drains; 14 MLD UASB-based STP frequently fails to meet discharge standards	-	-
	Solid waste	-	14.1 TPD dry waste and 23 TPD wet waste remain unprocessed daily; 1,62,854 tonnes of legacy waste is piled up near ghats; sewage discharge, solid waste dumping, cattle bathing and open cremations along ghats continue to degrade water quality	Adoption of circular economy approaches through investments in solid waste processing and legacy waste	-

Draft Urban River Management Plan of Mirzapur

Objectives	Focus Area	Strength	Weakness	Opportunities	Challenges
Rejuvenate Waterbodies and Wetlands	Water bodies	-	-	-	-
Enhance the riparian buffer along river banks	Riparian buffer	-	3.1 km vegetated cover exists along a 17 km river edge, with most ghats directly exposed to erosion and pollution	-	-
Adopt increased reuse of treated used water	Reuse of treated water	-	-	reuse of treated used water in agriculture, urban parks, industrial areas and transport corridors within 3 km of STPs	Public resistance and perception barriers to reuse of treated used water hinder adoption in agriculture and urban applications
Ensure maximum quality return flow from the city into the river	Return flow	-	-	-	-
Develop eco-friendly riverfront projects	Eco-friendly riverfront	33 ghats, attracting lakhs of pilgrims annually and sustaining informal livelihoods	-	Development of eco-friendly riverfront projects at underutilized ghats (e.g., Nar Ghat, smaller kutcha ghats)	-
Leverage on the economic potential of the river	Economic potential	Festivals (Kajri Mahotsav, Chhath Puja, Ganga Dussehra) strengthen the city's tourism economy and community participation	-	Leveraging religious tourism at Vindhyavasini Temple and festivals to formalize livelihoods into cooperatives; Integration of water transport with tourism by creating jetties, safety infrastructure and connecting pilgrimage circuits	-
Inculcate river- sensitive behaviour	River- sensitive behaviour	-	Lack of structured, long-term citizen	-	Unregulated tourism and mass religious

Objectives	Focus Area	Strength	Weakness	Opportunities	Challenges
among citizens in river management activities			engagement mechanisms beyond one-time cultural or awareness events; Lack of integration between river management and municipal revenue systems		gatherings increase solid waste, sanitation pressure and ecological stress

5.2 URM INDEXING OF THE CITY

URMP framework provides a clear indexing/ scoring mechanism to monitor progress of project implementation recommended under URMP vis-à-vis its objectives. The implementation of URMP is monitored through 10 indicators, one for each objective of URMP framework. The URMP Index is measured on a scale of one to five and is useful to paint a snapshot of the situation, which can be used to monitor the implementation of URMP and develop overall strategies and policies for enhancement.

In order to understand the present status of water resources in the city, an assessment has been made using the URMP Index. With a score of 2.1, Mirzapur is at elementary level of urban river management. This score shall improve upon implementation of proposed interventions against each objective. The figure below shows the current status of the city against each of the objectives of urban river management.

Table 5-1: Prioritization Matrix

S.N.	URMP Objective	Current status	Priority in URMP	Remarks	URM _{Index} Score
1	Regulation of activities in floodplain		Very High	200m green belt is demarcated in the master plan 2031 and partially protected. - No demarcation of 100 years and 25 years flood lines in the master plan	1/5
2	Pollution free River		Very High	- Mirzapur faces significant river pollution from untreated sewage and Solid waste dumping. - Water quality parameters is higher in downstream compared with upstream.	1/5
3	Rejuvenate Water bodies and wetlands		Very High	There are Nine water bodies notified in the planning area which are more than 1 acre but seven dried up, no functional urban water bodies available.	1/5
4	Enhance Riparian buffer		High	- Riparian buffers fragmented; only 3.1 km vegetated along 17 km of riverbank. - Northern bank lacks vegetation; urban and ghat activities increase erosion and pollution.	1/5
5	Increased use of treated wastewater		Low	No current reuse of treated waste water potential avenues identified.	1/5
6	Max. good quality return flow		Very High	No scientific estimates available for the city	-
7	Eco friendly Riverfront projects		High	33 ghats present; 10 pakka and 23 kutcha; cultural events attract pilgrims. - Solid waste dumping, sewage discharge, poor sanitation infrastructure common issues. - Smaller ghats poorly maintained and infrastructure lacking.	2/5
8	Leveraging on economic potential of the river	★★	Low	- The river supports key local economic activities including religious tourism and festivals support (Informal seasonal trade). - Water transport operates short-distance connectivity and limited agricultural along the river within urban stretch.	5/5
9	River Sensitive behaviour among citizens	★	Very High	- Progress with schools, NGOs and campaigns but limited river-centric participation. - Most efforts short-term event-based lacking continuous behavioral impact.	3/5
10	Engage citizens in River Management Activities	★	High	Participation in river management remains limited; structured engagement needed.	4/5

★ Acceptable ★★ Excellent  Needs Improvement

 Very High  High  Low

6. URMP VISION FOR THE CITY AND ZONING

Vision Statement

Resilient Mirzapur – Restoring the Ganga and Streams for Flood Safety, Clean Water, Ecology and Sustainable Livelihoods

6.1 URMP VISION FOR MIRZAPUR

The Urban River Management Plan (URMP) envisions Mirzapur as a resilient river city, River Ganga and streams are restored as living systems that ensure flood safety, clean water, ecological health and sustainable livelihoods. Once central to agriculture and culture, these rivers now face pressures from urbanization, sewage inflows and degraded floodplains.

The plan repositions them as urban assets, proposing blue-green infrastructure and nature-based solutions—such as riparian buffer restoration, eco-ghats, sponge parks, floating trash barriers and bio-CNG recovery. By integrating river management with land use planning, Mirzapur aims to reduce disaster risks, strengthen community participation and secure the long-term sustainability of its rivers.

Riverfront Zoning – NPP

River Ganga flow through open floodplains, agricultural land, dense settlements, ghats, drains and industrial sites.

Based on the river characteristics and nature of river city interaction the entire stretch of the two rivers along the NPP, Mirzapur limits has been divided into two stretches as stated below. This zoning approach ensures interventions are location-specific, flood-safe and socially appropriate, rather than applying a uniform design across the entire river stretch.

Stretch- 1	Shakti Tirtha Zone
Location	Vindhyachal Ghat to Ramgaya Ghat (~2.0 km)
Theme - Sacred Pilgrimage	The spiritual heart of the corridor. This stretch anchors the Trikon Parikrama circuit of Maa Vindhyavasini, Ashtabhuj and Kali Khoh temples. The riverfront becomes a dignified pilgrimage processional — quiet, shaded and free of commercial clutter.
Focus	Shakti Peeth, Trikon Parikrama, Navaratri hub, Ganga Aarti
Key interventions	Restore and beautify Ramgaya Ghat with sandstone paving and traditional deep-lamp niches Create a 3 m wide shaded colonnade from Vindhyachal temple steps to Ramgaya Ghat Establish a dedicated Aarti amphitheatre with tiered seating for 2,000 pilgrims Intercept and treat all drains in this stretch (STP integration under Namami Gange) Prohibit motorised traffic on the riverside processional path; allow cycle-rickshaws only Install interpretive panels on the Markandeya Purana mythology in Hindi and English
Stretch-2	Vanam Green Buffer
Location	Ramgaya Ghat to Ojhla nallah confluence (~1.5 km)
Theme - Ecology & Forest Fringe	A transitional ecological spine separating the pilgrimage core from the urban town. The Ojhla river confluence is a biodiversity hotspot — this stretch doubles as a green lung and urban nature reserve with a restored riparian forest.
Focus	Riparian buffer, Ojhla confluence, Bird watching, Flood resilience
Key interventions	Plant 5,000 native riparian species (Arjun, Jamun, Mahua, Sacred Fig) along the bank Construct a 1.5 km elevated boardwalk over the floodplain for birdwatching and walking Restore the Ojhla confluence as a wetland node with reed beds to improve DO levels Install real-time water quality monitoring buoys (DO, BOD, ammonia) at the confluence Create a community nursery managed by local self-help groups for plant propagation Demarcate and enforce a 30 m no-construction buffer on both banks of Ojhla
Stretch- 3	Ghat Heritage Precinct
Location	Pakka Ghat to Chaube Ghat (~2.5 km)

Theme - Heritage & Memory	The historic core — Pakka Ghat (1885), Company Ghat and Chaube Ghat form an extraordinary ensemble of 19th-century civic and trading heritage. Chaube Ghat is Mirzapur's Manikarnika — the antyesti (cremation) ghat — requiring sensitive, dignified design treatment
Focus	19th-century ghats, ASI precinct, Antim Samskara, Colonial-era lanes
Key interventions	Prepare a Heritage Impact Assessment under ASI guidelines before any intervention Restore Pakka Ghat's original sandstone treads, balustrades and stepped geometry Illuminate Fateha and Company Ghats with warm amber LED bollards for evening ambience Create a 'Mirzapur Memory Trail' — illustrated timeline of the trading era on ghat walls Designate Chaube Ghat as a solemn zone with screening vegetation and limited access signage Establish a heritage walk circuit linking all five ghats with QR-code cultural guides
Stretch- 4	Ganga Promenade
Location	Bariya ghat to Sundar Ghat (2 km)
Theme	Urban Civic water front
Focus	Daily recreation, Inclusive design, Food Plaza, Riverwalk
Key interventions	Build a 6 m wide continuous paved promenade with shaded pergolas every 100 m Install children's play areas with flood-resilient rubber-surface equipment at Badali Ghat Create an open-air riverside gym (outdoor fitness station) at Sundar Ghat Develop a curated food and chai kiosk row behind the promenade with uniform design Add universal access ramps to all ghats in this stretch (wheelchair and stroller accessible) Install a public amphitheatre at Babaji Ghat for kajari and birha folk music performance
Stretch-5	Carpet and Craft bazar
Location	Dhauili ghat to Trilochan ghat (2 km)
Theme	Living Craft and economy
Focus	Carpet weaving, Brassware, GI products, Artisan marke
Key interventions	Develop a Hastkala Bazaar — open-air craft market with permanent vendor stalls at Trilochan Ghat Create a 'Mirzapur Weaves' live demonstration centre where visitors can watch carpet knotting Build shared artisan workspace (looms, metal casting shed) with river-facing open frontage Establish a GI certification and direct-to-buyer sales node to improve artisan incomes Install interpretive murals in the ghat lanes celebrating the carpet and brassware heritage Link this stretch to the NH-19 bypass with a dedicated cargo-free artisan lane
Stretch-6	Mahotsav Event Grounds
Location	Trilochan Ghat to Eastern Boundary (~2.0 km)
Theme - Festival & Cultural Performance	The festival terminus of the corridor — a large-format events and cultural ground anchored at the eastern end of town. Designed to absorb the enormous pilgrim and tourist influx during Navaratri, Chhath Puja and Makar Sankranti without straining the sacred western stretches
Focus	Navaratri mela, Chhath Puja, Temporary structures, Event management
Key interventions	Develop a permanent festival ground with a capacity of 50,000 people with flexible pavilions Create a floating ghat platform for Chhath Puja arghya that rises and falls with flood levels Install permanent water and sanitation infrastructure (50 toilets, 10 bathing enclosures) Establish a Mirzapur Cultural Centre with a 500-seat indoor performance space Design a night-lighting rig for river illumination during Diwali and Navaratri Connect to town by a dedicated shuttle circuit and a riverboat jetty for water taxis

7. URMP INTERVENTIONS

7.1 OBJECTIVE 1: REGULATION OF ACTIVITIES IN FLOODPLAIN

Objective 1 strengthens the Mirzapur-Vindhyachal Draft Master Plan 2031 by integrating flood-resilient land use, river-centric planning and groundwater sustainability. Key measures include delineation of flood lines, updated building bye-laws aligned with floodplain zoning guidelines (2025), demarcation of riparian buffers and ecological corridors. Together, these interventions reduce disaster risks, safeguard communities and infrastructure, conserve water systems and ensure balanced, climate-resilient urban growth.

7.1.1 Recommendation 1: Inclusion of flood-lines in the Mirzapur - Vindhyachal Draft Master Plan – 2031

The 25-year and 100-year flood lines along River Ganga within the Mirzapur–Vindhyachal Planning Area has not been demarcated, by the Uttar Pradesh Irrigation Department. The demarcation of flood lines is a critical measure for enhancing urban resilience and safeguarding environmental integrity. These flood lines will provide a foundation for identifying vulnerable zones and regulating development activities in flood plain.

1. Floodplain Demarcation and Regulation-The Master Plan should integrate flood-lines as per “Technical Guidelines on Floodplain Zoning, 2025” to safeguard the city against recurring floods.

- **Flood-line inclusion:** Incorporate *1 in 25-year* and *1 in 100-year flood lines* as per the Ganga Notification into the land use plan to clearly define river zones and active floodplains.
- **Technical guidelines:** Delineate the *1 in 5-year flood return period* following Central Water Commission guidelines to identify frequently inundated areas.
- **Development control:** Enforce strict regulations on land use within flood zones to prevent encroachment and minimize disaster risks.

2. Riparian Buffer and Ecological Safeguards-Maintaining ecological balance along the Ganga and its tributaries is essential for long-term sustainability. The Master Plan should highlight riparian buffers to protect river health.

- **Riparian buffer zones:** Establish buffer zones along rivers and streams to reduce erosion, filter pollutants and preserve biodiversity.
- **Stream regulation:** Map all streams in the planning area and regulate development around them to prevent ecological degradation.

7.1.2 Recommendation 2: Suggestions and recommendations for the Mirzapur-Vindhyachal Draft Master Plan 2031

The current vision outlined in the Master Plan provides preliminary buffer provisions for rivers, drains and water bodies; however, these measures require strengthening through scientific assessments and regulatory frameworks. Integrating hydrological studies, flood-line mapping and ecological corridor identification will ensure that the Master Plan not only safeguards against flood risks but also promotes ecological resilience and balanced urban growth.

Table 7-1: Suggestions and recommendations for the Mirzapur- Vindhyachal Draft Master Plan 2031

Sl. no.	Aspects	Section Name & Reference in Master Plan	Current Vision	Recommendation	Rationale/Justification
1	Floodplain Zoning & River Buffers	Chapter 10: Section 10.3.6 (Park/Open Area/Green Belt) & Section 10.3.9 (River-centric planning)	• Ganga River: Proposes a 200-meter green buffer where new construction is prohibited and building height is restricted to 17.5m • Minor Rivers & Drains: Proposes a 6-meter green buffer. • Lakes/Reservoirs: Proposes a 10-meter green strip for water bodies larger than 1 acre	• Integrate baseline hydrological assessment covering flood lines for 5, 25 and 100-year return periods. • Adopt Flood Plain Zoning guidelines (MoJS, July 2025 – Sec. 7, para 7.2, pp. 23–24). • Incorporate GIS-based flood hazard mapping. • Define regulatory zones (prohibited, restricted, regulated use) within floodplains. • Explicitly map ecological and wildlife corridors connecting forests, wetlands and river systems, integrating them into the zoning framework	Provides scientific delineation of flood-prone areas along Rivers and streams.
2	Riparian Buffer along river/streams	Chapter 10: Section 10.3.6 (Park/Open Area/Green Belt)	200-meter green belt along the river and 6 meters along streams are mentioned	• No multi-zone riparian buffer or bio-engineering guidance • 30 meters of riparian buffer should be mandate along the River Ganga and streams • Integrate Regional basin/watershed level Ecologically Sensitive Zones (ESZ) into the Master Plan	Introduce multi-zone riparian buffers and treat feeder drains as extensions of floodplains
3	Protection of Wetlands & Waterbodies	Ch. 10 – Section 10.3.9 Concept of River-Centric Urban Planning	Lakes/Reservoirs: Proposes a 10-meter green strip for water bodies larger than 1 acre	• Waterbodies and wetlands shall be considered as eco-sensitive zone • Development of baseline data and catchment integration study	Conduct baseline inventory, hydrological & ecological assessment of wetlands and waterbodies; integrate findings into zoning
4	Monitoring & Adaptive Flood Management	-	No floodplain-specific monitoring framework	• Establish GIS-based floodplain monitoring, 5-year review of flood lines and zoning • Mandate Zero Liquid Discharge (ZLD) for industries and reuse treated used water	Adaptive, climate-resilient river management

Sl. no.	Aspects	Section Name & Reference in Master Plan	Current Vision	Recommendation	Rationale/Justification
5	Rainwater Harvesting	Chapter 10: Section 10.4.4 (Rainwater Harvesting Policy)	• Mandates pits/open ponds for RWH in plots >300 sqm and group housing. • Mandates 5% land allocation for recharge ponds in schemes >20 acres. • Proposes "trench drains" on roads (Section 9.6).	• Mandate that at least 30% of each plot in large developments remains open and permeable (unpaved). • Transition to a balanced model using both surface and groundwater to reduce over-reliance on tube wells	Current RWH policies focus on structural pits but miss the ecological need to keep large tracts of soil unpaved for natural percolation, which is more effective for preventing urban runoff and recharging aquifers.

7.2 OBJECTIVE 2 INTERVENTIONS TO KEEP RIVER FREE FROM POLLUTION

Objective 2 interventions aim to prevent liquid and solid waste pollution in River Ganga and nallahs. In Mirzapur the untreated sewage discharged through minor nallah, is the main source of liquid waste, while indiscriminate dumping of municipal solid waste into streams, nallah is the major source of solid waste pollution. These practices degrade water quality and river ecology, thus requiring intervention measures such as sewage nallah water interception, treatment and improved solid waste management practices.

7.2.1 Intervention 1: Fulfilling the gap in sewage treatment capacity by constructing a new 20 MLD STP at Bharuhana, Mirzapur

As outlined in Section 4.2.1, Mirzapur zone faces a projected sewage generation gap of 19.6 MLD by 2041. The existing STP at Pakka Pokhra is already operating at full capacity and cannot accommodate future demand. In addition, the Sewage Pumping Station (SPS) at Chetganj is unable to pump at its required capacity to the Main Pumping Station (MPS) at Kachehari, due to insufficient capacity at both Pumping Station and Pakka Pokhara STP. As a result, approximately 5 MLD of sewage around Chetganj area is currently bypassing treatment and being discharged directly into the Khandwa Nallah.

Although additional land for new STP is available at Pakka Pokhra for expansion, inadequate right-of-way prevents laying an additional rising main from the Khandwa Nallah area to Pakka Pokhra STP. These systemic and logistical constraints necessitate a localized treatment solution to intercept and treat sewage flows near Khandwa Nallah, ensuring compliance with long-term sanitation goals.

Proposed Intervention:

To eliminate uncontrolled sewage discharge into River Ganga through Khandwa Nallah, a comprehensive intervention comprising a Sewage Treatment Plant (STP), Sewage Pumping Station (SPS), Interception & Diversion (I&D) structure and a structured sewerage network is proposed.

A. Construction of 20 MLD STP at Bharuhana, Mirzapur

A 20 MLD STP based on Sequencing Batch Reactor (SBR) technology is proposed at Bharuhana, Mirzapur as a tentative location (Refer Map 7-1). The capacity has been determined considering present sewage generation and projected demand of approximately 19.6 MLD by 2041. The STP will be designed using SBR technology, ensuring high-quality effluent, operational flexibility and compliance with discharge standards. This requires a minimum land area of approximately 2.5 ha has been considered, ensuring provision for future expansion. This ensures future-proofing against settlement growth, compliance with CPHEEO and MoHUA guidelines and availability of adequate land for treatment facilities and green buffer infrastructure.

This localized treatment will directly intercept sewage flows, prevent untreated discharge into the drain and reduce the burden on the existing Pakka Pokhra STP.

B. Construction of 25 MLD Sewage Pumping Station (SPS)

A 25 MLD SPS is proposed near Khandwa nallah (Refer Map 7-1), which is a critical location beside the **River Ganga** where limited land, riverbank proximity, and narrow access corridors create design challenges. The SPS will require an area of approximately 0.04 ha with tentative locations identified. The final siting will be determined during the DPR stage and implemented based on land availability and SPS design criteria. The SPS will intercept used water from the Khandwa nallah through I&D structure (5x5m area) and lift the flow via rising mains to the STP before it reaches the river, preventing direct discharge into the Ganga. To ensure reliability at this sensitive site, the station will be built with robust civil structures, flood-resilient features and standby pumping capacity for uninterrupted operation during peak flows and monsoon conditions.

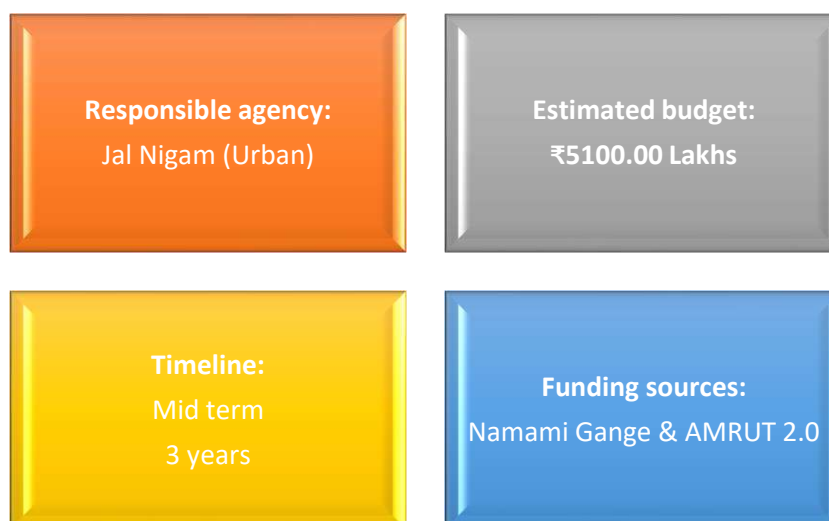
A Rising main of 2.8 kms will subsequently be connected to the proposed 20 MLD STP at Bharuhana through imambada road. This network will provide long-term resilience by preventing untreated sewage from entering River Ganga. This integrated pumping arrangement will ensure reliable transfer of sewage to the treatment facility, eliminate bypass discharge into the drain and ease pressure on the existing pumping stations at Chetganj and Kachehari.

The proposed locations shown in the referenced maps are indicative and will be finalized during the Detailed Project Report (DPR) stage, following detailed engineering, hydrological and environmental assessments.



Map 7-1 : Proposed sewer pumping station and sewage treatment plant

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 13.

7.2.2 Intervention 2: Upgradation of existing 14 MLD UASB based STP at Pakka Pokhara

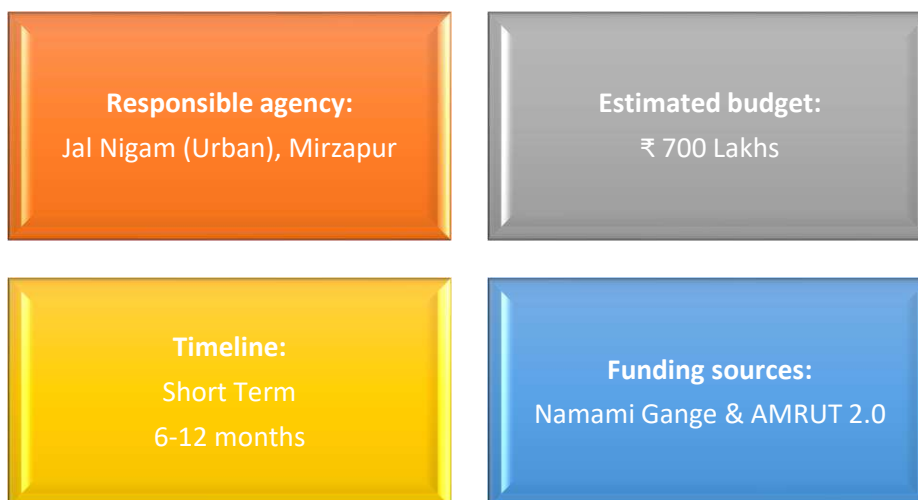
As outlined in section 4.2.1, the existing 14 MLD UASB plant in Mirzapur currently provides primary treatment of sewage. However, monitoring results show that the effluent discharged from the plant has BOD levels between 20–30 mg/L, which is not acceptable under NGT norms. UASB effluent typically requires further “polishing” to meet regulatory standards for Biological Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and pathogen removal. Without further treatment, the discharge risks non-compliance with environmental regulations and may adversely affect the river ecosystem. Therefore, a dedicated secondary treatment facility is required to ensure safe discharge and enable potential reuse of treated used water.

Proposed Intervention:

A 14 MLD Sequencing Batch Reactor (SBR) based Secondary Treatment Plant will be constructed adjacent to the existing UASB facility with an area of 0.7 ha by removing the existing polishing pond to make space for the new unit. This plant will intercept effluent from the UASB at around 50mg/L BOD and provide secondary treatment in SBR unit followed by advanced polishing through filtration units that remove fine suspended solids, followed by disinfection processes such as chlorination or ultraviolet (UV) treatment to eliminate pathogens. The polished effluent will then be either discharged safely into the river or diverted for non-potable reuse applications including irrigation, landscaping and industrial cooling.

This intervention ensures complete environmental compliance with CPCB and NGT standards by achieving $BOD \leq 10$ mg/L, $TSS \leq 10$ mg/L, and fecal coliform ≤ 100 MPN/100 mL. It also enhances treatment efficiency, prevents environmental risks, and supports sustainable water management. In addition, the plant will incorporate real-time effluent monitoring systems as mandated for STPs above 1 MLD, and provisions for sludge handling and stabilization in accordance with CPCB guidelines.

Implementation Framework



The detailed costing of these above interventions is given in Annexure 14.

7.2.3 Intervention 3: Treatment of Effluents from informal Dyeing Industries

As outlined in section 4.2.4, Industrial pollution is a major challenge in Mirzapur's used water system. Dyeing industries in Vindhyachal generate about 2 MLD of toxic effluents, which severely affect river water quality and ecosystems. The existing 7 MLD STP, designed for domestic sewage, cannot handle these concentrated effluents. Currently, effluents flow through the sewer network to the STP inlet chamber; during industrial effluents discharge timings, the STP inlet is paused and effluents are bypassed directly to the outlet, causing untreated release into drains and the river. A dedicated treatment facility is required to segregate and treat dyeing used water, ensuring compliance with CPCB and NGT norms.

Key Issues:

- Industrial Pollution: Untreated effluents degrade water quality and harm ecosystems.
- STP Limitation: The 7 MLD STP cannot treat industrial effluents, leading to non-compliance.
- Need for Segregation: Separate treatment is essential to protect municipal systems.
- Clustered Discharge: Dyeing used water is released directly into drains at identified locations.

Proposed Intervention:

Option-1 – Administrative Action

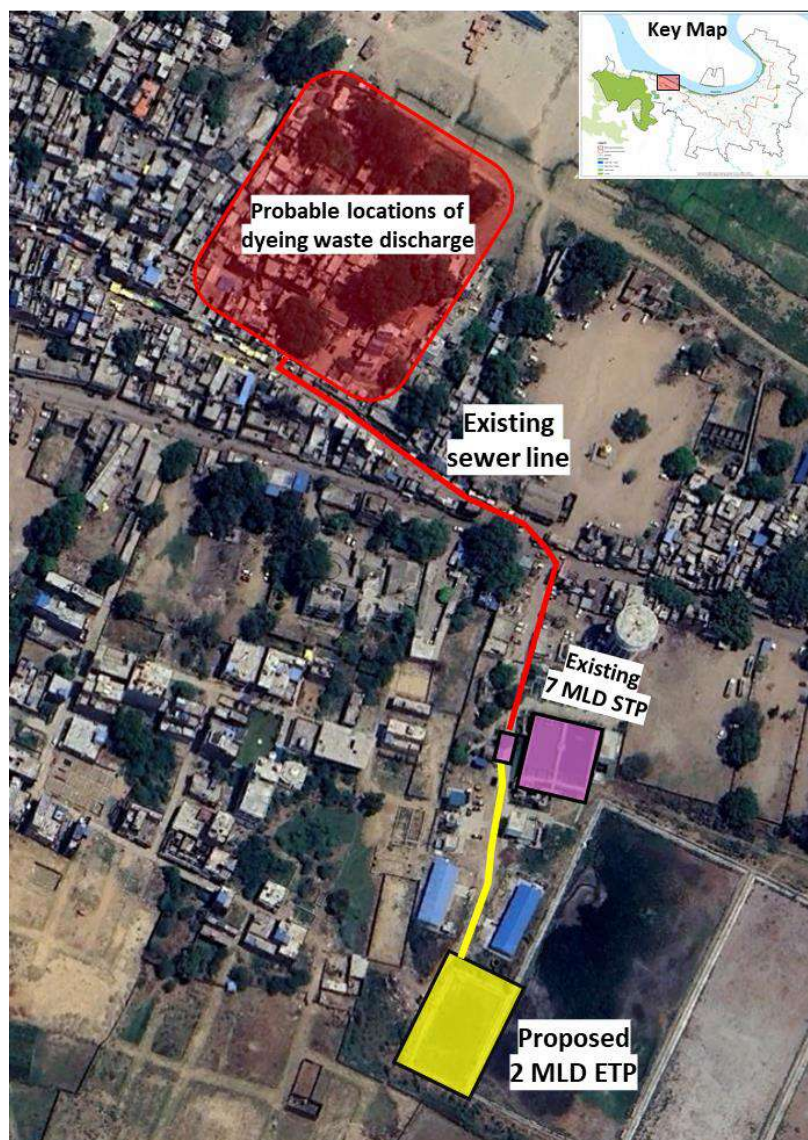
- Identify and regulate informal dyeing units within residential areas.
- Relocate or phase out such industries from the city core to reduce direct discharge.
- Enforce compliance through UPPCB monitoring, penalties, and relocation support.

Option-2 – Infrastructure development

To address the issue of untreated dyeing effluents, a 2 MLD Effluent Treatment Plant (ETP) is proposed within the 7 MLD STP premises at Vindhyachal with an area of 0.2 ha. This facility will be specifically designed to neutralize and treat dyeing used water through processes such as chemical neutralization, color removal, and sludge management, ensuring compliance with CPCB and NGT discharge norms. By situating the ETP within the municipal campus, land use will be optimized, shared utilities can be leveraged and streamline operational oversight.

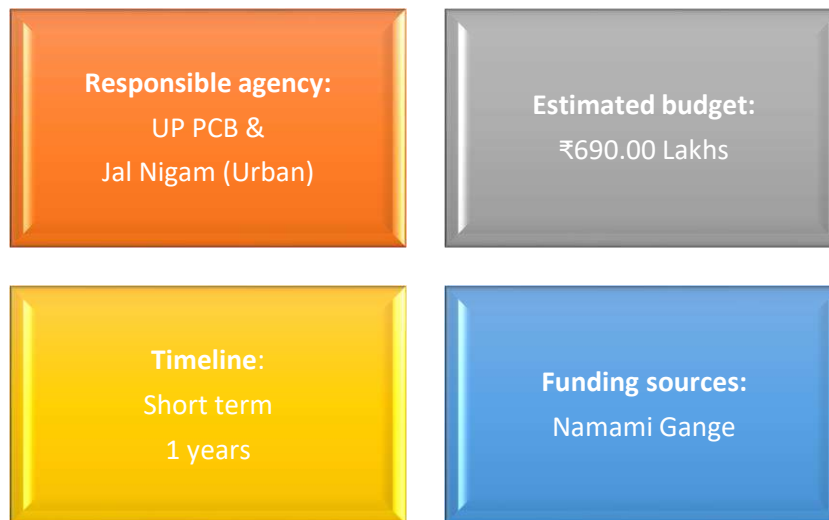
The current bypass arrangement at the STP inlet chamber will be modified: instead of diverting effluents directly to the STP outlet, the flow will be diverted to the new ETP for specialized treatment. This segregation will protect the biological treatment process of the STP, prevent non-compliant discharge, and ensure that industrial effluents are managed in a controlled and sustainable manner.

The proposed location and diversion network are illustrated in the Map-7-2.



Map-7-2: Proposed network and effluent treatment plant

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 15.

7.2.4 Intervention 4: Construction of 25 kLd co-treatment plant at Pakka Pokhara for Mirzapur Zone

As outlined in section 4.2.2, In Mirzapur, 50% of households depend on On-Site Sanitation systems, generating about 102.9 kLD of faecal sludge daily. However, following the implementation of sewerage house connections under AMRUT-2.0, faecal sludge generation is expected to reduce to around 41.1 kLD per day. However, the long distance between Mirzapur and the existing co-treatment plant at Vindhyachal makes transportation of sludge is economically unviable and gap in existing desludging vehicles.

As a result, desludging vehicles often discharge faecal sludge directly into manholes and drains to avoid long-distance transportation, leading to unsafe disposal practices. This not only allows untreated waste to enter the environment, but also causes pollution, health risks, and undermines the city's sanitation goals. The situation highlights a pressing need for a localized faecal sludge treatment solution within Mirzapur itself, ensuring safe management and sustainable sanitation outcomes.

Proposed Intervention

To ensure comprehensive sanitation and safe management of fecal sludge, a 25 kLD Co-Treatment Plant will be constructed within the premises of the existing 22.5 MLD STP with an area of 0.03 ha.

Vacuum trucks will discharge faecal sludge into the co-treatment unit, beginning with a Screen Chamber for removal of coarse solids. The sludge will then pass into a Homogenization Tank to ensure uniform consistency before separation. Solids will be directed to a Dewatering Unit and then to Sludge Drying Beds for safe disposal or reuse. Liquids and filtrate will be routed to the STP's Inlet Chamber for biological treatment alongside sewage. This structured flow ensures controlled integration, prevents shock loading and maintains treatment efficiency (refer Figure 7-1).

The proposed 25 kLD Co-Treatment Plant is based on proven operational models implemented in other Indian cities, ensuring feasibility and adaptability for Mirzapur. By leveraging existing STP infrastructure, the intervention minimizes land and capital requirements while expanding treatment capacity. This approach provides a sustainable solution to manage the city's faecal sludge load, reduce unsafe disposal, and strengthen long-term sanitation resilience.

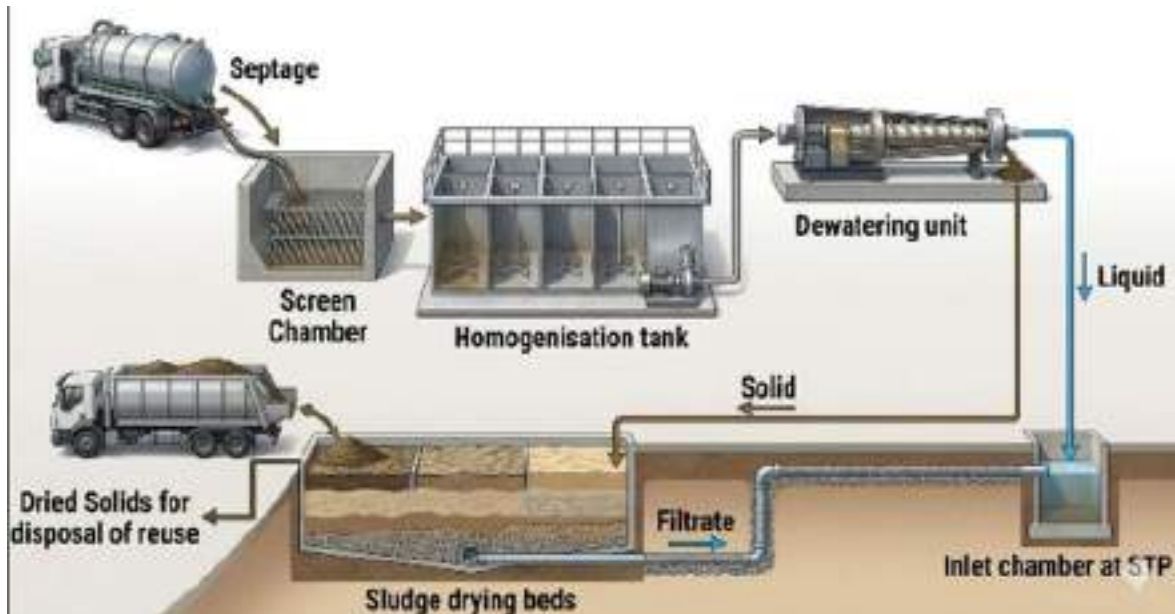
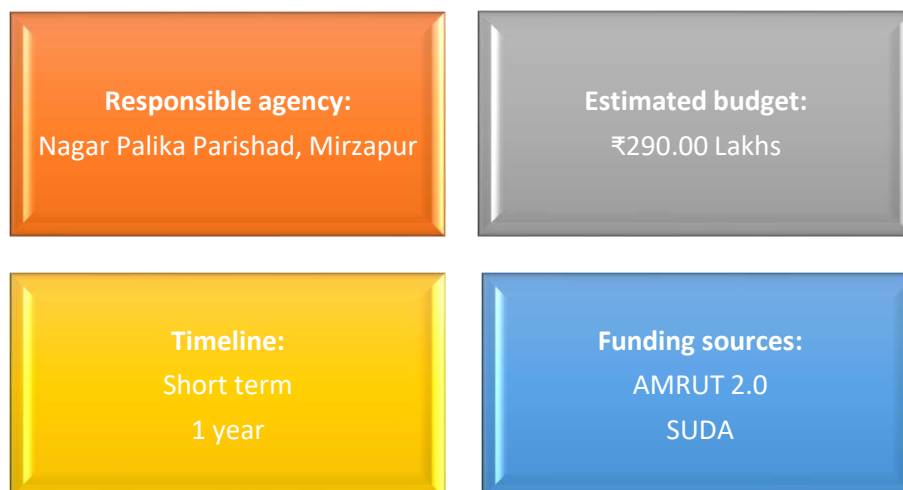


Figure 7-1: Process flow diagram of co-treatment units

Based on CPHEEO norms, the reduced faecal sludge load of 41.1 kLD/day requires approximately 7 desludging vehicles of 3 KL capacity (2 trips/day). At present, Mirzapur has an existing fleet can handle about 28 kLD/day. This leaves a gap of 13.1 kLD, which translates to the need for two additional 3 KL vehicles. To ensure accountability and prevent unsafe disposal practices, all proposed vehicles will be equipped with GPS tracking systems for real-time monitoring of trips and ensure accountability, and prevent unsafe disposal into drains or manholes. This intervention will bridge the current service gap, optimize utilization of the co-treatment facility, and strengthen overall faecal sludge management in Mirzapur.

Implementation Framework



The detailed costing of these above interventions is given in Annexure 16.

7.2.5 Intervention 5: Removal of Legacy and Solid-Waste Hotspots along the Ganga Riverbank and Ghats

As mentioned in the section 4.3.1, restoration of the Ganga riverfront in Mirzapur requires the systematic clearance of solid waste accumulations that degrade the river ecosystem and public spaces. Site assessments have identified two distinct categories of waste hotspots. The first type consists of

legacy waste embedded along slopes behind residential houses, where refuse has mixed with soil and built edges over time. These areas are highly sensitive and demand careful manual extraction to avoid slope destabilization. The second type includes ghat-side accumulations of loose mixed waste, estimated at 2–3 tonnes, concentrated in high-footfall visitor areas in each ghats. These require immediate clearance and strict daily maintenance to prevent recurring pollution.

Proposed Intervention:

To ensure safe and sustainable clearance, the URMP proposes a strict 5-Stage Implementation Mechanism:

Stage 1: Identification and Demarcation

- Conduct a joint site inspection involving the Nagar Palika, District Administration and technical staff.
- Mark exact hotspot boundaries, estimate waste quantities, record access widths and identify safe lifting points.
- Compile a comprehensive "Hotspot Register" documenting locations, waste types, tonnage, manpower requirements, transfer points and river-sliding risks.

Stage 2: Safety and Pre-removal Control

- Secure the site by installing temporary barricades, warning tapes, and river-facing tarpaulin/HDPE containment barriers to prevent waste from slipping into the river during extraction.
- Strictly restrict the use of heavy machinery on unstable slopes. Prioritize the use of hand tools, sacks, baskets, and rope-supported lifting mechanisms to ensure worker safety and bank stability.

Stage 3: Waste Removal Method

- *For Type A Hotspots:* Execute manual waste removal in thin layers (working top-to-bottom or side-to-top). Deep excavation is strictly prohibited to avoid soil erosion.
- *For Type B Hotspots:* Conduct immediate clearance of loose waste beside the ghats using manual collection, bagging, and temporary on-site segregation.
- Utilize narrow-access equipment such as handcarts, tricycles, wheelbarrows, mini-tippers, or tractor trolleys for the secondary transport of waste out of constrained lanes.

Stage 4: Transport and Disposal

- Ensure all collected waste is securely shifted only to Urban Local Body (ULB) designated processing and disposal facilities.
- Maintain strict compliance with the Solid Waste Management (SWM) Rules, 2016, throughout the handling and transportation process.

Stage 5: Prevention After Clearance (Sustained Maintenance)

- Install twin bins, designated litter points, and covered receptacles at all entry points, vending zones, and visitor congregation areas.
- Install structural preventive measures like mesh barriers, bar screens, and catch arrangements at critical slope edges and drainage outfalls.
- Initiate a rigorous schedule of daily sweeping, washing, and cleaning of the Ghats.

- Deploy clear anti-littering signboards and strictly impose penalties on repeat dumping offenses to deter future accumulations.

Implementation Framework



The detailed costing of these above interventions is given in Annexure 17.

7.3 OBJECTIVE 3: REJUVENATION AND ECOLOGICAL RESTORATION OF WATERBODIES

As mentioned in Section 3.2, NNP encompasses 59 waterbodies, of which 29 waterbodies are more than 1 acre in size. While these assets are crucial for stormwater drainage, groundwater recharge, flood moderation and ecological balance; their condition has deteriorated due to encroachment, siltation, untreated used water inflows and solid waste dumping. This has led to declining water quality, reduced storage capacity and weakened ecological services. To address these challenges, enhanced safeguards, targeted pollution mitigation and systematic integration of waterbodies into the city's water management framework are essential to reinstate their ecological and functional roles.

7.3.1 Intervention 6: To create water body Database at city level

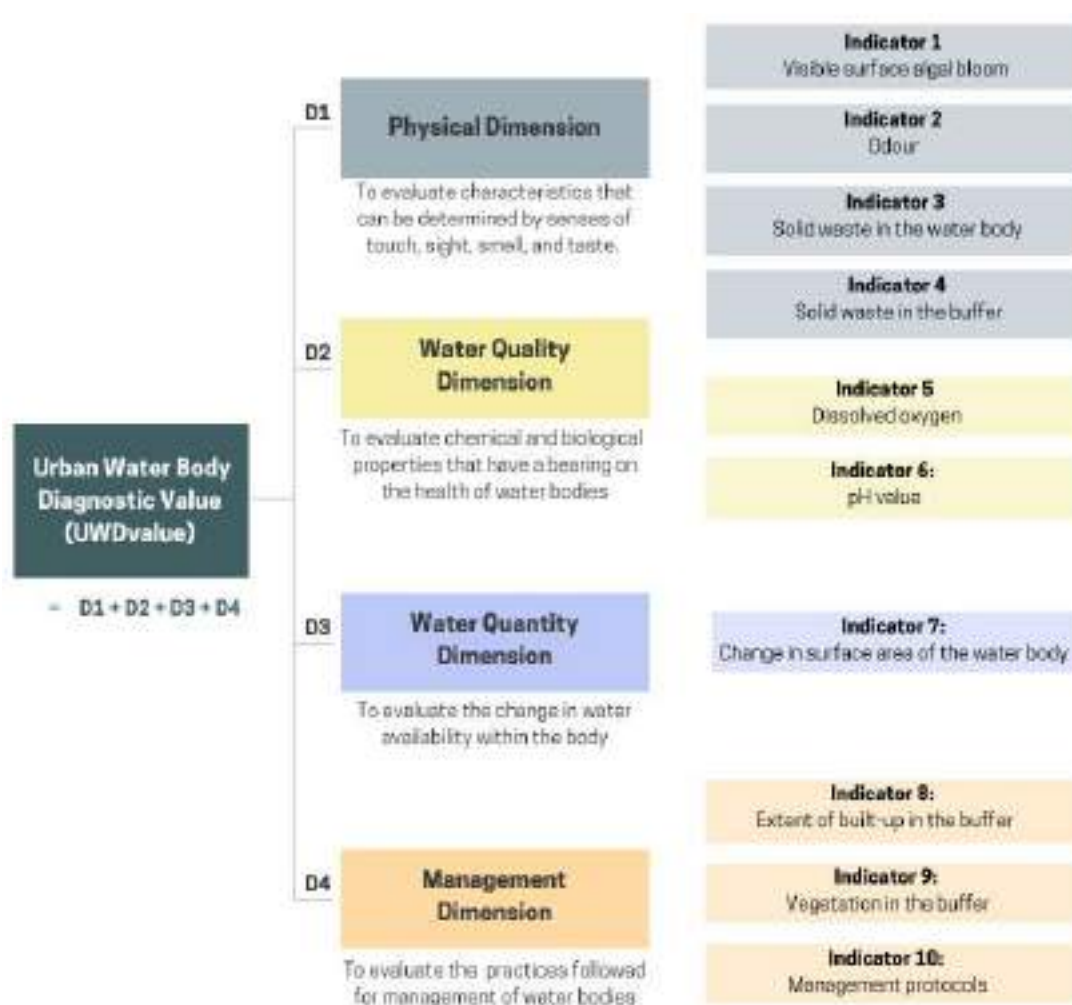
While Mirzapur's waterbodies are recognized for their ecological and hydrological importance, the absence of a comprehensive, city-wide inventory and monitoring framework has constrained the ULB's capacity to safeguard, manage and rejuvenate these assets. The encroachments and uncontrolled inflows of sewage and solid waste have progressively diminished both water quality and the storage potential of several assets.

Proposed Intervention

The initiative seeks to establish a city-level comprehensive waterbody database for Mirzapur, functioning as a centralized digital repository of all waterbodies within municipal jurisdiction. This database will enable real-time monitoring, integrated planning and enforcement coordination across relevant agencies, thereby strengthening institutional capacity for waterbody management.

The design and implementation of the Mirzapur Waterbody Database will be guided by the Urban Water Body Diagnostic Tool (UWBDT)² developed by the National Institute of Urban Affairs (NIUA). The UWBDT provides a standardized assessment framework encompassing critical parameters such as physical condition, hydrological connectivity, water quality, ecological health, governance structures and risk exposure. Adoption of this framework will ensure systematic evaluation, evidence-based decision-making and long-term rejuvenation strategies for Mirzapur's urban waterbodies.

² <https://uwdtool.in/>; https://nmcg.nic.in/writereaddata/fileupload/56_Urban-Water-Body-Diagnostic-Tool-Manual.pdf

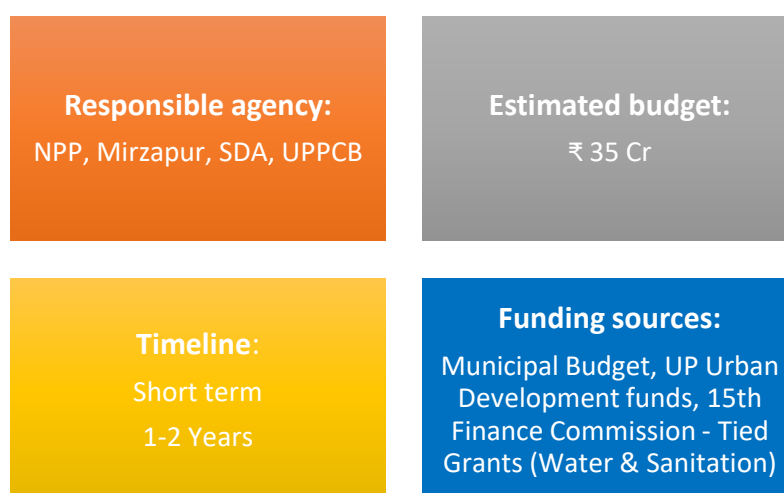


Picture 7-1: Urban Waterbody Diagnostic Key Parameters

The following are the key components essential for creating the database of waterbodies.

Stages	Actions to be taken
Data Collection	- Geo-referenced mapping of all waterbodies (area, boundary, catchment) - Ownership and administrative details - Current land-use and encroachment status - Hydrological connectivity with nallahs, rivers and floodplains - Water quality parameters and pollution sources - Economic Potential (Boating, Fishing, Recreational) - Flooding and waterlogging history - Rejuvenation status and maintenance records
Database Integration	- All collected data is consolidated into a dynamic, spatially enabled digital repository. The database is structured using the Urban Water Body Diagnostic Tool (UWBDT) developed by NIUA, which provides a standardized framework for assessment. Key features include: - Centralized access for municipal departments - Real-time updates and monitoring tools - Structured evaluation across ecological, hydrological and governance dimensions
Application & Outcomes	Monitoring: Enables regular surveys, hydrological assessments and pollution tracking Planning: Informs integrated land-use strategies and conservation measures Enforcement: Facilitates encroachment removal, pollution control and compliance with buffer zone regulations

Implementation Framework



The detailed costing of overall intervention is given in Annexure 18.

7.3.2 Recommendation 3: Strategy for Urban Water Body Rejuvenation

Mirzapur's dependence on groundwater, coupled with declining recharge trends between 2014–2019, has heightened vulnerability to water scarcity and deteriorating quality. Encroachment, loss of protective buffer zones, inflows of untreated used water, solid waste dumping, siltation and proliferation of invasive species such as water hyacinth have progressively degraded urban ponds.

Historically, these ponds functioned as natural recharge basins sustaining aquifers and community needs. Their degradation has weakened resilience and water security, making systematic rejuvenation essential for long-term sustainability.

Proposal Intervention:

Given limited municipal budgets and widespread degradation, a data-driven Prioritization Matrix has been developed to rank waterbodies by hydrological importance, ecological health and feasibility. This ensures resources are allocated strategically and interventions are phased.

Based on the NIUA Urban Water Body Diagnostic Tool, all the 29 ponds having above one acre area within municipal limits were assessed across three dimensions:

- ▶ Physical parameters (encroachment, buffer condition, bed type)
- ▶ Water quality and hydrology (Used water inflows, solid waste, dissolved oxygen)
- ▶ Socio-economic context (accessibility, cultural significance, surrounding land use)

The detailed methodology outlining how each parameter was scored and the pond-wise scoring was done (Refer Table 3-1). Based on composite scores, ponds have been categorized into priorities as presented in Table 7-2. As per the table above, strategic categorization of Mirzapur ponds places those with critical sanitation issues under Priority A (Drainage Interventions), ensuring Used water diversion and treatment before any beautification. Once sanitation is stabilized, ponds with natural pervious beds and strong physical scores are classified as Priority B (Recharge Zones) to enhance groundwater recharge. Finally, ponds that are clean, accessible and socially viable are designated as Priority C (Recreation) for landscaping, aeration and public use.

Table 7-2: Prioritization of Ponds

Priority	Focus	Number of Ponds	Key Issues Addressed
Priority A	Drainage & Sanitation-first	8	Raw sewage inflows, solid waste, low DO
Priority B	Recharge-focused	3	Dry, moderate pollution

Priority	Focus	Number of Ponds	Key Issues Addressed
Priority C	Recreation & Amenity Upgrades	0	None

Source: Consultant analysis

Implementation Measures by Priority

Priority A – Drainage & Sanitation

Ponds under Priority A are severely degraded due to raw sewage inflows, solid waste dumping and critically low dissolved oxygen levels. The immediate objective is to stabilize water quality and eliminate pollution sources before recharge or recreational use is considered.

Implementation Measures:

- ▶ Construct Interception & Diversion (I&D) drains with stone pitching and bamboo culverts to redirect untreated Used water.
- ▶ Establish decentralized Used water treatment units (Phytorid wetlands or DEWATS) using gravel beds, vetiver grass and native reeds.
- ▶ Implement solid waste management through bamboo fencing, recycled signage and community led clean up drives.
- ▶ Undertake aquatic weed management with manual removal and floating wetlands of native plants.
- ▶ Introduce solar powered water quality monitoring sensors for DO, BOD and COD.
- ▶ Develop a mandatory 9-meter vegetated buffer zone with vetiver, neem and bamboo to prevent encroachment and filter runoff.

Priority B – Recharge-Focused Interventions

Ponds under Priority B retain natural soil beds and moderate pollution levels, making them suitable for groundwater recharge. The focus is on restoring infiltration capacity and protecting aquifer pathways.

Implementation Measures:

- ▶ Conduct desilting operations to restore depth (2–3 m) and reopen aquifer pathways, reusing silt for landscaping.
- ▶ Construct sedimentation basins at inlets using stone bunds and vegetated traps to settle solids before water enters.
- ▶ Install recharge shafts and percolation pits (brick lined, gravel filters) aligned with natural flow directions.
- ▶ Establish vegetative buffer zones with vetiver, bamboo and neem to reduce runoff contamination.
- ▶ Preserve natural soil beds by avoiding concrete lining and maintaining ≥90% perviousness.
- ▶ Ensure a 9-meter green belt around pond peripheries for ecological protection.

Priority C – Recreation & Amenity Upgrades (Future Phase)

No pond currently qualifies for Priority C. However, once sanitation and recharge measures are successfully implemented, select ponds may transition to this category. The focus will be on enhancing community value while retaining ecological buffers.

Implementation Measures:

- ▶ Develop landscaped ghats and walking paths (≥1.5 m wide) using stone and bamboo decking.

- ▶ Install solar powered aeration fountains to improve dissolved oxygen and aesthetics.
- ▶ Provide solar lighting and recycled signage for safety and awareness.
- ▶ Designate cultural activity zones (10–15% of periphery) with bamboo platforms and shaded seating.
- ▶ Enhance the green belt with flowering and shade trees such as gulmohar, neem and amaltas.

7.3.3 Intervention 7: Rejuvenation Shuklaha Talab

Shuklaha Talab located in the eastern part of Mirzapur city has been identified for application of the above-mentioned waterbody rejuvenation interventions after discussion with city stakeholders. The eutrophic pond is completely covered in weeds and receives used water from adjacent settlements as well as a drain that flows into the pond from the north.

Satellite imageries of 2010 and 2025 reveal encroachment of the pond especially along the Shuklaha Kachahar Road in the west in the last 15 years. This includes a new Sewage Pumping Station and a park adjacent to it along the western edge.



Figure 7-2: Shuklaha Talab in 2010 and 2025

There is immediate requirement of boundary fencing all ponds in the city. Further, ponds that have faced encroachments should be desilted and deepened to restore their original water holding capacity.

Interventions: To showcase interventions the western part of the Shuklaha Talab has been chosen with an approximate area of 2.75 acres of the pond without encroachments. The key interventions include the following:

- Dredging and weed removal of the entire pond and fencing of its boundary,
- Provision of a constructed wetland of approximately 0.2 acres to clean the approximately 0.1 MLD inflow of nallah water that flows into the pond from the north,
- Provision of a permeable paver pedestrian pathway, small foot over bridge and lighting along the periphery of the pond,
- Provision of food cafeteria, children's play area and toilet block in the existing under construction Devi Ahilyabai Holker Memorial Park in the northwest,
- Provision of a second entrance from the west to provide access to the adjacent residents,
- Provision of a third entrance from the east along with a seating area and open-air gym,
- Provision of boats and a fountain within the pond.



Figure 7-3: View of Shuklaha Talab before and after rejuvenation interventions

Block cost of the proposed interventions is presented in Annexure 19. Funding for the project can be sourced from AMRUT 2.0, State Mission for Clean Ganga (SMCG-UP) or State Finance Commission grants from NPP. Implementation and operation and maintenance of the pond can be supervised by NPP.



- | | |
|--|--|
| 1. Existing Parking area | 7. Children's play area |
| 2. Existing Sewage Pumping Station | 8. Pedestrian pathway |
| 3. Inlet channel from existing drain with used water | 9. Second entry from residential colony |
| 4. Cafeteria | 10. Constructed wetland |
| 5. Toilet block | 11. Open pond with fountain |
| 6. Pedestrian bridge | 12. Third entry from road and small park with open air gym |

Map 7-3: Proposed plan of Shuklaha Talab rejuvenation

7.4 OBJECTIVE 4: ENHANCE RIPARIAN BUFFER ALONG RIVERBANK

Riparian stretches comprising vegetated strips alongside rivers and natural drains are essential "living infrastructure" in cities because they perform critical services that cannot be provided by concrete edges. These include:

- **Flood Control:** Riparian stretches absorb excess rainwater and slow down runoff, preventing downstream flooding.
- **Water Purification:** The soil and roots filter out toxic urban pollutants and sediments before they reach the river.
- **Climate Regulation:** They cool the surrounding area thereby combating "Urban Heat Island" effect.
- **Biodiversity and Recreation:** They serve as the primary corridors for wildlife movement and provide valuable green space for human mental health and recreation.

The riparian stretches along River Ganga and streams were analyzed and differentiated between degraded and healthy stretches. Interventions have been proposed for restoration of Low-density vegetation stretches whereas conservation and preservation recommendations have been proposed for the relatively healthy stretches in the following paragraphs.



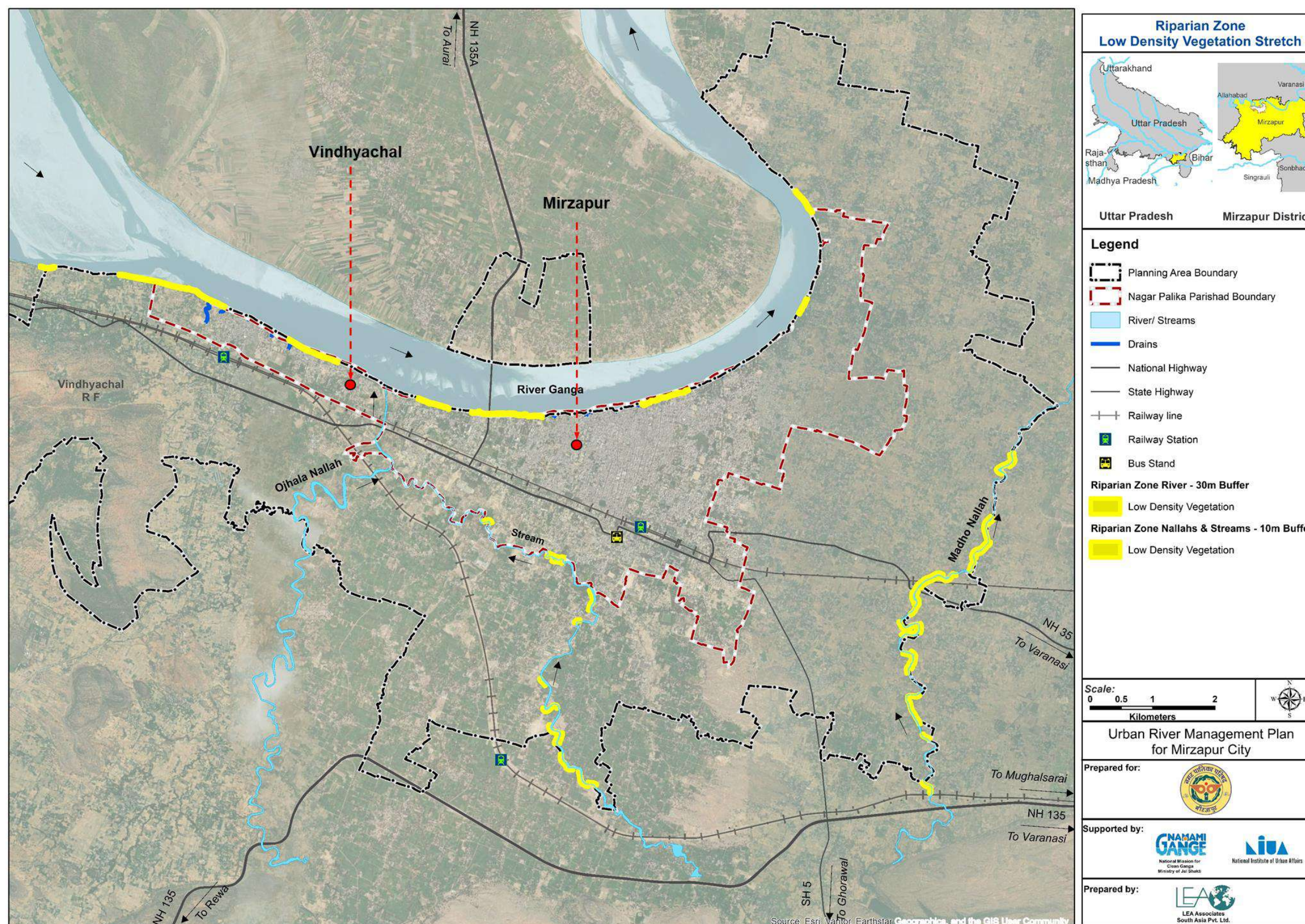
Picture 7-2: Dense vegetation along the river



Picture 7-3: Low density vegetation Stretch along River Ganga

7.4.1 Intervention 8: Restoration of Low-density vegetation

As mentioned in Section 3.2.3 the Low-density vegetation in Mirzapur is concentrated along River Ganga and stream. Field observations indicate localized degradation, bank erosion from monsoon flooding and declining stability in downstream stretches (Refer Map 7-4) Seasonal floods erode river banks, uprooting native vegetation, while the absence of systematic plantation and maintenance has facilitated the spread of invasive species and barren patches, thereby weakening ecological resilience. To address these issues, a Three-Zone Riparian Buffer Restoration Strategy is proposed along the Low-density vegetation stretches on both banks. This approach will restore the vegetation in layers based on proximity to the river channel, strengthening both ecological and hydraulic functions.



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4) Transport Network: OSM

Map 7-4: Low density vegetation stretches in Mirzapur planning Area

Proposed key actions for restoration

The restoration strategy focuses on establishing a multi-zone riparian buffer and enhancing native vegetation to improve flood resilience and ecological integrity. The key measures are as under. Wherever feasible, hard engineering solutions shall be avoided, by preferring nature-based interventions, that strengthen ecological resilience.

- Plantation of vetiver, native grasses and sedges for soil binding and erosion control.
- Establishment of bamboo clumps and live staking techniques to stabilize eroding banks

Table 7-3: Key actions for the restoration of the riparian buffer

Components	Key Actions/ Species	Expected Outcome
1. Stabilize Eroding Riverbanks (Bio-engineering)	Vetiver, kans grass, bamboo clumps, live staking; avoid concrete where not required	• Reduced erosion, bank stability, safer flood margins
2. Establish Three-Zone Riparian Buffer	Zone-1 grasses & sedges, Zone-2 shrubs/small trees, Zone-3 native trees	• Flood energy dissipation • Biodiversity enhancement, long-term riparian stability
3. Riparian Plantation & Habitat Restoration	Native species clusters (Arjun, Jamun, Peepal, Siris, Bamboo), avoid monoculture	Biodiversity enhancement, long-term riparian stability
4. Pollution Source Management (Agro)	Vegetated filter strips, compost pits, controlled fertilizer use awareness	Reduced nutrient & pesticide loading
5. Replacement of invasive species by Native Species Integration	Recommended native species (site-suitable): • <i>Lantana camara</i> Implementation: • Gradual removal of invasive plants to avoid exposed bare soil • Sequential planting during pre-monsoon/monsoon • Periodic weed control and survival monitoring	• Restoration of native riparian habitat and biodiversity. • Gradual suppression of invasive species through healthy native cover. • Lower maintenance requirement over time due to self-sustaining native vegetation.

Multi-zonal approach for riparian stretches design

A 30-meter wide riparian buffer zone is proposed along the identified river stretches, extending from the river's edge to provide ecological stabilization and flood mitigation benefits.

- Zone 1 Inner Zone Closest to water (stream edge):**
 - Grasses and sedges for erosion control and nutrient filtration
 - Stabilize the bank, reduce scouring and filter runoff
- Zone 2 Middle Zone (Mid-slope bank)**
 - Shrubs for flood energy dissipation and habitat connectivity
 - Intercept pollutants, break flood velocity and shield inner vegetation
- Zone 3 Outer Zone Higher bank / upland**
 - Native tree species for long-term stabilization, biodiversity enhancement and microclimate regulation
 - Improve infiltration and support soil structure

The three zones of buffer are shown in Figure 7-4.



Figure 7-4: Section of the Proposed riparian stretch along eastern and western bank of the river and canal

Zone wise proposed species and its ecological benefits

Species selection is based on hydrological tolerance, rooting depth and ecological performance to optimize bank stabilization, nutrient retention and habitat functioning. The native plant species recommended for each riparian zone are summarized in the Table 7-4.

Table 7-4: Native plant species recommended for each riparian zone

Zone	Width	Species name	Relevance to River Ganga Context	Pollution Control Function	Flood Control Function
Zone 1 – Grasses & Sedges (Immediate Stream Edge)	0-10 m	<i>Saccharum spontaneum</i> (Kans), <i>Cynodon dactylon</i> (Doob grass), <i>Imperata cylindrica</i> (Cogon grass).	• Bind loose alluvial soils • Survives grazing & seasonal waterlogging • Common on floodplains, easy to establish	• High nitrate/phosphate uptake, pesticide adsorption • Filters runoff, strong nitrogen uptake • Captures sediments carrying fertilizers	• Deep roots anchor toe of bank, reduces scouring • Forms dense mats, holds soil during flood recession • Flexible stems dissipate flood velocity
Zone 2 – Shrubs & Small Trees (Pollution Interception Zone)	5-10 m	<i>Dogwoods</i> , <i>sedges</i> , <i>rushes</i> , plus <i>climbers like Giloy and Besharam</i> for ecological balance	• Tolerates seasonal flooding & drought • Suitable for embankment slopes • Suitable near settlements and river edges • Tolerant to poor soils near fields	• Absorbs pesticides, hardy & low maintenance • Nutrient interception, supports soil microbes • Enhances microbial pesticide breakdown • Uptake of heavy metals & pesticides	• Breaks flood velocity, shields inner vegetation • Prevents gully formation during monsoon flows • Canopy reduces storm runoff concentration • Reinforces bunds and embankments

Zone	Width	Species name	Relevance to River Ganga Context	Pollution Control Function	Flood Control Function
Zone 3 – Native Trees (Outer Buffer / Upland Zone)	10-15 m	<i>Azadirachta indica</i> (Neem), <i>Ficus religiosa</i> (Peepal), <i>Terminalia arjuna</i> (Arjun), <i>Syzygium cumini</i> (Jamun). Shrubs/climbers: <i>Ipomoea carnea</i> (Besharam), <i>Tinospora cordifolia</i> (Giloy);	- Traditionally used along riverbanks - Suitable for moist alluvial terraces - Long-lived native species - Grows well on floodplain margins	- Strong nitrate uptake, stabilizes banks - Reduces nutrient leaching to groundwater - Supports nutrient cycling & soil microbes - Excellent nutrient sink, rapid biomass	- Buttressed roots resist major flood events - Enhances infiltration, moderates peak runoff - Improves soil structure and moisture holding - Dense clumps act as natural flood barriers

Expected outcome

Implementation of the proposed riparian buffer will transform Low density vegetation stretches of river and canal into a continuous and dense green corridor. Grasses, shrubs and native trees will work together to:

- Stabilize the riverbanks and reduce flood impacts.
- Improve water quality through natural filtration.
- Enhance biodiversity and habitat connectivity along the river corridor.

The before and after intervention conditions are illustrated in the Figure 7-5.



Figure 7-5: Illustration of proposed riparian stretch on River Ganga

Implementation Framework:

Sl. No	Components	Unit Rate (in lakhs)	Quantity (in ha)	Total Cost (in lakhs)	Responsible & Supporting Agency	Duration (in Months)	Funding Sources
1	Zone 1 – Grass & hedge plantation (0–10 m)	20	16.7	334	Forest Dept and Irrigation dept	6	CAMPa and Namami Gange
2	Zone 2 – Shrubs & Small Trees (10–15 m)	40	8.35	334		6	

Sl. No	Components	Unit Rate (in lakhs)	Quantity (in ha)	Total Cost (in lakhs)	Responsible & Supporting Agency	Duration (in Months)	Funding Sources
3	Zone 3 – Native Trees (15–30 m)	50	25.05	1252.5		6	
4	Monitoring & Evaluation (@ 2% of total cost)	0.8	44.88	38.41		12	
5	Operation and Maintenance (5 year @ 10% of total cost)	4	44.88	192.05		60	
	Total			2150.96			

* Above costing is prepared by using DSR, Schedule of Rates (SOR) issued by each State Forest Department and by central norms under MoEFCC (Ministry of Environment, Forest and Climate Change). Uttar Pradesh specifically uses its Forest Department SOR and PWD SOR for DPR preparation, which prescribe per-hectare plantation costs, fencing, and maintenance norms.

7.4.2 Recommendation 4: Conservation and Preservation of Natural dense riparian buffer

Strict conservation measures are recommended for the ecologically intact stretches of the River Ganga and associated streams in Mirzapur, particularly where riparian vegetation remains relatively undisturbed in the downstream reaches. These riparian buffers serve as critical reference conditions or “benchmark sites” against which restoration outcomes in degraded areas can be evaluated.

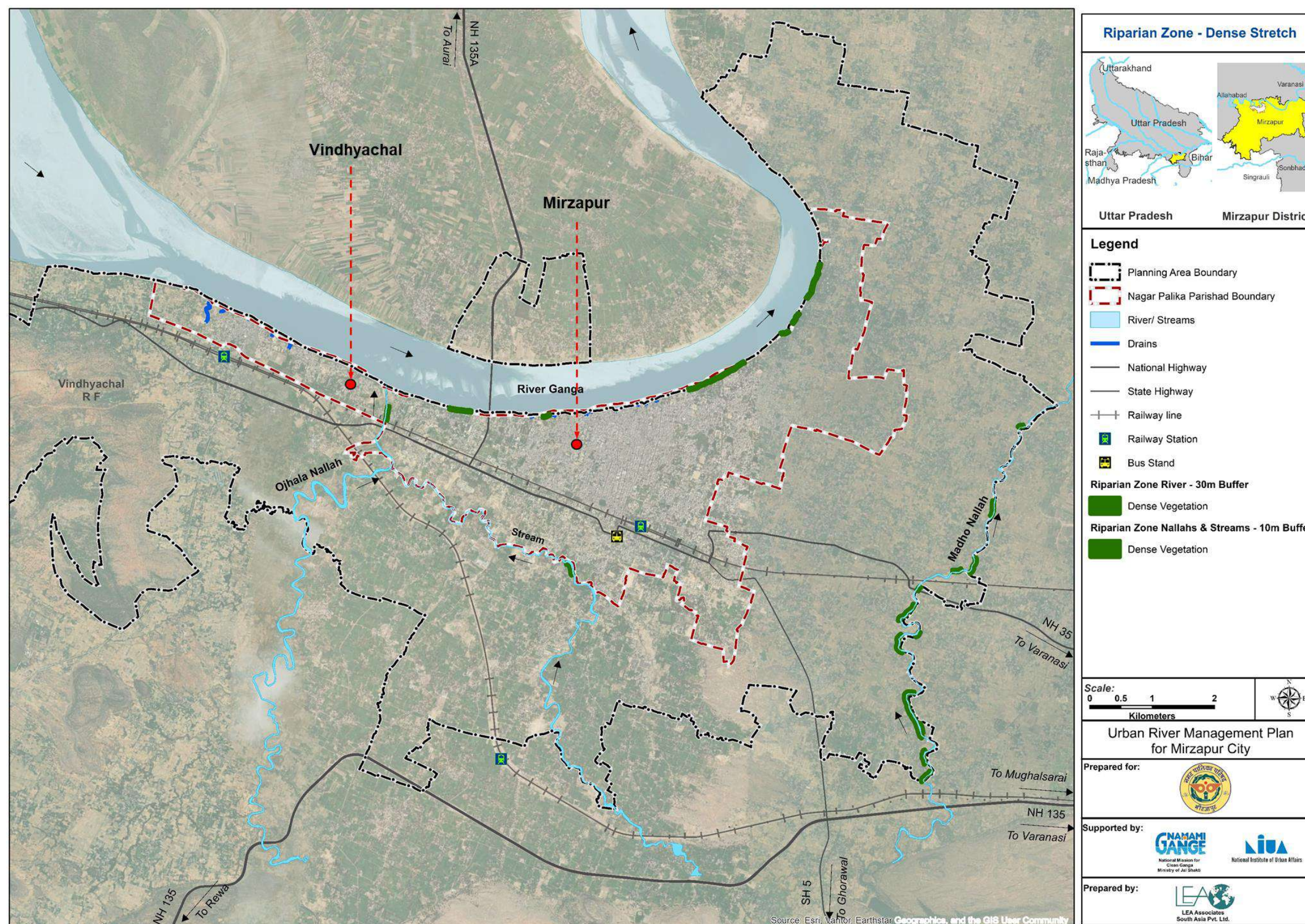
Collectively, these conservation zones must be safeguarded from unnecessary disturbance to ensure hydrological stability, biodiversity refuge and the integrity of Mirzapur’s cultural landscape.

The key management actions proposed for the existing riparian buffer along the River Ganga and other streams is presented below. These actions will help prioritize conservation of healthy stretches, restoration of degraded banks and targeted interventions to maintain ecological stability and long-term river resilience.

Recommendation for existing riparian stretch conservation and preservation

The study should be framed as a Cumulative Impact and Micro-Scale Ecological Resilience Study, moving beyond a simple baseline to directly inform spatial planning and zoning regulations for the upcoming Trans-Ganga development. The key recommended actions are given below:

- Integration of buffer width into flood plain zoning regulations.
- Prohibited Permanent construction mining, dumping and river bank encroachment.
- Gradual removal of invasive plants to avoid exposed bare soil
- Control grazing and fencing in sensitive stretches.
- GIS based habitat mapping, biodiversity surveys and hydrological flow analysis to establish ecological and hydrological baselines and geo fencing of buffer stretches.
- Periodic drone and satellite monitoring.
- Formation of Community level protection committee.
- Penalty, restoration liability and compensatory plantation for violation.
- Impact Assessment: Model cumulative effects on floodplain encroachment, runoff, water quality and habitat stress.
- Mitigation Plan: Implement zoning regulations, restoration frameworks and species-specific recovery strategies supported by nature-based solutions



Source: 1) Admin Boundaries: Mirzapur-Vindhyachal Masterplan 2031; 2) Municipal Boundary: Mirzapur Nagar Palika Parishad; 3) Consultant Analysis; 4) Transport Network: OSM

Map 7-5: Dense vegetation in Mirzapur planning area

7.5 OBJECTIVE 5: INTERVENTION FOR REUSE OF TREATED USED WATER

7.5.1 Intervention 9: Options for reuse of treated used water

As outlined in Section 4.2.1, Mirzapur zone operated three STP's with overall 31 MLD, the city of Mirzapur generates sewage from two major treatment facilities. At Pakka Pokhara, there are two STPs with a combined capacity of 22.5 MLD, an 8.5 MLD SBR-based STP and a 14 MLD UASB-based STP. At Bisunderpur, 8.5 MLD SBR-based STP (currently 4.5 MLD is received). Presently, treated effluent from the Bisunderpur STP is discharged directly into the River Ganga, while treated water from the Pakka Pokhara STPs is pumped into the Madho Nallah, which eventually drains into the River Ganga. Monitoring shows that effluent from the UASB-based STP has high BOD levels (20–30 mg/L), which is not acceptable under NGT norms, creating a compliance gap and environmental risk.

This underutilization represents a compliance gap, as per AMRUT 2.0 guidelines, which mandate that at least 20% of treated used water should be reused for irrigation, cooling, landscaping or industrial use. Currently, the reuse potential remains untapped, leading to missed opportunities for resource efficiency and sustainable water management.

Proposed Intervention:

To address this gap and initiate sustainable reuse, the following measures are proposed, focusing on the reuse potential of Mirzapur's STPs through multiple options.

Option A: Reuse of treated used water for cooling at Adani Power Plant, Khedi Khurd, Mirzapur

In accordance with MoEFCC notifications (2015, 2018) mandating the reuse of treated sewage water for thermal power plants located within 50 km of an STP, and AMRUT 2.0 guidelines requiring at least 20% reuse of treated used water, this intervention proposes the utilization of 27 MLD of treated sewage from three STPs to partially meet the cooling demand of the upcoming Adani Power Plant at Khedi Khurd, Mirzapur, situated approximately 35 km away. (Refer Map 7-6)

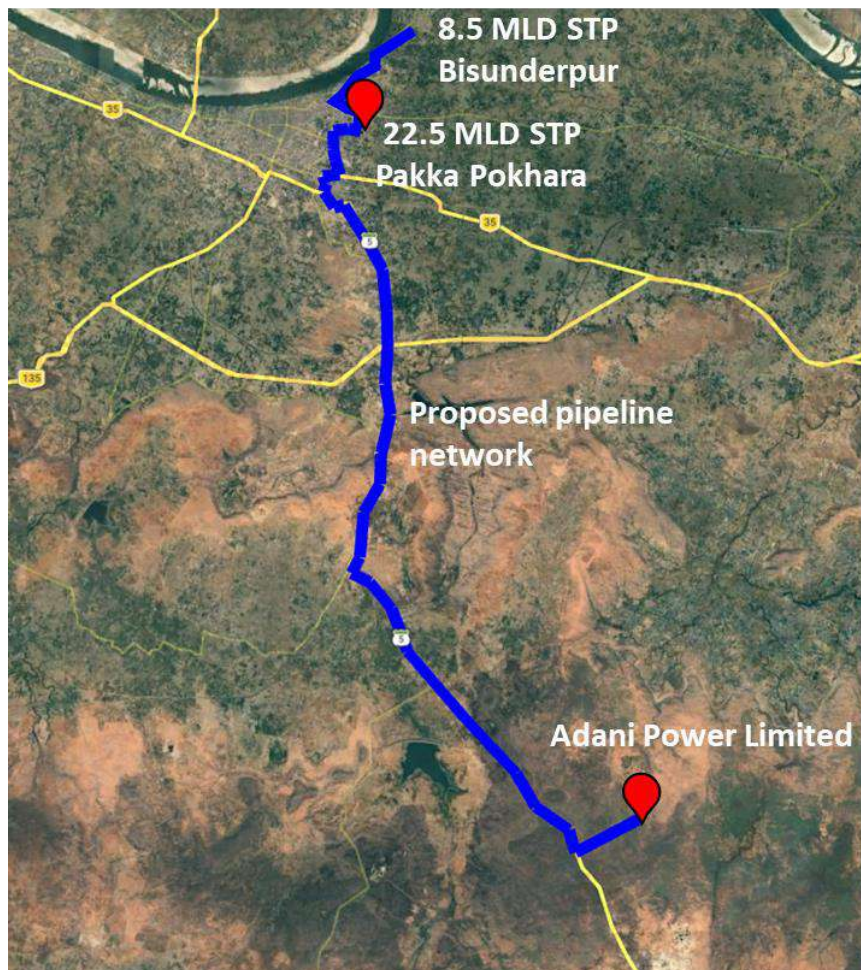
The Adani Power Plant at Khedi Khurd, Mirzapur is a 1,600 MW coal-based ultra-supercritical thermal project by Mirzapur Thermal Energy (UP) Pvt. Ltd., a subsidiary of Adani Power will supply 1,500 MW of electricity to Uttar Pradesh, and is under construction with commissioning expected between 2028 and 2030.

This integrated intervention will enable the productive reuse of treated sewage, reduce reliance on freshwater sources, prevent untreated discharge into the River Ganga, and strengthen both environmental compliance and industrial resilience. To enable sustainable reuse for industrial cooling, the following measures are proposed:

- **New Pumping Station:** An 8.5 MLD pump house will be constructed at the Bisunderpur STP to transfer treated sewage to the Pakka Pokhara pump house.
- **Secondary Treatment Facility:** The 14 MLD UASB-based STP at Pakka Pokhara will be upgraded with a 14 MLD SBR based secondary treatment system to achieve effluent quality of BOD < 10 mg/L (as mentioned in the intervention 3), making it suitable for cooling tower use.
- **Pump House Upgrade:** The existing pump house at Pakka Pokhara will be retained, with replacement of pump sets to ensure reliable operation.
- **Pipeline Network:** Approximately 35 km of 600 mm diameter ductile iron (DI) pipeline will be laid to convey treated used water from the STPs to the Adani Power Plant.

This integrated intervention will enable the productive reuse of 27 MLD of treated sewage, reduce reliance on freshwater sources, prevent untreated discharge into the River Ganga, and strengthen both environmental compliance and industrial resilience. The map below shows the proposed

preliminary alignment of the conveyance system. These details are indicative and will be further refined during the preparation of the Detailed Project Report (DPR), which will include hydraulic modelling, verification of land ownership and consultations with stakeholders.



Map 7-6: Proposed network for Industrial cooling demand from three STP's

Implementation Framework

Responsible agencies: Jal Nigam (Urban)	Estimated budget: ₹ 6800.00 Lakhs
Timeline: Mid Term 1-2 Years	Funding sources: Adani Power limited

Option B: Reuse of treated used water for horticulture in Mirzapur and Window fall range.

As an alternative reuse pathway, 27 MLD of treated sewage from three STPs can be diverted to forest land located approximately 25 km, where land is available in Mirzapur division discussed with the SDO,

Forest Division, Mirzapur. The terrain at this location is at a higher elevation than the city and features uneven slopes, making it suitable for ecological irrigation and slope stabilization.

Within the Mirzapur Forest Division, which comprises 8 ranges, the Mirzapur Range and Windaw Fall Range are nearby. In these ranges, treated used water can be supplied to three beats identified for irrigation:

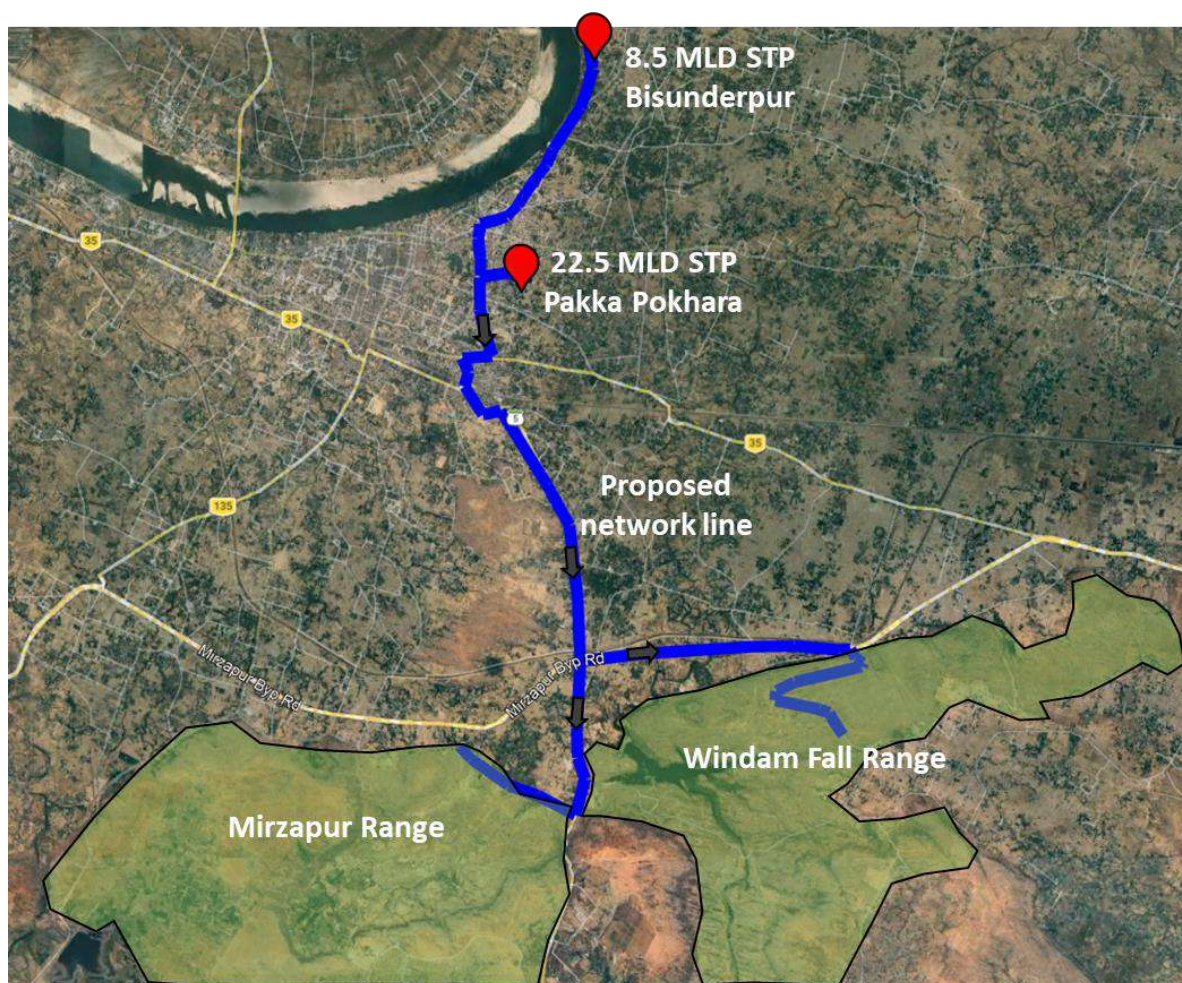
- Barkacha II (Mirzapur Range): 1,519.8 ha available.
- Danti I (Windaw Fall Range): 1,481.2 ha available.
- Danti III (Windaw Fall Range): 734.5 ha available.

The full 27 MLD availability can irrigate approx. 418.5 ha of forest land. Allocation of treated used water to specific beats will be finalized during the DPR stage, considering suitability, terrain, and ecological requirements

This intervention provides a nature-based reuse solution, complementing industrial cooling reuse by enhancing green cover, supporting afforestation, improving groundwater recharge, and reducing untreated discharge into the River Ganga. It also aligns with the AMRUT 2.0 mandate for treated used water reuse.

For supply of treated used water to the forest area, the same components proposed under Option A - namely pumping stations, secondary treatment facility, pump house upgrade and pipeline network with 600mm diameter ductile iron (DI) pipeline are required, with adjustments in pipeline length and diameter to suit horticulture needs.

This integrated intervention will enable the productive reuse of 27 MLD of treated sewage, reduce reliance on freshwater sources, prevent untreated discharge into the River Ganga, and strengthen both environmental compliance and ground water. The map below shows the proposed preliminary alignment of the conveyance system. These details are indicative and will be further refined during the preparation of the Detailed Project Report (DPR), which will include hydraulic modelling, verification of land ownership and consultations with stakeholders.



Map 7-7: Proposed network for irrigation of forest land from three STP's

Implementation Framework

Responsible agencies: Jal Nigam and Forest dept	Estimated budget: ₹ 5000.00 Lakhs
Timeline: Mid Term 1-2 Years	Funding sources: SUDA, CAMPA & AMRUT

The detailed costing of these above interventions is given in Annexure 20.

7.5.2 Intervention 10: Reuse of treated water from 7 MLD STP at Vindhyachal

As outlined in Section 4.2.2, Vindhyachal zone operates a 7 MLD Sewage Treatment Plant (STP). At present, the plant treats approximately 4 MLD of used water daily, but none of the treated water is being utilized for productive activities in the surrounding area.

This underutilization represents a compliance gap, as per AMRUT 2.0 guidelines, which mandate that at least 20% of treated used water should be reused. Currently, the reuse potential remains untapped, leading to missed opportunities for resource efficiency and sustainable water management.

Proposed Intervention:

To address this gap and initiate sustainable reuse, the following measures are proposed, focusing on the reuse potential of the Vindhyachal STP:

- **Reuse in Irrigation:** Approximately 2.5 MLD of treated sewage from the 7 MLD STP at Vindhyachal will be supplied to about 5 hectares of agricultural land adjacent to the facility. This ensures productive utilization of treated water, reduces freshwater demand, and demonstrates sustainable reuse practices in line with AMRUT 2.0.
- **Pipeline Network:** A 300mm ductile iron (DI) pipeline of approximately 700 m length will be laid to convey treated sewage directly from the STP outlet to the designated irrigation land. The pipeline alignment will be designed to minimize land disturbance and ensure hydraulic efficiency. Provision for inspection chambers and flow-control valves will be included to regulate supply and prevent leakage.
- **Irrigation Coverage:** The intervention will provide reliable irrigation coverage for 5 hectares of farmland, supporting crop productivity and reducing dependence on freshwater sources. By integrating treated used water into agriculture, the project promotes resource efficiency, circular water use, and compliance with reuse mandates.

The Map 7-8 shows the proposed irrigation coverage area and the preliminary alignment of the conveyance system. These details are indicative and will be further refined during the preparation of the Detailed Project Report (DPR), which will include hydraulic modelling, verification of land ownership and consultations with stakeholders.



Map 7-8: Proposed Pipeline for reuse of treated used water from 7MLD STP

Implementation Framework:

Responsible agency:
Nagar Palika Parishad, Mirzapur

Estimated budget:
₹ 21.00 Lakhs

Timeline:
Short term
1-3 months

Funding sources:
SUDA, Municipal Budget

The detailed costing of these above interventions is given in Annexure 21.

7.6 OBJECTIVE 7: DEVELOP ECO-FRIENDLY RIVERFRONT PROJECTS

7.6.1 Intervention 11: Provision of Essential Public Amenities

Under Objective 7 of the URMP, upgrading physical infrastructure and public amenities at key riverfront locations is prioritized to enhance the visitor experience, ensure public hygiene and protect the religious and ecological sanctity of the river. These high-footfall areas lack organized facilities, leading to discomfort for pilgrims and contributing to non-point source liquid and solid waste pollution.

Nar Ghat has been selected as a demonstrative pilot site to showcase the standardized amenity upgrades planned across the city's riverfront. The proposed interventions at Nar Ghat are categorized into four functional areas: Visitor Comfort, Sanitation and Waste Management, Flood-Resilient Asset Management and Safety. The key interventions at Nar Ghat are presented in the – below and explained in the subsequent paragraphs.

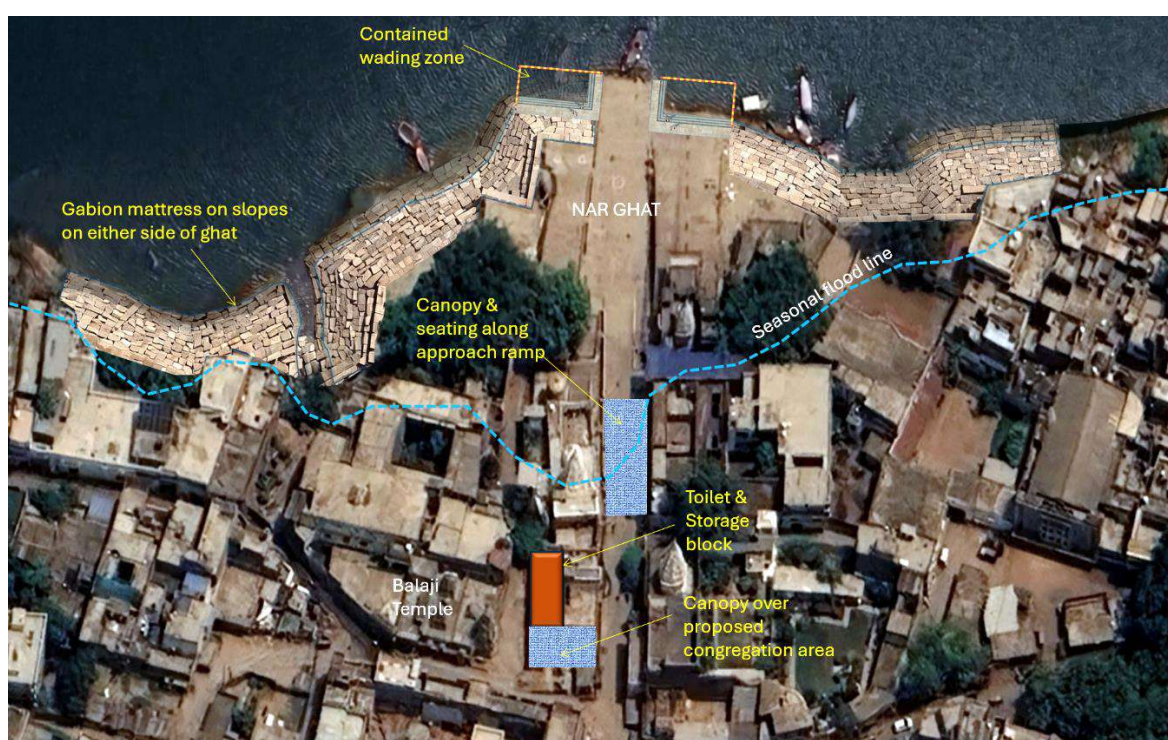


Figure 7-6: Key interventions at Nar Ghat

Enhancing Visitor Comfort: To provided visitor comfort at the ghats the following interventions are proposed:

1. **Weather-Resilient Canopies-** Installation of durable overhead canopies along primary approach pathways (Refer Picture 7-4) and congregational nodes (Refer Picture 7-5). This infrastructure is critical for providing devotees and tourists with shade during the intense summer months and necessary shelter during the monsoon season, thereby ensuring year-round accessibility.



Picture 7-4: Before & After Provision of canopy along approach pathway of Nar Ghat



Picture 7-5: Before & After Provision of canopy at congregational node Nar Ghat

2. Dedicated Public Seating- Strategic installation of sturdy, weather-resistant benches along the ghat pathways and viewing platforms. This addresses the needs of elderly visitors, pilgrims carrying out lengthy rituals and tourists, fostering a more accommodating and inclusive public space.

Sanitation and Waste Management: To ensure adequate sanitation and waste management facilities at the ghat the following interventions are proposed:

1. 'Kalash' Receptacles for ritual waste- To effectively address the specific issue of floral and ritualistic waste being dumped directly into the river or overflowing from standard bins, the URMP proposes the deployment of culturally contextual 'Kalash' shaped bins. These visually appealing, designated receptacles replace unsightly open dumpsters, actively encouraging devotees to dispose of sacred waste respectfully. This facilitates better downstream segregation and composting of organic religious waste.



Picture 7-6: Before – After: Steel receptacles replaced with Kalash receptables for ritualistic waste

2. **Public Toilet Facilities-** Construction and integration of accessible, easily maintainable public toilet blocks near the ghat steps. This is a fundamental requirement to eliminate open defecation/urination and maintain high sanitation standards in densely populated congregational areas.

Climate Resilience and Asset Protection: To protect the ghat assets located below seasonal flood line the following provision has been made:

1. **Elevated Storerooms-** The proposal includes the construction of dedicated storerooms situated at safer and higher elevation. These secure areas are designed explicitly for the rapid disassembly and storage of mobile infrastructure, temporary barricades and maintenance equipment during flood events, thereby minimizing capital loss and post-flood recovery times.
2. **Gabion mattress protection-** The ghat edges are presently protected using sandbags on the slope of riverbanks. It is proposed that gabion mattress riverbank protection measures be provided for a length of above 30 meters along the riverbank on either side of the Nar Ghat. The upstream and downstream ends shall be keyed into the natural bank inside a minimum 1.5-meter terminal anchor trench. At the bottom the gabion mattress shall terminate into a horizontal launching apron at the riverbed level to prevent scour.

Proposed Infrastructure and Safety Interventions: To establish a secure environment for all visitors, the intervention strategy is categorized into three critical components: physical infrastructure, information systems and emergency readiness.

A. Structural Safety and Access Management

- o **Continuous Handrails:** Robust, continuous handrails are already provided along the central stairways. The same shall be installed along the flanking stairways to provide essential stability and support, particularly for elderly and vulnerable visitors navigating the steep incline.
- o **Water's Edge Barrier:** Implementation of fixed physical barriers (railings) at the lower terminal steps to physically prevent accidental slips or falls directly into deep water zones.
- o **Contained Wading Zones:** Creation of highly regulated and safe wading areas for ritualistic bathing. These zones will be enclosed using high-visibility boundary buoys and reinforced with anti-slip surface treatments on the submerged steps to prevent accidents.

B. Information, Education and Communication (IEC)

- o **Multilingual Safety Signage:** Deployment of prominent "Ghat Safety Guide" signboards at primary entry points and viewing platforms. These will clearly communicate critical rules, including no-diving policies, warnings regarding current danger and general water safety protocols in multiple local languages.
- o **Integrated Depth Markers:** Application of visible depth indicators directly onto the steps to provide dynamic visual warnings to bathers as seasonal water levels fluctuate.

C. Emergency Response and Maintenance

- o **Life-Saving Equipment Deployment:** Strategic placement of highly visible lifebuoys (life rings) at regular, easily accessible intervals along the lower water's edge barriers to ensure immediate availability during a water emergency.
- o **First-Aid Kiosk:** Establishment of a dedicated first-aid response kiosk situated strategically near the upper temple complex to facilitate rapid medical assistance.
- o **Solid Waste Removal:** Solid waste removal should be taken up as detailed in intervention 6.



Picture 7-7: Provision of safety arrangements at Nar Ghat

Implementation Framework:

Responsible agencies:

NPP, Mirzapur; Supporting Agencies: NMCG, SHGs, NGOs, educational institutions

Estimated budget:

₹48.39 lakh

Timeline:

Short term
1-5 months

Funding sources:

1. **IEC Budget:** Nagar Nigam & Namami Gange
2. **CSR:** Railways, forest industries, local banks
3. **Community:** RWAs & heritage NGOs.

The detailed costing of these above interventions is given in Annexure 22.

7.7 OBJECTIVE 9: INCULCATE RIVER-SENSITIVE BEHAVIOR AMONG CITIZENS

The interventions under Objective 9 are designed to embed ecological awareness and cultural pride into everyday practices, ensuring citizens adopt river-sensitive behavior. From awareness campaigns and eco-clubs to storytelling corners, smart signages and annual river festivals, these measures collectively strengthen emotional, cultural and behavioral ties with River Ganga. The detailed interventions are listed in the sections below.



Figure 7-7: River-sensitive practices and cultural awareness

7.7.1 Intervention 12: River Awareness Campaign – “Meri Nadi, Mera Shahar”

The river and stream in Mirzapur are not yet fully integrated into the daily consciousness of citizens. Current IEC initiatives primarily focus on general cleanliness under the Swachh Bharat Mission, with minimal focus on river-specific awareness. As a result, several critical gaps have been identified:

- Lack of dedicated river-centric IEC infrastructure such as murals, interpretive signage, kiosks and digital platforms.
- Weak visibility of river heritage and biodiversity in awareness campaigns.
- Minimal citizen engagement beyond rallies and one-off events, leaving stewardship opportunities untapped.

Proposed Intervention:

- Radio Jingles:** Develop catchy, multilingual jingles in Hindi and English to broadcast river conservation messages across local FM channels.
- Street Plays:** Organize nukkad natak in markets, colonies and public spaces dramatizing issues like plastic pollution, waste dumping and river health at junctions in sadar bazar, Rahi tourist bungalow area and Hanumant dham.
- Wall Art Murals:** Commission murals at ghats, bridges and busy public walls depicting river heritage, biodiversity and conservation slogans.
- Digital Outreach:** Create WhatsApp broadcast groups to share short videos, event updates and citizen pledge campaigns.

- **Community Engagement:** RWAs, shopkeepers and NGOs will be mobilized to co-host events, ensuring broad participation.
- **Monitoring:** Campaign reach will be tracked through participation counts, social media engagement and feedback surveys.

Frequency: The campaign will be conducted on a quarterly basis, ensuring regular outreach and sustained engagement throughout the year.

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 23.

7.7.2 Intervention 13: Distribution of Biodegradable Offering Kits at Sacred Sites in Mirzapur city

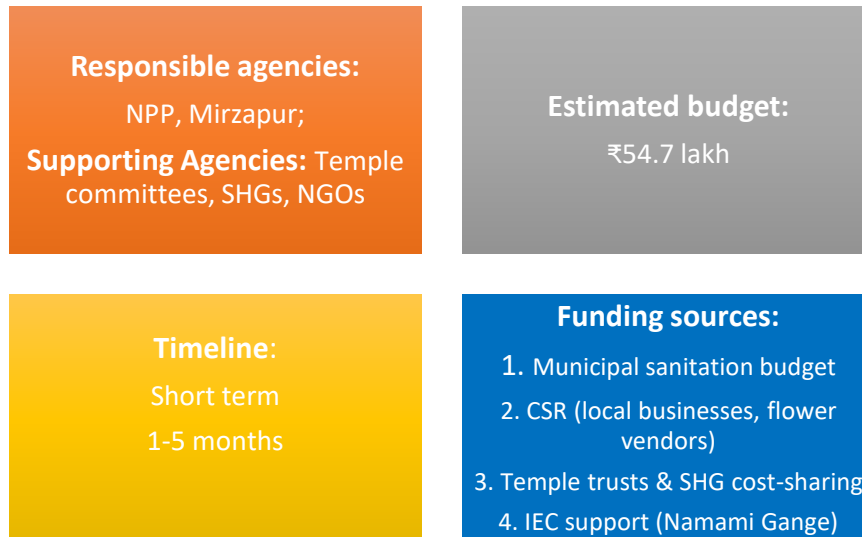
Ritual practices along River Ganga in have become a significant source of water quality degradation, particularly during the lean flow period when the rivers carry less water. While these practices hold deep cultural and spiritual value, they often involve the immersion of materials such as plastic, synthetic fabrics, thermocol items and non-biodegradable packaging, which accumulate along the riverbanks during the festivities. Over time, this leads to visible waste deposits, foul odors and deterioration of aquatic ecosystems.

Proposed Intervention:

- ▶ **Biodegradable Ritual Kits:** Introduce kits comprising dried flowers and compostable containers.
- ▶ **Distribution Channels:** Ensure availability through Self-Help Group (SHG) kiosks in major festival congregation points.
- ▶ **IEC Activities:** Promote ecological values embedded in religious practices through targeted Information, Education and Communication (IEC) campaigns, with slogans prominently displayed at distribution points.
- ▶ **Awareness and Advocacy:** Conduct awareness drives in collaboration with priests and temple committees to encourage adoption among devotees.

- ▶ **Community Participation:** Train SHGs to prepare and package kits, thereby fostering livelihood opportunities and strengthening community ownership.
- ▶ **Monitoring and Evaluation:** Municipal staff will monitor kit usage during festivals to assess reductions in plastic waste and track behavioural change.

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 24.

7.7.3 Intervention 14: River Storytelling Corners for community-led narratives and cultural connection

Cultural and heritage connections to the river in Mirzapur is overlooked. Current campaigns emphasize cleanliness but neglect emotional and historical ties. As a result, several critical gaps have been identified:

- a. Lack of platforms for cultural and biodiversity storytelling to highlight river heritage.
- b. Absence of interactive community spaces (story circles, heritage boards) at ghats.
- c. Minimal involvement of elders, students and cultural groups in river awareness, limiting intergenerational learning.

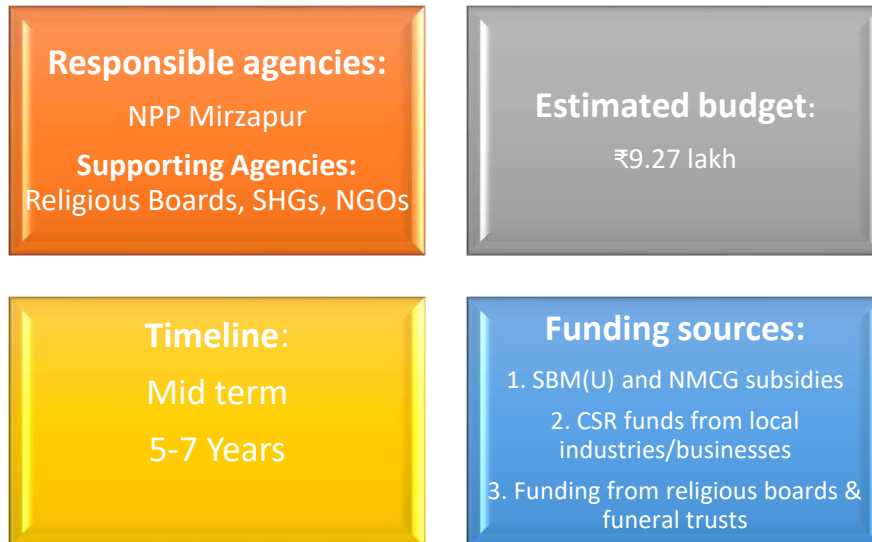
Proposed Intervention:

- **Story Circles & river heritage board:** Host weekly storytelling sessions at ghats and parks led by historians, elders and other community people at ghats majorly and in major temples. Install illustrated panels at ghats narrating myths, local histories, biodiversity facts and folk tales.
- **Cultural Performances:** Collaborate with local groups to perform traditional songs, poems and folk narratives about rivers at ghats during evenings were high flow of visitors.
- **Digital story walls:** Install QR codes boards linking to audio/video recordings at storytelling corners with heritage stories, biodiversity facts and legends accessible via mobile devices.
- **Digital Archiving:** Record and preserve stories in audio/video format for wider dissemination.
- **Community Engagement:** RWAs, schools and NGOs to be involved in curating and presenting stories.

- **River Story Festivals:** Organise annual events showcasing plays, folk dance and exhibition on river heritage.
- **Training Story Facilitators and Workshops for Teachers:** Train local youth and cultural groups to moderate storytelling circles. Equip educators with river heritage modules to integrate into school curricula.

Frequency: The storytelling sessions will be held bi-monthly, ensuring regular cultural engagement and continuity throughout the year.

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 25.

7.7.4 Intervention 15: Behavioral Nudges through Smart Signages at Sacred Sites in Mirzapur city

- a. Despite repeated awareness campaigns, behavioral change in Mirzapur remains weak. Citizens often revert to old practices once events conclude. The key gaps identified include: Absence of river-focused signage or behavioural nudges at drains, ghats and solid waste dumping hotspots.
- b. IEC awareness remains generic and lacks behavioural science-based cues to discourage pollution.
- c. Limited monitoring and reinforcement mechanisms to sustain long-term behavioural change.

Proposed Intervention:

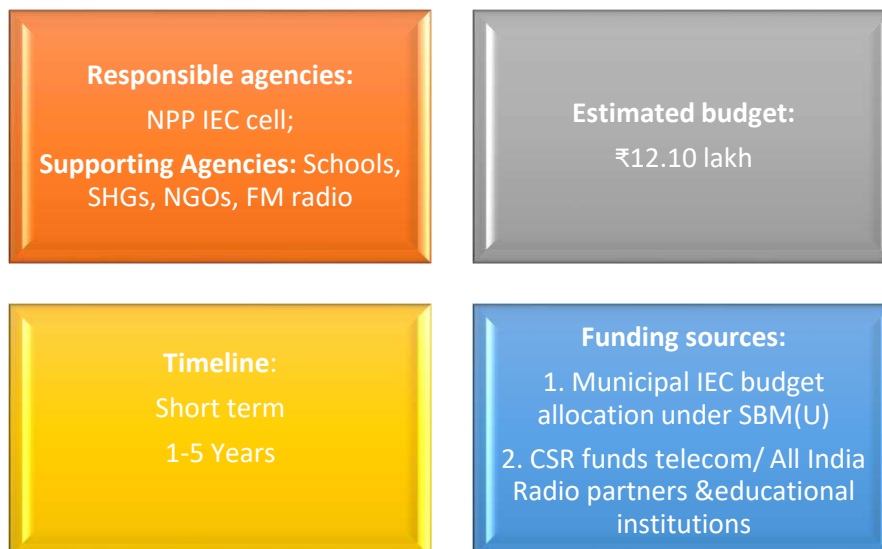
- **Creative Signboards:** Install durable, weather-resistant signages/ murals at nallahs, ghats and solid waste dumping hotspots with impactful messages discouraging littering.
- **Behavioural Science Design and River ecology Awareness Boards:** Incorporate social norm cues (“Most citizens keep this ghat clean”), positive reinforcement and eye-catching visuals to influence behavior.
- **Targeted Messaging:** Customize signages for commuters, slum areas and market users with practical, context-specific call of action.
- **Community Involvement:** Engage RWAs and SHGs to identify priority locations and co-design culturally relevant messages.

Frequency: The signages will be installed as a one-time intervention with maintenance and review conducted quarterly to ensure their effectiveness and condition.



Picture 7-8: A concept design of Behavioral Science Design and River ecology Awareness board

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 26.

7.7.5 Intervention 16: Faith-Based Engagement – Temple & Mosque Drives

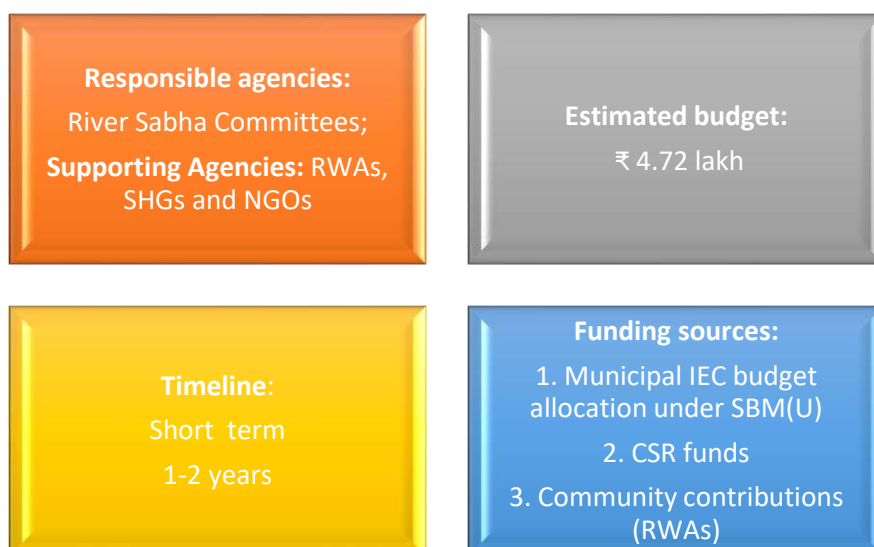
Religious practices along the river in Mirzapur often contribute to pollution, particularly through the use of non-biodegradable materials. While priests and imams hold influence within their communities, their active involvement in river stewardship remains limited. The key gaps identified are:

- a. Lack of eco-friendly rituals and environmental awareness during religious events.
- b. Weak collaboration between religious leaders and municipal authorities.
- c. Absence of clean-up drives aligned with festive seasons.
- d. Limited use of digital tools for IEC dissemination and citizen engagement.

Proposed Intervention:

- Collaborate with priests, imams and religious leaders to promote eco-conscious rituals during festivals and riverbank ceremonies.
- Facilitate sermons and community talks focused on river cleanliness and the harmful impact of waste dumping.
- Encourage the use of biodegradable offerings and discourage plastic and hazardous waste near riverbanks.
- Coordinate clean-up drive activities before, during and after major religious festivals.
- Adapt successful initiatives such as Namami Gange's "Ghat Par Prarthana" to the local context.

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 27.

7.8 OBJECTIVE 10: ENGAGE CITIZENS IN RIVER MANAGEMENT ACTIVITIES

Objective 10 focuses on active citizen participation and structured stewardship of the rivers in Mirzapur. Through River Sabha Committees, creative competitions, street plays and clean-up drives, these interventions institutionalize community involvement, empower residents and youth and strengthen accountability in river governance.



Figure 7-8: Citizen participation in river management

7.8.1 Intervention 17: Formation of River Sabha Committees at City-Level

One of the most pressing environmental challenges in Mirzapur is the dumping of solid waste in River Ganga, degrading the water quality and undermining the ecological health of the river. Community participation in river governance remains fragmented, with limited platforms for collective decision-making. Existing structures such as RWAs and SHGs lack defined responsibilities, resulting in weak engagement and minimal accountability.

- ▶ No formal citizen-led body for river stewardship to coordinate community efforts or provide continuity in monitoring.
- ▶ Weak accountability and transparency in reporting violations such as dumping of solid waste in Nallahs and rivers.

Proposed Intervention:

- ▶ Establish River Sabha Committees at city and ward levels with defined roles and responsibilities.
- ▶ The committee shall comprise of SHGs, youth leaders, RWAs and ward officials to ensure diverse representation.
- ▶ Identify dumping hotspots, cattle bathing points and nallahs discharging into rivers,
- ▶ Committees shall integrate reporting into SBM/URMP dashboards for transparency and accountability.

- ▶ Volunteers shall be trained as to conduct awareness drives, monitor violations and report issues.
- ▶ NSS/NCC units shall be mobilized for monthly riverbank clean-up campaigns, coordinated through the committees.
- ▶ Committees shall hold quarterly meetings to review progress, share updates with municipal authorities and recommend corrective actions.

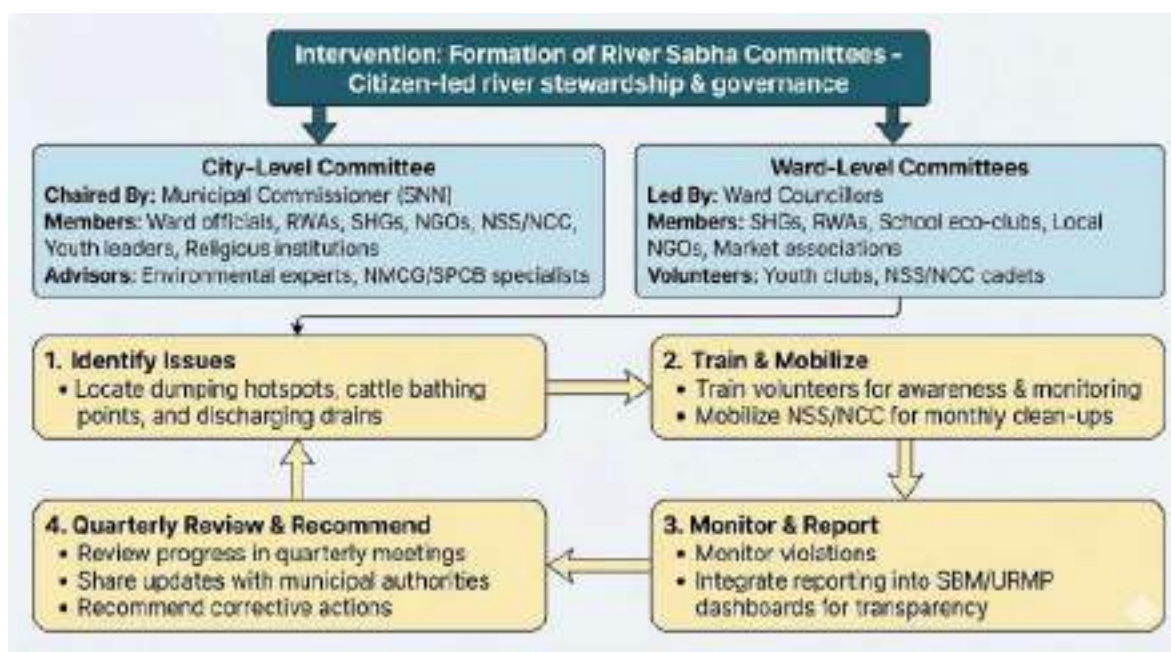
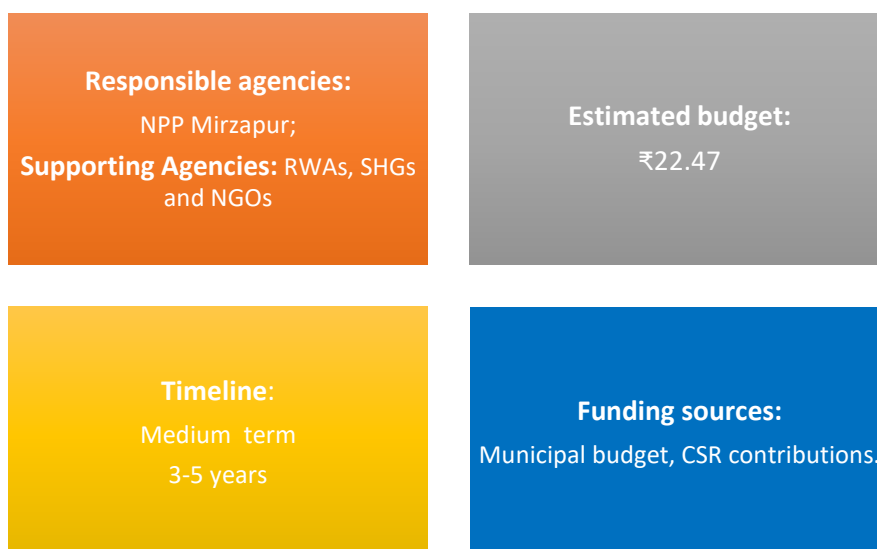


Figure 7-9: Composition of Committee and working model

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 28.

7.8.2 Intervention 18: River Festival – “Mirzapur Jal Mahotsav”

In Mirzapur, there is no dedicated cultural anchor for river awareness. Citizen participation remains sporadic, with limited integration of schools, RWAs and NGOs. The gaps identified are:

- Absence of a structured “River Day” or annual festival to institutionalize river pride.
- Citizen participation remains event-driven and irregular, with limited continuity.
- Weak integration of schools, RWAs and NGOs into cultural programmes, reducing visibility and ownership.

To institutionalize river awareness through an annual cultural festival that blends ecology, heritage and community participation. The festival will serve as a flagship event to celebrate Mirzapur’s river, promote eco-friendly practices and strengthen citizen engagement.

Proposed Intervention:

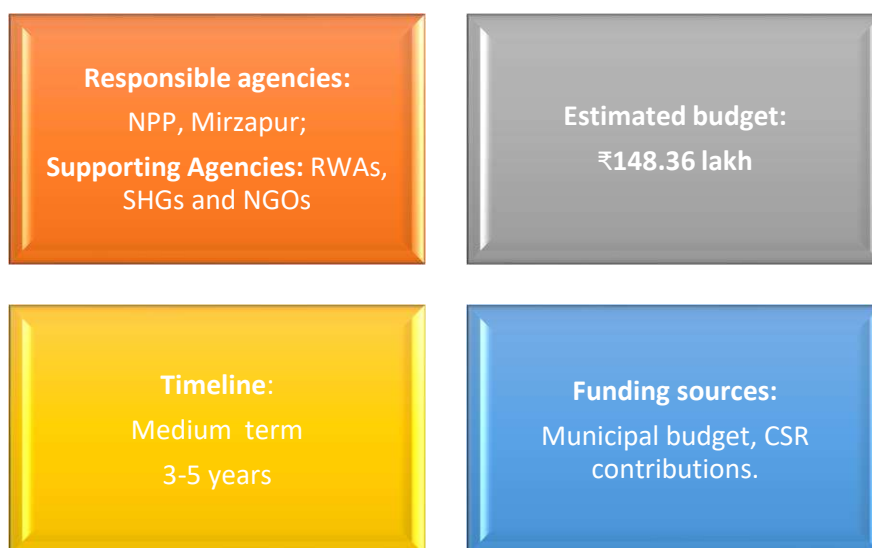
- Host annual river festival featuring cultural programs, eco-product stalls (4-per ghat) and exhibitions.
- Organize school debates, poster-making and eco-art competitions on river themes.
- Promote sustainable crafts and goods by local artisans through eco-stalls.
- Conduct guided river walks, folk dances and storytelling sessions highlighting river heritage.
- Publish annual reports documenting participation, ecological pledges and cultural outcomes.
- Engage RWAs, schools, NGOs and religious groups as co-hosts events to ensure inclusivity.

Frequency: The river festival to be celebrated annually highlighting river conservation and cultural celebration.



Figure 7-10: Annual River festival: organization and activity flow

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 29.

7.8.3 Intervention 19: Youth Internship Program – “River Warriors”

College students in Mirzapur have limited structured opportunities to engage in river management. While youth participation exists during events, it lacks continuity, skill-building and institutional recognition. The following gaps have been identified:

- a. Absence of formal internship or volunteer programs dedicated to river stewardship and solid waste management
- b. Limited integration of youth into IEC campaigns and field-based activities.
- c. Low visibility and inadequate recognition of youth contributions to river health.

Proposed Intervention:

Launch the “River Warriors” Internship Program to provide hands-on experience engage college students in river management activities.

- Offer short-term internships involving IEC campaigns, surveys and awareness drives.
- Offer skill-building opportunities through field experience, data collection and community engagement.
- Recognize contributions with certificates to enhance academic and career profiles.
- Partner with colleges and youth organizations for recruitment and outreach.

Frequency: Conduct internship program bi-annually, allowing two cohorts per year for sustained engagement and continuous contribution to river health initiatives.



Figure 7-11: Flow chart of Youth Internship Program

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 30.

7.8.4 Intervention 20: Community Composting & Waste Segregation Workshops

Waste segregation and composting practices in Mirzapur remain inconsistent. Households and community groups lack practical training and awareness, leading to informal disposal into nallahs and riverbank. As a result, several critical gaps have been identified:

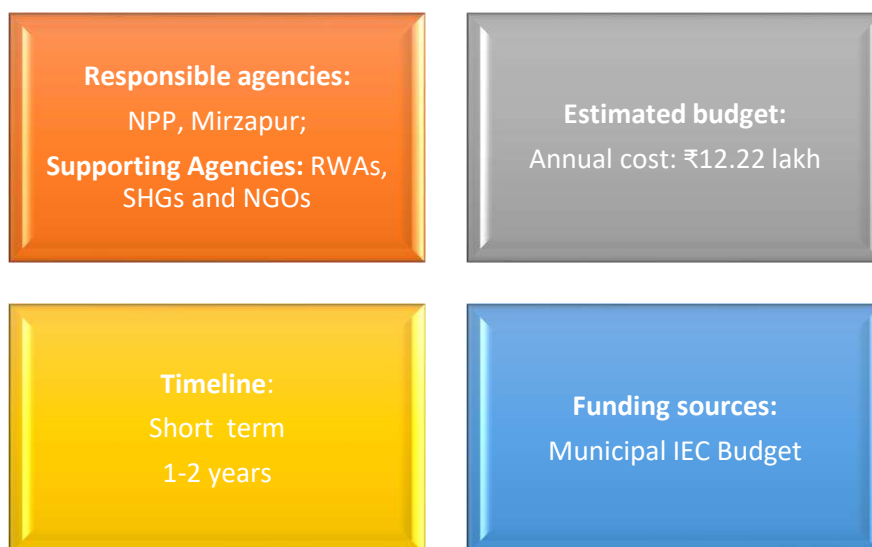
- Limited hands-on training for composting and segregation at the source.
- Weak engagement of SHGs and RWAs in sustainable waste practices.
- Absence of community success stories to motivate wider adoption.

Proposed Intervention:

- Conduct hands-on workshops for households on composting organic waste and segregation at source.

- Conduct live training during RWA and SHG meetings.
- Train participants in various composting techniques suitable for home and community setups.
- Educate on reducing waste entering drains through effective segregation.
- Share success stories to motivate wider community adoption.

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 31.

7.8.5 Intervention 21: River Clean-Up Drives – “Nadi Mitra Abhiyan”

Riverbank clean-up activities in Mirzapur are currently irregular and largely event-driven. While some drives have been organized under Namami Gange and SBM, they lack continuity, structured citizen ownership and systematic documentation. This has resulted in several critical gaps:

- a. Absence of regular, institutionalized clean-up drives along riverbanks and ghats.
- b. Limited integration of citizen contributions into municipal reporting systems.
- c. Low visibility and recognition of community participation, reducing motivation for sustained involvement.
- d. Lack of structured adoption of river stretches by RWAs, schools, or NGOs for long-term stewardship.

Proposed Intervention:

- Use banners, loudspeaker announcements and social media outreach to mobilize citizens for monthly clean-up drives.
- Organize community-led clean-up drives focusing on removing waste from riverbanks, ghats and adjacent areas.
- Engage students, RWAs, NGOs and youth clubs as core volunteer groups driving the campaign.
- Encourage RWAs and schools to adopt specific stretches of the riverbank for continuous stewardship.
- Provide eco-leadership badges, certificates and public acknowledgment to active participants.

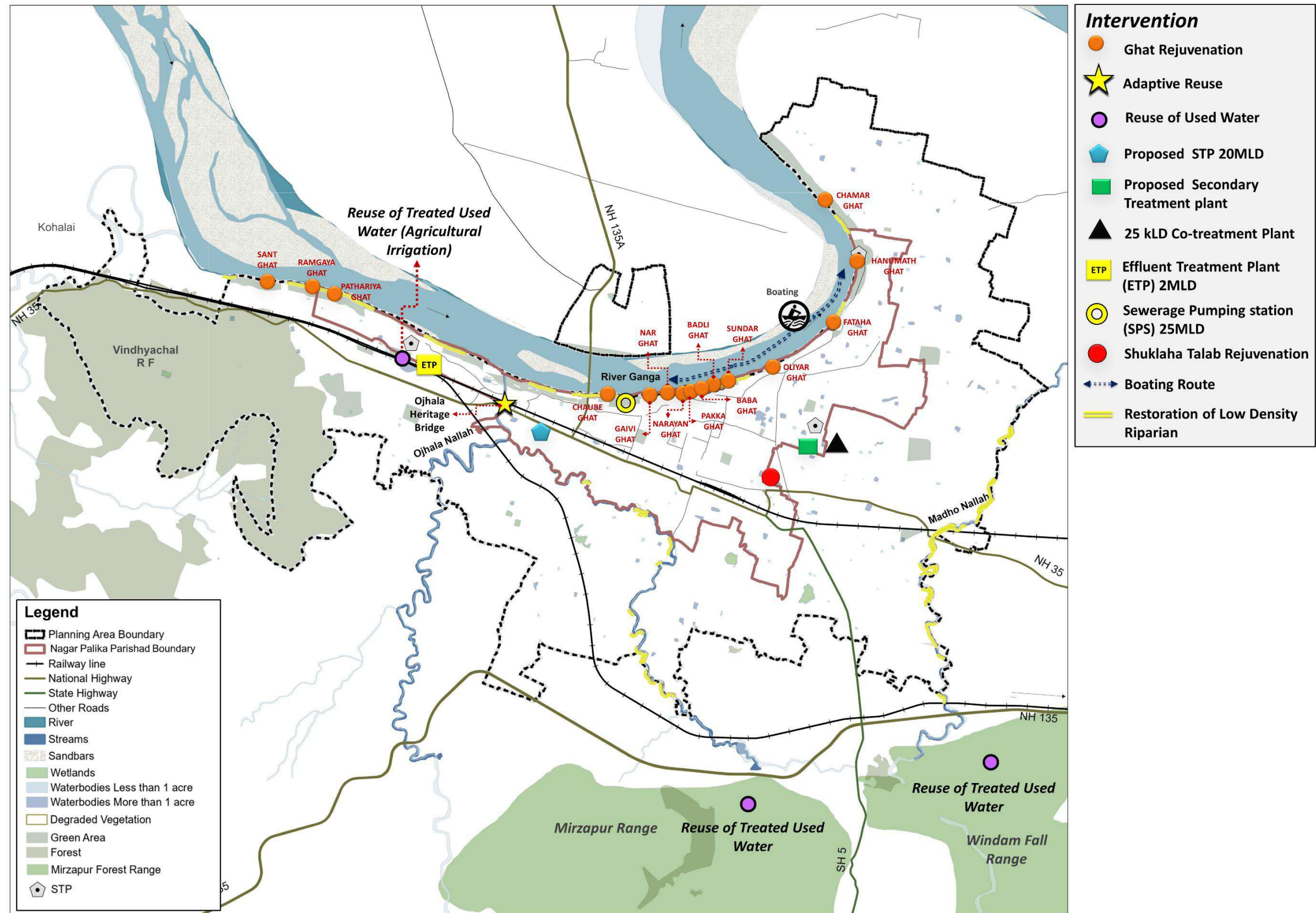
- Ensure proper segregation and disposal of collected waste through official municipal channels, linked to SBM/URMP dashboards.
- Record and document each drive with before-and-after photos and share results in community meetings to encourage pride and sustained participation.

Frequency: Bi-monthly operational drives

Implementation Framework:



The detailed costing of these above interventions is given in Annexure 32.



ANNEXURES

Annexure 1: Steering Committee - Minutes of the Meeting

Minutes of Meeting (MOM)

for

State level Workshop on Preparation of 'Urban River Management Plans (URMP) in Uttar Pradesh

Meeting Date and Time: 3rd May, 2025, 11:00 am-2:00 pm
Venue: Swati Conference Hall, Office of Directorate of ULBs,
Gomti Nagar, Lucknow, Uttar Pradesh

1. Participants

- a) Sh. Nalin Kumar Srivastava, Deputy Director General, NMCG
- b) Sh. Anuj Kumar Jha, Director Local Bodies and Secretary, Urban Development Department, Govt. of Uttar Pradesh
- c) Sh. Dheeraj Joshi, Director, NMCG
- d) Sh. Sumit Chakraborty, Urban Lead, NMCG
- e) Sh. Anil Kumar Gupta, Technical Advisor, SMCG-UP
- f) Sh. Mithilesh Mishra, SMCG-UP
- g) Sh. Bipin Kumar Misra IAS, Municipal Commissioner, Shahjahanpur
- h) Sh. Vikas Kumar, Executive Officer, Bijnor
- i) Sh. G. Laal, Executive Officer, Nagar Palika Parishad, Mirzapur
- j) Sh. Avinash Pratap Singh, Asst. Municipal Commissioner, Gorakhpur
- k) Sh. Omesh Kumar, Asst. Engineer, Mathura Vrindavan
- l) Sh. SFA Zaidi, Chief Engineer, Kanpur Nagar Nigam
- m) Sh. Punit Ojha, Chief Engineer, Ayodhya Nagar Nigam
- n) Sh. Uttam Verma, Nodal Officer, Prayagraj URMP
- o) Sh. Rahul Sachdeva, lead, URMP for 60 Ganga basin Cities, NIUA
- p) Ms. Simranpreet Kaur, Urban Environment Specialist, NIUA
- q) Sh. Chandrashekhar Sinha, Team lead, LEA Associates
- r) Additional participants from SMCG, Directorate of ULBs-UP and supporting members with the city representatives

2. Introduction

The state level meeting focussed on discussing strategies and actions for integrating river-centric approaches into urban planning across selected five cities in Uttar Pradesh – Bijnor, Mathura-Vrindavan, Mirzapur, Gorakhpur and Shahjahanpur. The meeting included senior officials from NMCG (New Delhi), Directorate of ULB (Uttar Pradesh), SMCG (Uttar Pradesh), NIUA (New Delhi) and Commissioners/Eos/Chief Engineers and other officials from the eight cities (including Kanpur, Ayodhya and Prayagraj for which URMPs are already prepared)

3. Discussions and deliberations:

- a) The meeting commenced with introductory remarks by the Deputy Director General, NMCG. He outlined the importance of the URMP initiative in enhancing the ecological, cultural, and infrastructural landscape of river cities. He further underscored the need to promote circular economy principles, with a focus on the reuse of treated used water, improved solid waste management, and river-centric master planning. Advocating the need for stakeholder engagement and convergence of resources from schemes like AMRUT, NMCG, World Bank, and State-level initiatives to support implementation, he emphasized

on vertical integration of river management plans at various levels: River Basin Management Plan (RBM), District Ganga Plans (DGP) and Urban River Management Plans (URMP).

- b) Thereafter NIUA presented the framework for preparing URMPs for the five cities as mentioned above. The importance of context-specific strategies, proactive coordination at city-level, and alignment with existing state and local initiatives undertaken for restoration of river and its ecosystem was highlighted.
- c) During the session on city reflections, Commissioners, Executive Officers and Senior representatives from the eight cities shared their progress, challenges, and future plans with respect to rivers and their associated eco-systems within their respective cities.
 - i. **Sh. Bipin Kumar Misra IAS, Municipal Commissioner- Shahjahanpur** flagged the issue of unregulated sand mining across its two rivers- Garrah & Khanaut, with jurisdiction overlapping between the Municipal Corporation and Development Authority.
 - ii. **Sh. Vikas Kumar, Executive Officer- Bijnor** highlighted the potential for ecotourism through a Dolphin Safari and outlined the city's unique context as a cane-industry hub. While Bijnor has a functioning 20 KLD FSTP, household-level connectivity to treatment infrastructure remains a gap.
 - iii. The **Assistant Engineer from Mathura-Vrindavan** expressed concern over the discharge of untreated industrial wastewater into the southern Yamuna stretch. The discussion emphasized on the need for decentralized treatment infrastructure and stricter enforcement mechanisms.
 - iv. **Sh. G. Laal, Executive Officer- Mirzapur**, discussed about challenges related to riverbank erosion, shifting river courses, and flood risks along the Ganga. The city has an operational 38 MLD STP. The discussions focussed on utilizing the treated used water for various uses and adopting a decentralized treatment strategy for optimum utilization.
 - v. **Sh. Avinash Pratap Singh, Asst. Municipal Commissioner of Gorakhpur**, mentioned about substantial efforts undertaken to address urban flooding through early warning systems, weather-based modelling, and digital pump automation. The city has also initiated wetland restoration and is developing a dashboard for monitoring river-related interventions. A proposal for a dedicated "River Cell," potentially funded by NMCG, was presented as a pilot concept for institutionalizing river-centric planning.
 - vi. **Sh. SFA Zaidi, Chief Engineer, Kanpur**, discussed his experience from URMP Kanpur, highlighting the first set of interventions proposed for implementation. These include: a) development of GIS based database for 450+ waterbodies across Kanpur city b) An actionable plan for reuse of treated used water, c) Concept development for placemaking along a selected stretch of city's major drain using nature-based solutions (NbS).
 - vii. **Sh. Punit Ojha, Chief Engineer, Ayodhya**, shared his experiences from Ayodhya URMP, where one side of the river is completely untouched and has potential of

floodplain protection and development of riparian buffers. The city also explored the tourism potential while making a river sensitive proposal.

- vii. **Sh. Uttam Verna, Environment Officer, Prayagraj**, mentioned about comprehensive Wal-URMP approach being followed in Prayagraj URMP.
- ix. **Sh. Anil Kumar Gupta, Technical Advisor, SMCG-UP** shared his experience from working the cities of Uttar Pradesh and their state-driven administrative set-up.
- d) Keynote Address by **Sh. Anuj Kumar Jha, IAS, Director Local Bodies and Secretary, Urban Development Department, Govt. of Uttar Pradesh** reflected on the State's proactive role in enabling institutional mechanisms such as the formation of Multi-Stakeholder Working Groups (MSWGs) in each URMP city. He stressed the importance of building ownership at the district level, proposing that District Magistrates be involved as Chairs of the MSWGs, wherever feasible.

The necessity of grounding planning in practical implementation was highlighted, referring to the observations made under Swachh Survekshan and NGT directives, which indicate the accumulation of waste along riverbanks.

Emphasizing the critical need for both solid and liquid waste management, he called for sincere adoption of URMPs as a survival imperative, not just a planning initiative. The potential for leveraging CSR funding, such as HCL's support for river barriers and simple, cost-effective solutions was also outlined.

- e) The meeting concluded with vote of thanks from the Director NMCG, wherein NMCG's support for successful URMP rollout in Uttar Pradesh was re-affirmed.

Way Forward:

- i. The State of Uttar Pradesh will take a leadership role in advancing the Prime Minister's vision for urban river rejuvenation. A State-level URMP Committee will be established under the chairmanship of the Urban Development Department.
- ii. Multi-Stakeholder Working Groups (MSWGs) will be notified in all five pilot cities, keeping the state in loop regarding all communications.
- iii. Designated Nodal officers in each city to cooperate with the onboarded consulting agency by NMCG-NIUA: LEA Associates Pvt. Ltd. to initiate comprehensive data collection and documentation of ongoing and proposed initiatives.
- iv. Plans will integrate critical elements such as STPs, FSTPs, used water management, and nature-based solutions, including in non-AMRUT towns.

Attendance sheet is annexed to this document.



State Level "Urban River Management Plans (URMP) Workshop for Uttar Pradesh

Date : 03rd May, 2025

Time : 11:00 - 14:00 (followed by lunch)

Venue : Swati Conference Hall, Office of Directorate of
ULBs, Gomti Nagar, Lucknow, Uttar Pradesh

ATTENDANCE SHEET

S.No.	Name	Designation/ Department	Contact Details (email/ phone)	Signature
1.	Anil Kumar Gupta	Technical Advisor SMCA-UP	ta@smcguv.org anilg421@gmail.com 912182534	
2.	Uttam Kumar Veng	Environmental Engineer, Nagar Nigam Prayagraj	8303701016	
3	S.G.A. Zaidi	C.E. / KMD	9415461593	
4	Kamaljit Singh	CE - DLB	9199077797	
5.	G. Lal.	ES, NPP Mirzapur	8139077942	
6	Somesh Kumar	Asst. Engr. (Civil) Nagar Nigam Mathura-Vindhyapar	9897600250	
7	Behul	"	"	
8	Punit Singh	C.E. Ayodhya	9415023810	
9	Vikas Kumar	Engr. Bihar	9199070116	
10	Rashmi Kumar	JE (C) Bihar	9410446057	
11	Om Prakash Kumar	AE (C) Mirzapur	7800917032	

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State Level "Urban River Management Plans (URMP) Workshop for Uttar Pradesh

Date : 03rd May, 2025

Time : 11:00 - 14:00 (followed by lunch)

Venue : Swati Conference Hall, Office of Directorate of ULBs, Gomti Nagar, Lucknow, Uttar Pradesh

ATTENDANCE SHEET

[illegible]



State Level "Urban River Management Plans (URMP) Workshop for Uttar Pradesh

Date : 03rd May, 2025
Time : 11:00 - 14:00 (followed by lunch)
Venue : Swati Conference Hall, Office of Directorate of
ULBs, Gomti Nagar, Lucknow, Uttar Pradesh

ATTENDANCE SHEET

S.No.	Name	Designation/ Department	Contact Details (email/ phone)	Signature
1	C. S. SINHA	LEA Assistant.	9910960789	
2	Shobh Mishra	LEA Assistant	8081636499	
3	Aniruddh Pratap Singh	SMA Gorakhpur	8810709400	
4	ASHOK KUMAR	EXN NW. GKP	8810709310	
5	S. B. Rai	A. N. M. Nagar Nigan. Ayodhya	7311165818	
6	Pradeep Aggarwal	CB SEI, Sr. M Directorate, UP	9990600925	

Draft Urban River Management Plan of Mirzapur

Annexure 2: MSWG Notification – Mirzapur

Office of the District Magistrate, Mirzapur

Letter No.: 512/L.B.C.-2025 Date: 28-07-2025

Office Memorandum

Dear Sir/ Madam,

With respect to the Urban River Management Plan (URMP) preparation for the city and the meeting held on 11-07-2025, the following departments are now considered to be members of the Mirzapur Multi Stakeholder Working Group (MSWG):

S. No.	Officials of Concerned Departments	Role
1	District Magistrate, Mirzapur	Chairperson
2	Additional District Magistrate, F/R, Mirzapur	
3	Divisional Forest Officer, Mirzapur-Vidhyanchal Forest Division	Member
4	Executive Officer, Nagar Palika Parishad	Member
5	Executive Engineer, Uttar Pradesh Jal Nigam (Urban), Mirzapur	Member
6	Executive Engineer, Irrigation Department, Mirzapur	Member
7	Environmental Officer, UP Pollution Control Board Mirzapur	Member
8	Executive Engineer, Ground Water Board, Mirzapur	Member
9	Secretary, Vidhya Development Authority, Mirzapur	Member
10	Regional Tourism Officer, Mirzapur	Member
11	General Manager, District Industries Centre, Mirzapur	Member
12	District Agriculture Officer, Mirzapur	Member
13	District Project Officer, SMCG	Member

The Minutes of the Meeting held on 11.07.2025 is also enclosed herewith for information and record.

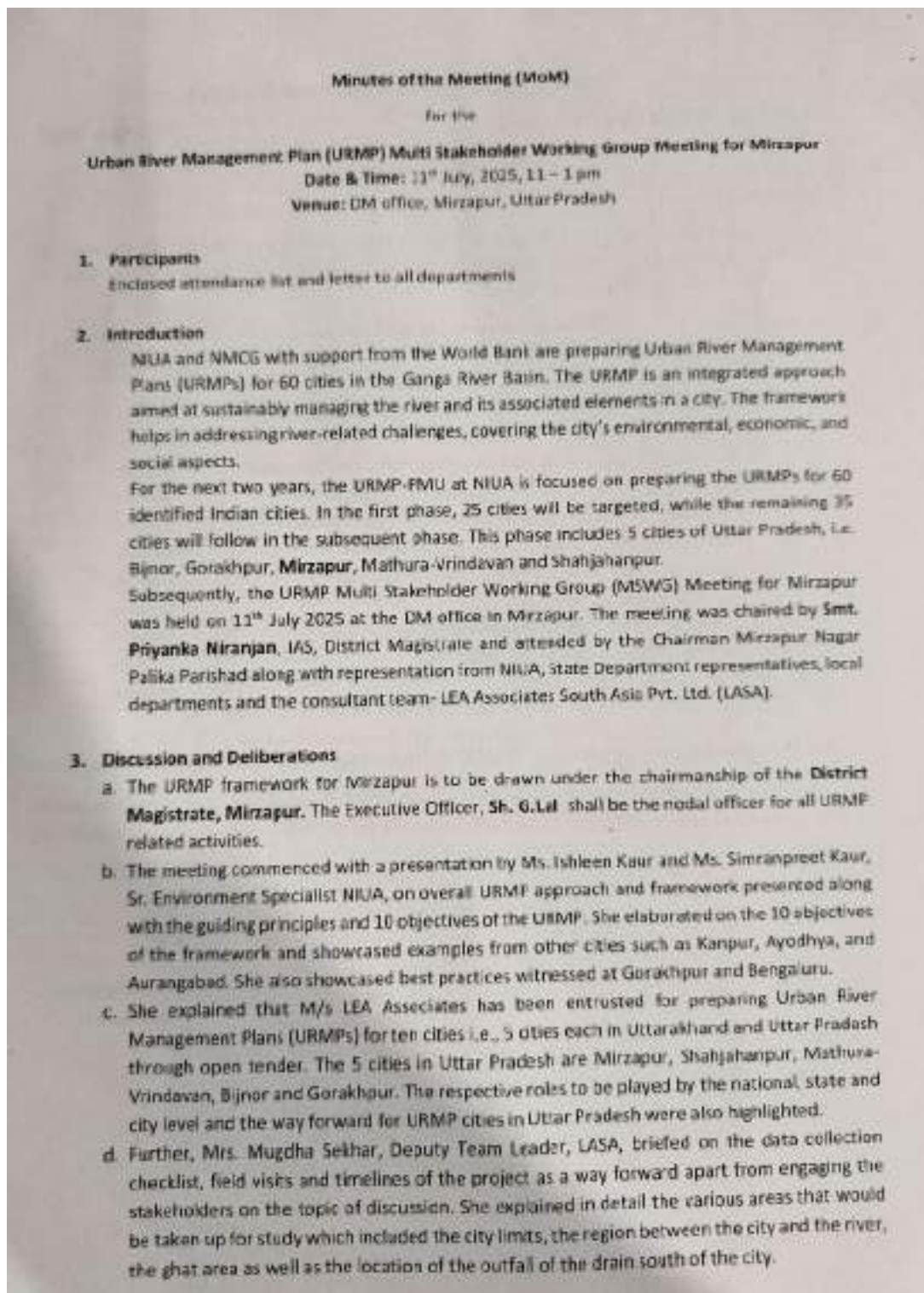
The MSWG shall facilitate, discuss and guide the team of LEA Associates South Asia Pvt. Ltd. (LASA), the Consultants appointed for the project with respect to project deliverables preparation under this assignment.


District Magistrate
Mirzapur

Copy:

1. Above Departments.
2. Shri Rahul Sachdeva, Senior program specialist, NIUA Delhi.

Annexure 3: Mirzapur MSWG - Minutes of the Meeting



4. Ms. Simranpreet Kaur suggested that an integrated water management framework may be adopted by the city which would include assessing groundwater depletion and recharge by way of monitoring sewerage collection and treatment and treated water reuse. The goal is to ensure maximum return flow to the rivers. To support sustainable water resources, the plan should also include industrial collaboration, encouraging local industries to adopt on-site effluent treatment systems and reuse of treated water.
 - a. The NIUA and LASA team shared observations of the 2-day site visit of various landmarks in the city connected with the project and invited activities underway and proposals by the members.
 - b. The views shared by the officials are:
 1. The District Magistrate welcomed and thanked all the participants for the meeting. She assured the NIUA and LASA teams that complete contribution/data with respect to the URMP preparation would be provided by the city officials/representatives. She also highlighted that attention needs to be given to the following:
 - Dumping of solid waste in nallahs and rivers is a major issue.
 - Strict implementation of no development in 200mt buffer on either side of the river.
 - Demarcation of new & old houses through geotagging to be carried for better sewage & waste management in the settlements along the riverbank.
 - Land use and activity mapping (residential, commercial, religious & tourist (public & private) places along the river.
 - Focus on public recreational activities along the river through riverside promenade (1.5 - 2km stretch), creation of viewpoints at regular interval along the river, riverside parks & gardens.
 - Creation of weekly market through temporary structure along the river to focus on creation of livelihoods for connecting different type of people.
 - Along with bolder pitching promote nature-based solution should be applied to tackle river bank erosion, e.g., Porcupine technique may be adopted for creation of green patches that will also check river bank erosion.
 - Initiatives for increasing public awareness are essential to promote greater community engagement and improve solid waste management practices.
 - Proper management of nallahs and legacy waste.
 2. The Chairman, NPP advised about riverfront & ghat development along the stretch of Ojhla River. He advised on the importance of developing tourism for the local people. He conveyed that Mirzapur should be envisaged to become tourism centre point to connect Prayagraj, Varanasi & Ayodhya.
 3. The Executive Officer, highlighted the scope for riverfront development. He highlighted a team named "Ganga Prahari" has been created and they undertake cleaning of ghats every fortnight. The storm water drainage network should be focused for entire city.
 4. The Officer from UP Ground Water board shared that the ground water depletion rate is very high in Mirzapur and is critical in 2-3 blocks of the city.

5. Way Forward

- a. The District Magistrate highlighted the importance of monthly meetings for supervision and updation of the progress of work. All departments were directed to share the

necessary data in soft/hard copies and share availability of time with the Consultants for discussions thereof.

- b. Further, as a way forward for URMP, it was agreed to notify the MSWG in-city, as per guidelines of the URMP.

The meeting ended with a vote of thanks.

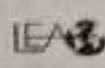


11th July, 2025 MSWG Meeting

Annexures:

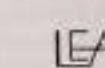
1. Meeting Attendance list
2. Letters





S.No	Name	Designation and Organization	E-mail	Contact No	Signature
1	Dimple Tiwari	T.S.O. (U.P. Tourists)	dimptiwari@gmail.com	9767213240	
2	Kulwant Khatwari	T.S.O. (U.P. Tourists)	kulwantkhatwari@gmail.com	9767213240	
3	Pranav Singh	Journalist	pranav999@gmail.com	9960932091	
4	Pranav Kumar	E.E. (S.I.) N.P.P. Mirzapur	pranavkumar@gmail.com	9200917822	
5	G.S. Singh	A.P.O. (S.I.) N.P.P. Mirzapur	-	9202765500	
6	Balraj Kumar	A.E. (U.P.S.N) (U.R.B.M.)	balraj.kumar@gmail.com	9205782205	
7	Pranav Kumar	E.E. N.O. Mirzapur	-	9910994840	
8	Sanjay Singh Baghel	Sr. Engineer Mirzapur	-	9910994840	





Preparation of Urban River Management Plans (URMP) for 10 Cities in the States of Uttar Pradesh and Uttarakhand

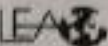
URMP Multi Stakeholder Working Group (MSWG) Meeting

City: _____ Date: _____

Registration Sheet

S.No	Name	Designation and Organization	E-mail	Contact No	Signature
	G. Lohi	E.O.	mirzapur@nppa.org	9767213240	
	Sanjay Singh	T.D.M. (S.I.)	sanjay.singh@gmail.com	9450065001	
	Jayvardan Singh	E.E. P.D. P.W.D. Mirzapur	-	9457188715	
	Manoj Kumar Seth	C.S.I. N.P.P. Mirzapur	manojseth1990@gmail.com	9455587450	
	Pratik Kumar	S.D.O. (Faint)	-	9804408891	
	Tarun Prakash Singh	A.T.O. S.D.M.	-	9652001050	
	Sunayna Rani	Sr. Graphic Designer	-	9052320050	

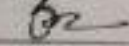




Preparation of Urban River Management Plans (URMP) for 10 Cities in the States of Uttar Pradesh and Uttarakhand

URMP Multi Stakeholder Working Group (MSWG) Meeting

City: _____ Registration Sheet Date: _____

S.No	Name	Designation and Organization	E-mail	Contact No	Signature
	Pragya Niranjani				
	Ajay Kumar Singh	AUM K/A		9454417638	
	Pranav Kumar	Environment Specialist, NWA	-	981192498	
	Sankarprasad	Se-Envr. Specialist, NWA	-	9814947448	
	Angela Sharma	By Trans-Linker Coord. TNA		980676051	
	Sayan Deep Chakraverty	Urban Planner, L&S	Sayandeep.chakraverty@larsa.co.in	8079027413	
	Dr. Anil Kumar	ATP, M&V, Mirzapur	anil.pandey@mirzapur.gov.in	953016587	

Annexure 4: Ward-wise Population of Mirzapur City

Ward Number	Ward Name	Population
1	Shivpur	8,250
2	Mahuwariya	8,087
3	Fathan	8,276
4	Ramaipatti	8,259
5	Pakka Pokhara	8,287
6	Dangahar	8,326
7	Tarkapur	8,315
8	Rookhadghat	8,127
9	Shiwala Mahanth	8,358
10	Sangmohal	8,234
11	Chandradeepa	8,321
12	Dakshin Sabri	8,176
13	Vindhyachal	8,467
14	Baraudha	8,256
15	Station	8,314
16	Gosaitalab	8,402
17	Purani Dashmi	8,022
18	Anagad	8,206
19	Shuklaha	8,208
20	Uttari Sabri	8,365
21	Baghkunjalgir	8,287
22	Ganeshganj	8,188
23	Chetganj	8,268
24	Basahi	8,267
25	Katrabazirao	8,296
26	Ghurahupatti	8,076
27	Ghantaghar	8,135
28	Kantit	8,017
29	Bathua	8,128
30	Basanahi Bazar	8,345
31	Makari Kho	8,456
32	Chaubeytola	8,213
33	Sankatmochan	8,367
34	Bhatwapokhari	8,341
35	Kotwali	8,532
36	Bundelkhandi	8,321
37	Trimohani	8,321
38	Imamganj	8,345
Total		31,4159

Annexure 5: List of Flora

Sl. No.	Scientific Name	Common Name	Growth Form
1	<i>Acacia nilotica</i> (L.) Delile	Babool	Tree
2	<i>Aegle marmelos</i> (L.) Corrêa	Bael / Bili Patra	Tree
3	<i>Azadirachta indica</i> A.Juss.	Neem	Tree
4	<i>Bombax ceiba</i> L.	Semal	Tree
5	<i>Dalbergia sissoo</i> DC.	Shisham	Tree
6	<i>Delonix regia</i> (Hook.) Raf.	Gulmohar	Tree
7	<i>Ficus benghalensis</i> L.	Banyan	Tree
8	<i>Ficus religiosa</i> L.	Peepal	Tree
9	<i>Ficus virens</i> Aiton	Pakad	Tree
10	<i>Holoptelea integrifolia</i> Planch.	Chilbil	Tree
11	<i>Madhuca longifolia</i> var. <i>latifolia</i> (Roxb.) A.Chev.	Mahua	Tree
12	<i>Peltophorum pterocarpum</i> (DC.) K.Heyne	Peela Gulmohar	Tree
13	<i>Polyalthia longifolia</i> (Sonn.) Thwaites	False Ashok	Tree
14	<i>Tectona grandis</i> L.f.	Teak	Tree
15	<i>Calotropis gigantea</i> (L.) Dryand.	Safed Aak	Shrub
16	<i>Calotropis procera</i> (Aiton) Dryand.	Aak	Shrub
17	<i>Lantana camara</i> L.	Lantana	Shrub
18	<i>Lippia alba</i> (Mill.) N.E.Br. ex Britton & P. Wilson	—	Shrub
19	<i>Malvastrum coromandelianum</i> (L.) Garcke	False Mallow	Herb
20	<i>Ocimum tenuiflorum</i> L.	Tulsi	Shrub/Herb
21	<i>Polygonum glabrum</i> Willd.	Common Marsh Buckwheat	Herb
22	<i>Ricinus communis</i> L.	Arandi / Castor	Shrub
23	<i>Ziziphus nummularia</i> (Burm.f.) Wight & Arn.	Wild Ber	Shrub
24	<i>Achyranthes aspera</i> L.	Chirchira	Herb
25	<i>Amaranthus spinosus</i> L.	Prickly Amaranth	Herb
26	<i>Ammania baccifera</i> L.	—	Herb
27	<i>Croton bonplandianus</i> Baill.	Ban Tulsi	Herb
28	<i>Justicia</i> sp.	—	Herb
29	<i>Leucas aspera</i> (Willd.) Link	—	Herb
30	<i>Parthenium hysterophorus</i> L.	Congress Grass	Herb
31	<i>Rumex dentatus</i> L.	Jungli Palak	Herb
32	<i>Solanum xanthocarpum</i> Schrad. & H. Wendl.	Kateli	Shrub
33	<i>Tephrosia purpurea</i> (L.) Pers.	Sharpunkha	Shrub
34	<i>Tridax procumbens</i> (L.) L.	—	Herb
35	<i>Xanthium strumarium</i> L.	Chhota Dhatura	Herb
36	<i>Cyperus difformis</i> L.	—	Grass/Sedge
37	<i>Cyperus rotundus</i> L.	Nut Grass	Grass/Sedge
38	<i>Dicanthium annulatum</i>	—	Grass
39	<i>Saccharum spontaneum</i> L.	Kaans Grass	Grass
40	<i>Terminalia arjuna</i> (Roxb.) Wight & Arn.	Arjun	Tree
41	<i>Syzygium cumini</i> (L.) Skeels	Jamun	Tree
42	<i>Cynodon dactylon</i> (L.) Pers.	Doob Grass	Grass
43	<i>Imperata cylindrica</i> (L.) P. Beauv.	Cogon Grass	Grass
44	<i>Ipomoea carnea</i> Jacq.	Besharam / Pink Morning Glory	Shrub/Climber
45	<i>Tinospora cordifolia</i> (Willd.) Miers	Giloy / Guduchi	Climber

Annexure 6: List of Fauna

No.	Scientific Name	Common Name	Faunal Group
1	<i>Macaca mulatta</i>	Rhesus Macaque	Mammal
2	<i>Herpestes edwardsii</i>	Indian Grey Mongoose	Mammal
3	<i>Sus scrofa cristatus</i>	Wild Boar	Mammal
4	<i>Pteropus giganteus</i>	Indian Flying Fox	Mammal
5	<i>Alcedo atthis</i>	Common Kingfisher	Bird
6	<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	Bird
7	<i>Ceryle rudis</i>	Pied Kingfisher	Bird
8	<i>Ardeola grayii</i>	Pond Heron	Bird
9	<i>Bubulcus ibis</i>	Cattle Egret	Bird
10	<i>Egretta garzetta</i>	Little Egret	Bird
11	<i>Anas poecilorhyncha</i>	Indian Spot-billed Duck	Bird
12	<i>Phalacrocorax carbo</i>	Great Cormorant	Bird
13	<i>Milvus migrans</i>	Black Kite	Bird
14	<i>Haliastur indus</i>	Brahminy Kite	Bird
15	<i>Coracias benghalensis</i>	Indian Roller	Bird
16	<i>Charadrius dubius</i>	Little Ringed Plover	Bird
17	<i>Grus antigone</i>	Sarus Crane (seen in adjoining wetlands)	Bird
18	<i>Varanus bengalensis</i>	Bengal Monitor	Reptile
19	<i>Python molurus</i>	Indian Rock Python	Reptile
20	<i>Naja naja</i>	Indian Cobra	Reptile
21	<i>Daboia russelii</i>	Russell's Viper	Reptile
22	<i>Eryx johnii</i>	Red Sand Boa	Reptile
23	<i>Trionyx gangeticus</i> (now <i>Nilssonina gangetica</i>)	Indian Soft-shell Turtle	Reptile
24	<i>Lissemys punctata</i>	Indian Flap-shell Turtle	Reptile
25	<i>Crocodylus palustris</i>	Mugger (Marsh Crocodile) – occasionally recorded in Ganga stretch	Reptile
26	<i>Hoplobatrachus tigerinus</i>	Indian Bullfrog	Amphibian
27	<i>Fejervarya limnocharis</i>	Indian Cricket Frog	Amphibian
28	<i>Labeo rohita</i>	Rohu	Fish
29	<i>Catla catla</i>	Catla	Fish
30	<i>Cirrhinus mrigala</i>	Mrigal	Fish
31	<i>Wallago attu</i>	Freshwater Shark (Wallago)	Fish
32	<i>Clarias batrachus</i>	Magur / Walking Catfish	Fish
33	<i>Mystus tengara</i>	Tengra Catfish	Fish
34	<i>Notopterus notopterus</i>	Featherback	Fish
35	<i>Garra gotyla</i>	Stone Sucker	Fish
36	<i>Pangasianodon hypophthalmus</i>	Pangasius (now also cultured in Ganga stretch)	Fish
37	<i>Macrobrachium rosenbergii</i>	Giant River Prawn	Crustacean

Annexure 7: List of Ghats

Ghat Name	Fataha Ghat	Kachari Ghat	Baria Ghat	Oliyar Ghat	Badli Ghat	Baba Ghat	Pakka Ghat	Nar Ghat	Chaube Ghat	Ramgaya Ghat (crematorium)
Type (Pucca/Kutch)	Pucca Ghat	Pucca Ghat (narrow Concrete steps)	Pucca	Pucca	pucca	pucca	Pucca	pucca	Pucca	Pucca
Location Coordinates	-	-								
Approach Road Type (Access Road/ Single line/Double line)	Double line(10-13m)	Double line(10-13m)	single line road (3-7m)	Access road (Less than 3m)	access road (3m)	access road (3m)	access road (3m)	Single line (3-7 m)	Single road (3-7 m)	Single road (3-7 m)
Parking Availability (None/Limited/Adequate)	limited - on street	limited - only morning hours available	limited	None	No parking	no parking	no parking	On-street	on-street	on-street
Public Transport Access (Bus stop/Auto stand/None)	Autos	Autos	autos	None	None	None	None	Auto		auto
Average Daily Visitors (<100/100–500/500–1000/>1000)	500-1000 (around 600)	100-500	10000	less 50	above 1000	500-1000	100-200	above 500	100-200	100-200
Peak Seasonal Visitors (<500/500–2000/2000–5000/>5000)	15,000	10,000	15,000	500-1000 Population at ghat area	above 5000	Above 8000	2000-3000	above 5000	500 - 600	around 1 lakh
Local Community Dependence (High/Moderate/Low)	low	low	moderate	High- Not for recreation - Copper extraction	No	No	Moderate	No	low	low
Type of Dependency	street vending	None	commercial stalls	-	No	No	Yes	No	street vending (Commercial stalls)	street vending (Commercial stalls)
Surrounding land use (Residential/ Commercial/ etc..)	Public & Semi-public	Public & Semi-public	residential	residential	Residential	Residential	Commercial	Residential	Residential	Residential

Draft Urban River Management Plan of Mirzapur

Ghat Name	Fataha Ghat	Kachari Ghat	Baria Ghat	Oliyar Ghat	Badli Ghat	Baba Ghat	Pakka Ghat	Nar Ghat	Chaube Ghat	Ramgaya Ghat (crematorium)
Used water or Drains Discharge (Yes/No)	No	Yes (Tapped)	oliyar drain	No	No	No	No	Minor Drain flowing	No	Minor drains flowing
Solid Waste Presence (None/Moderate/Heavy)	Moderate	Heavy	Heavy	High	Heavy	Moderate	Moderate	Low	Heavy	Low
Ritual Waste Observed (None/Occasional/Frequent)	Occasional	Frequent	Daily	None	Occasional	Daily	None	Daily	None	
Structural Stability (Stable/Minor damage/Major damage)	Stable	Stable	Stable	Stable	Stable	stable	Stable	Stable	Minor damage	Minor damage
Flood Protection (Embankment present/Absent)	No embankment present	Stone pitching	Retaining wall	Absent	Absent	absent	absent	absent	absent	absent
Vegetation Cover (Trees/Shrubs/None)	Both Trees and shrubs	Trees	Trees	None	None	trees and shrubs	No	trees and shrubs	Trees and shrubs	Trees and shrubs
Shade Availability (Adequate/Limited/None)	Limited	No	low shades	Limited	Limited	No	Yes	None	Limited	Adequate
Aquatic/Bird Life Observed (Yes/No)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Primary Activities (Bathing/Rituals/Laundry/Fishing/Recreation)	Bathing/Rituals/ Fishing/ Recreation	Bathing/Rituals / Fishing	Bathing/Rituals/ Fishing/ Recreation	Copper extraction/ Fishing	Bathing/ Rituals/ Fishing	Bathing/ Rituals/ Fishing/ Recreation	Bathing/Fishing / Recreation/ Ritual	Bathing/Fishing/ Recreation / Ritual	Cremations	Cremations
Seasonal Crowd Variation (High/Moderate/Low)	High	High	High	Low	High	Moderate	High	High	Moderate	High (Pitru Visarjan)
Heritage Structures Nearby	None	Temple (Kacheri Baba	Temple	No	Temple	Temple	Temple	Temple	No	God Ram fathers pitru visarjan is done here

Draft Urban River Management Plan of Mirzapur

Ghat Name	Fataha Ghat	Kachari Ghat	Baria Ghat	Oliyar Ghat	Badli Ghat	Baba Ghat	Pakka Ghat	Nar Ghat	Chaube Ghat	Ramgaya Ghat (crematorium)
(Temple/Monument /None)		& Radha Krishna mandir								
Sanitation Facilities (Toilets/Changing rooms/None)	Yes	No	Yes (Limited)	None	Yes (O&M Issues)	No	No	No	No	Yes
Waste Bins (Segregated/Single/None)	Segregated	No	Segregated	None	No bins	No	No	Limited	No	Limited
Safety Measures (Railings/Signage/Lifeguard/None)	No	No	No safety	None	No safety	No safety	No Safety	No	No	No
Lighting (Adequate/Inadequate/None)	Inadequate	None	Inadequate	none	inadequate	Limited	Inadequate	Limited	Inadequate	Inadequate
Most Needed Improvements (Open text)	Safety and some infrastructure facilities	Safety/ changing rooms/ Solid waste removal	Seating area & recreational development	-	Need flood protection beside ghats	need beautification	Maintenance issues & construct of steps at river bank	Maintenance issues	-	Railing/ Bathing Ghat after cremation
Features to Preserve (Open text)	None	None	Temple and cultural heritage	-	-	-	Ganga Harti will be done at this ghat			

Annexure 8: Flood Protection work in Mirzapur City



जनपद मीरजापुर में गंगा नदी के दाये तट पर कराये गये कटाव निरोधक कार्यों का विवरण।						
क्र.सं.	कार्य का नाम	नदी का तट	तहसील	लम्बाई (किमी मी)	समाप्तित क्षेत्र (है मी)	फोटोग्राफ
1	जनपद मीरजापुर में गंगा नदी के दाये तट पर एनएच-100 का बायाँ एवं दाहिना किनारा के गिकट हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना। (वित्तीय वर्ष 2021-22 पूर्ण)	दायें तट	सदर	0.650	2.40	
2	जनपद मीरजापुर में गंगा नदी के दाये तट पर पीएच-2 का बायाँ स्थल, मालवी मार्ग एवं सिविल कॉलेजी कागहो के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना। (वित्तीय वर्ष 2022-23 पूर्ण)		सदर	0.600	3.875	
3	जनपद मीरजापुर में गंगा नदी के दाये तट पर चोक बट (गमरान घाट) के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना। (वित्तीय वर्ष 2022-23 पूर्ण)		सदर	0.400	3.20	
4	जनपद मीरजापुर में गंगा नदी के दाये तट पर कलाइ पथ हाऊस-द्वितीय के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना। (वित्तीय वर्ष 2022-23 पूर्ण)		सदर	0.100	0.32	
5	जनपद मीरजापुर में गंगा नदी के दाये तट पर विप्रेक्षक ग्राम तथा पण्डिका पाग मंदिर की सुरक्षा हेतु जीको डैम लखेड विजय जीको डैम लखेड ग्राम एवं परमपूजाईन स्टल के निर्माण की परियोजना। (वित्तीय वर्ष 2019-20 पूर्ण)		चुनार	0.340	108	



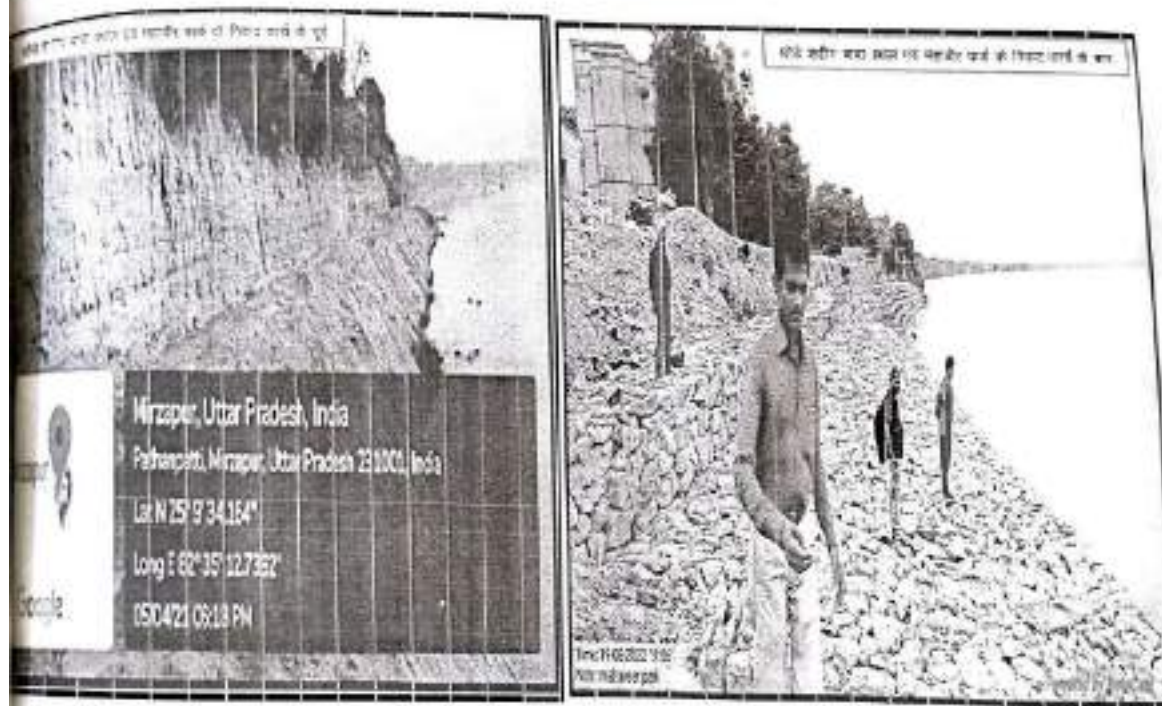
AT MALHANI BASTI



मिरापुर में गंगा नदी के दाहिने तट पर छोड़े खाई घाट (शमशान घाट) के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना।



सुनारपुर मीरजापुर में गंगा नदी के दाहिने तट पर छोड़े खाई बाध स्थल, महावीर पार्क एवं सिंचाई कालोनी फराहों के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना।



जनपद मीरजापुर में गंगा नदी के दाहिने तट पर चण्डिका ग्राम तथा चण्डिका भवन मंदिर की सुरक्षा हेतु जैको वेग स्लोव रिटिच, जिससे बैब लायिंग एपेन एवं परक्यूर्डन स्टड के निर्माण की परियोजना।



राज्यीय वर्ष 2025 में जनपद मीरजापुर में गंगा नदी के दाहिने तट पर कटाव निरोधक कार्यों का विवरण।

कार्य का नाम	नदी का तट	तहसील	लम्बाई (किमी) में	परियोजना के कार्य की प्रगति	लाभान्वित क्षेत्र (हे० में)	फोटोग्राफ
जनपद मीरजापुर में गंगा नदी के दाहिने तट पर चण्डिका ग्राम-चण्डिका भवन मंदिर की सुरक्षा हेतु जैको वेग स्लोव रिटिच, जिससे बैब लायिंग एपेन एवं परक्यूर्डन स्टड के निर्माण की परियोजना।	दाहिने तट	सदर	0.225	78%	1.00	
जनपद मीरजापुर में गंगा नदी के दाहिने तट पर चण्डिका ग्राम-चण्डिका भवन मंदिर की सुरक्षा हेतु जैको वेग स्लोव रिटिच, जिससे बैब लायिंग एपेन एवं परक्यूर्डन स्टड के निर्माण की परियोजना।		सदर	0.275	63%	1.00	
जनपद मीरजापुर में गंगा नदी के दाहिने तट पर चण्डिका ग्राम-चण्डिका भवन मंदिर की सुरक्षा हेतु जैको वेग स्लोव रिटिच, जिससे बैब लायिंग एपेन एवं परक्यूर्डन स्टड के निर्माण की परियोजना।		सदर	0.325	62%	4.00	
जनपद मीरजापुर में गंगा नदी के दाहिने तट पर चण्डिका ग्राम-चण्डिका भवन मंदिर की सुरक्षा हेतु जैको वेग स्लोव रिटिच, जिससे बैब लायिंग एपेन एवं परक्यूर्डन स्टड के निर्माण की परियोजना।		धुनार	0.194	13%	60.00	

जलवायु-मैरजापुर में गंगा नदी के दाहिने तट पर मडर्नि इमानन्द बालिका इंटर कॉलेज एवं मैरजापुर मण्डलीय अस्पताल के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना



जलवायु-मैरजापुर में गंगा नदी के दाहिने तट पर गान-विशुन्दरपुर में अधिकारियों के आवास के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना



जनपद मीरजापुर में गंगा नदी के दाहिने तट पर अर्जुनपुर पम्प हाउस, श्रीराम हनुमान मंदिर एवं
बस-नीची गहरवार के समीप हो रहे कटाव को रोकने हेतु कटाव निरोधक कार्य की परियोजना



Annexure 9: CPCB - Designated Best Use classification

Designated-best-Use/ Beneficial Use	Classification of water	Criteria
Drinking water source without Conventional treatment but after disinfection	A	1. Total Coliforms Organism MPN/100 ml shall be 50 or less 2. pH between 6.5 and 8.5. 3. Dissolved Oxygen 6 mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C 2 mg/l or less
Outdoor Bathing (organized)	B	1. Total Coliforms Organism MPN/100 ml shall be 500 or less. 2. pH between 6.5 and 8.5 3. Dissolved Oxygen 5 mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C 3 mg/l or less
Drinking water source after conventional treatment and disinfection	C	1. Total Coliforms Organism MPN/100 ml shall be 5000 or less 2. pH between 6 and 9 3. Dissolved Oxygen 4 mg/l or more 4. Biochemical Oxygen Demand 5 days 20 °C 3 mg/l or less
Propagation of wild life and fisheries	D	1. pH between 6.5 and 8.5 2. Dissolved Oxygen 4 mg/l or more. 3. Free Ammonia (as N) 1.2 mg/l or less
Irrigation, industrial cooling, controlled waste disposal	E	1. pH between 6.0 and 8.5 2. Electrical Conductivity at 25 °C micro mhos/cm maximum 2250 3. Sodium absorption ratio maximum 26 4. Boron maximum 2 mg/l

Source: Central Pollution Control Board

Annexure 10: Performance of STP

DAILY PERFORMANCE REPORT OF SEWAGE SAMPLE

NAME OF SITE- 34 MLD STP PAKKA POKHRA MIRZAPUR

Month: August - 2025

DATE	STP DN RECEIVED SEWAGE IN MLD	INLET					OUTLET					Residual Chlorine (PPM)	Remarks
		PH	BSS (mg/l)	COB (mg/l)	BOD (mg/l)	Fecal Coliform (MPN/100ml)	PH	TSS (mg/l)	COB (mg/l)	BOD (mg/l)	Fecal Coliform (MPN/100ml)		
01-08-2025	4.08	7.74	518.00	479.00	937.00		7.94	39.00	95.00	24.00		0.1	
02-08-2025	5.22	7.69	383.00	401.00	211.00	8.0×10^4	7.79	39.00	71.00	22.00	307	0.2	
03-08-2025	3.76	7.55	379.00	436.00	101.00		7.25	51.00	61.00	10.00		0.1	
04-08-2025	5.23	7.65	219.00	176.00	181.00		7.10	40.00	96.00	23.00		0.4	
05-08-2025	5.43	7.71	245.00	199.00	159.00	6.0×10^4	7.61	40.00	107.00	24.00	295	0.2	
06-08-2025	5.03	7.69	224.00	312.00	197.00		7.22	38.00	115.00	22.00		0.3	
07-08-2025	5.42	7.59	448.00	463.00	187.00		7.11	46.00	87.00	21.00		0.4	
08-08-2025	6.81	7.59	365.00	259.00	183.00	9.0×10^4	7.70	57.00	68.00	21.00	180	0.2	
09-08-2025	6.08	7.65	626.00	410.00	185.00		7.76	50.00	48.00	23.00		0.7	
10-08-2025	6.86	7.77	509.00	459.00	192.00		7.71	35.00	61.00	20.00		0.3	
11-08-2025	9.15	7.52	208.00	116.00	122.00	2.0×10^4	7.61	38.00	76.00	19.00	125	0.4	
12-08-2025	10.11	7.41	320.00	406.00	380.00		7.59	36.00	74.00	10.00		0.2	
13-08-2025	10.55	7.61	341.00	436.00	357.00		7.63	34.00	80.00	29.00		0.4	
14-08-2025	9.53	7.55	224.00	429.00	187.00	6.0×10^4	7.72	39.00	87.00	24.00	178	0.3	
15-08-2025	9.70	7.61	354.00	395.00	180.00		7.69	40.00	81.00	24.00		0.1	
16-08-2025	8.13	7.68	338.00	447.00	193.00		7.61	42.00	66.00	35.00		0.2	
17-08-2025	9.35	7.59	349.00	445.00	203.00	8.0×10^4	7.70	37.00	90.00	23.00	185	0.3	
18-08-2025	9.62	7.63	328.00	422.00	188.00		7.33	54.00	82.00	24.00		0.2	
19-08-2025	7.22	7.43	307.00	449.00	187.00		7.58	48.00	66.00	14.00		0.3	
20-08-2025	8.31	7.39	345.00	462.00	101.00	6.0×10^4	7.67	41.00	96.00	21.00	164	0.4	
21-08-2025	8.14	7.53	323.00	608.00	187.00		7.63	40.00	90.00	23.00		0.1	
22-08-2025	8.16	7.68	309.00	396.00	190.00		7.71	39.00	97.00	20.00		0.2	
23-08-2025	9.81	7.58	325.00	433.00	183.00	7.0×10^4	7.67	32.00	79.00	24.00	178	0.1	
24-08-2025	9.18	7.89	343.00	420.00	197.00		7.62	31.00	79.00	22.00		0.4	
25-08-2025	7.83	7.90	424.00	427.00	190.00		7.56	44.00	93.00	24.00		0.3	
26-08-2025	10.12	7.67	335.00	443.00	209.00	8.0×10^4	7.68	40.00	87.00	23.00	200	0.2	
27-08-2025	11.78	7.62	312.00	423.00			7.75	36.00	84.00			0.3	
28-08-2025	9.56	7.59	295.00	392.00			7.72	42.00	90.00			0.2	
29-08-2025	11.31	7.64	327.00	439.00		6.0×10^4	7.74	49.00	92.00		185	0.2	
30-08-2025	13.06	7.55	343.00	448.00			7.65	31.00	87.00			0.4	
31-08-2025	12.86	7.67	319.00	435.00			7.85	44.00	96.00			0.3	

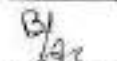
By
L. K. Ghosh
Lab OperatorSignature
Lab Incharge

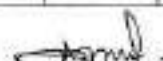
DAILY PERFORMANCE REPORT OF SEWAGE SAMPLE

NAME OF SITE- 6.5 MLD STP Bisdanpur, MIRZAPUR

Month: August - 2025

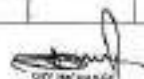
DATE	STP ON RECEIVED SEWAGE IN MLD	INLET							OUTLET							Residual Chlorine (PPM)	Remarks
		PH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	TN (PPM)	TP (PPM)	Fecal Coliform (MPN/100ml)	PH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	TN (PPM)	TP (PPM)	Fecal Coliform (MPN/100ml)		
01-08-2025	4.00	7.40	388.00	412.00	183.00	10.00	6.00		7.09	12.00	34.00	1.00	5.00	0.30		0.2	
02-08-2025	5.80	7.53	313.00	480.00	187.00	18.00	5.00	6.0×10^4	7.72	14.00	35.00	1.00	4.00	0.60	135	0.3	
03-08-2025	4.72	7.65	378.00	428.00	190.00	18.00	5.00		7.78	10.00	32.00	1.00	0.00	0.60		0.3	
04-08-2025	3.43	7.43	345.00	487.00	213.00	10.00	8.00		7.59	12.00	38.00	1.00	4.00	0.80		0.5	
05-08-2025	5.34	7.99	390.00	455.00	197.00	22.00	5.00	6.0×10^4	7.72	14.00	40.00	1.00	5.00	0.60	145	0.4	
06-08-2025	5.20	7.90	352.00	395.00	183.00	18.00	4.00		7.78	15.00	42.00	1.00	6.00	0.60		0.4	
07-08-2025	5.56	7.90	308.00	384.00	173.00	17.00	6.00		7.68	13.00	35.00	1.00	5.00	0.50		0.3	
08-08-2025	2.13	7.83	288.00	585.00	187.00	16.00	7.00	6.0×10^4	7.75	12.00	32.00	1.00	5.00	0.50	148	0.2	
09-08-2025	7.80	7.44	312.00	377.00	177.00	18.00	5.00		7.28	15.00	39.00	1.00	4.00	0.80		0.3	
10-08-2025	5.89	7.36	328.00	471.00	180.00	17.00	5.00		7.69	14.00	36.00	1.00	5.00	0.50		0.4	
11-08-2025	7.05	7.39	187.00	370.00	178.00	22.00	4.00	6.0×10^4	7.58	10.00	30.00	1.00	4.00	0.60	135	0.5	
12-08-2025	8.20	7.62	298.00	393.00	183.00	15.00	4.00		7.69	12.00	34.00	1.00	4.00	0.50		0.4	
13-08-2025	7.72	7.36	308.00	408.00	193.00	16.00	5.00		7.64	13.00	35.00	1.00	3.00	0.40		0.4	
14-08-2025	2.53	7.49	333.00	410.00	197.00	16.00	6.00	7.0×10^4	7.63	14.00	35.00	1.00	4.00	0.40	138	0.5	
15-08-2025	7.84	7.72	283.00	546.00	167.00	18.00	5.00		7.77	12.00	35.00	1.00	5.00	0.50		0.4	
16-08-2025	7.43	7.45	285.00	377.00	177.00	15.00	4.00		7.74	12.00	32.00	1.00	5.00	0.60		0.3	
17-08-2025	6.80	7.45	301.00	398.00	172.00	20.00	4.00	6.0×10^4	7.63	10.00	30.00	1.00	6.00	0.40	145	0.5	
18-08-2025	7.50	7.42	287.00	376.00	163.00	18.00	5.00		7.59	14.00	40.00	1.00	5.00	0.50		0.4	
19-08-2025	6.96	7.63	273.00	365.00	160.00	16.00	6.00		7.68	12.00	37.00	1.00	4.00	0.40		0.2	
20-08-2025	7.09	7.56	318.00	343.00	187.00	16.00	6.00	6.0×10^4	7.65	12.00	35.00	1.00	6.00	0.40	145	0.2	
21-08-2025	8.04	7.59	302.00	358.00	178.00	15.00	5.00		7.72	13.00	30.00	1.00	5.00	0.60		0.4	
22-08-2025	7.83	7.80	287.00	343.00	170.00	15.00	5.00		7.78	13.00	34.00	1.00	6.00	0.50		0.3	
23-08-2025	8.67	7.44	277.00	396.00	177.00	16.00	6.00	8.0×10^4	7.59	12.00	30.00	1.00	4.00	0.40	145	0.4	
24-08-2025	8.09	7.52	393.00	406.00	183.00	18.00	6.00		7.67	10.00	30.00	1.00	3.00	0.30		0.2	
25-08-2025	8.66	7.48	289.00	380.00	180.00	19.00	6.00		7.55	11.00	34.00	1.00	4.00	0.50		0.3	
26-08-2025	7.32	7.50	275.00	378.00	178.00	16.00	4.00	6.0×10^4	7.67	13.00	32.00	1.00	5.00	0.60	150	0.2	
27-08-2025	7.50	7.63	300.00	475.00		16.00	8.00		7.70	10.00	30.00		5.00	0.50		0.2	
28-08-2025	6.80	7.57	316.00	490.00		18.00	6.00		7.72	10.00	28.00		4.00	0.40		0.4	
29-08-2025	7.38	7.48	269.00	390.00		15.00	5.00	7.0×10^4	7.50	12.00	34.00		5.00	0.60	145	0.2	
30-08-2025	7.96	7.59	284.00	408.00		15.00	4.00		7.69	13.00	30.00		6.00	0.40		0.3	
31-08-2025	7.89	7.63	289.00	419.00		14.00	4.00		7.75	15.00	42.00		5.00	0.50		0.2	


 LAB ENGINEER


 SITE INCHARGE

DAILY PERFORMANCE REPORT OF SEWAGE SAMPLE																
NAME OF SITE- B.3 MLD STP PAKKA POKHRA MIRZAPUR																
Month: August- 2025																
DATE	STP IN RECEIVED WASTEWATER	INLET							OUTLET							REMARKS
		PH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	TP (PPM)	TF (PPM)	Fecal Coliform (MPN/100ml)	PH	TSS (mg/l)	COD (mg/l)	BOD (mg/l)	TP (PPM)	TF (PPM)	Fecal Coliform (MPN/100ml)	
01-08-2025	1.85	7.24	303.00	423.00	187.00	23.00	4.06		7.83	25.00	38.00	8.00	5.00	0.30		0.2
02-08-2025	2.08	7.69	383.00	463.00	213.00	26.00	5.00	8.0×10^3	7.73	19.00	36.00	7.00	4.00	0.50	145	0.4
03-08-2025	1.78	7.55	329.00	446.00	217.00	26.00	6.00		7.76	17.00	36.00	6.00	6.00	0.50		0.2
04-08-2025	2.13	7.85	315.00	336.00	187.00	19.00	6.00		7.71	15.00	48.00	6.00	4.00	0.60		0.4
05-08-2025	2.49	7.71	290.00	386.00	290.00	20.00	5.00	8.0×10^3	7.79	18.00	43.00	6.00	5.00	0.60	165	0.2
06-08-2025	2.69	7.60	309.00	432.00	187.00	24.00	5.00		7.81	15.00	35.00	7.00	5.00	0.80		0.3
07-08-2025	2.89	7.59	345.00	453.00	197.00	14.00	6.00		7.75	14.00	37.00	6.00	6.00	0.70		0.5
08-08-2025	3.08	7.56	365.00	468.00	193.00	16.00	6.00	8.0×10^3	7.89	12.00	32.00	6.00	6.00	0.70	285	0.4
09-08-2025	3.81	7.66	308.00	435.00	183.00	14.00	5.00		7.77	19.00	49.00	5.00	5.00	0.60		0.2
10-08-2025	4.30	7.70	300.00	450.00	197.00	10.00	5.00		7.84	15.00	38.00	6.00	5.00	0.50		0.2
11-08-2025	5.59	7.53	296.00	359.00	177.00	16.00	4.00	7.0×10^3	7.60	19.00	39.00	6.00	4.00	0.60	255	0.4
12-08-2025	6.08	7.85	370.00	455.00	190.00	18.00	5.00		7.55	15.00	34.00	7.00	4.00	0.50		0.3
13-08-2025	6.04	7.03	341.00	430.00	197.00	18.00	6.00		7.88	14.00	40.00	8.00	6.00	0.50		0.3
14-08-2025	6.17	7.58	314.00	420.00	187.00	20.00	6.00	6.0×10^3	7.67	13.00	35.00	7.00	5.00	0.60	260	0.3
15-08-2025	5.70	7.62	304.00	395.00	180.00	20.00	5.00		7.73	16.00	30.00	6.00	4.00	0.50		0.4
16-08-2025	5.58	7.68	388.00	407.00	183.00	24.00	6.00		7.79	14.00	35.00	6.00	5.00	0.60		0.3
17-08-2025	5.51	7.50	349.00	480.00	203.00	22.00	7.00	8.0×10^3	7.89	13.00	31.00	6.00	5.00	0.60	255	0.2
18-08-2025	5.14	7.61	319.00	420.00	190.00	25.00	5.00		7.65	10.00	30.00	7.00	4.00	0.50		0.4
19-08-2025	6.30	7.83	337.00	440.00	197.00	22.00	5.00		7.54	13.00	35.00	7.00	5.00	0.50		0.2
20-08-2025	5.85	7.58	345.00	462.00	205.00	22.00	6.00	8.0×10^3	7.63	14.00	36.00	8.00	6.00	0.70	165	0.4
21-08-2025	5.96	7.53	323.00	408.00	197.00	20.00	6.00		7.69	13.00	34.00	6.00	5.00	0.60		0.3
22-08-2025	6.34	7.68	300.00	306.00	180.00	20.00	6.00		7.72	18.00	40.00	8.00	5.00	0.60		0.2
23-08-2025	5.61	7.56	319.00	413.00	187.00	20.00	5.00	7.0×10^3	7.70	12.00	37.00	8.00	6.00	0.60	255	0.5
24-08-2025	6.80	7.39	343.00	429.00	237.00	23.00	5.00		7.58	15.00	42.00	8.00	6.00	0.60		0.4
25-08-2025	7.14	7.49	314.00	417.00	200.00	24.00	4.00		7.63	10.00	32.00	7.00	6.00	0.60		0.3
26-08-2025	7.23	7.27	319.00	447.00	209.00	10.00	4.00	8.0×10^3	7.48	12.00	34.00	7.00	5.00	0.60	275	0.2
27-08-2025	7.05	7.62	313.00	433.00		10.00	5.00		7.70	12.00	33.00		4.00	0.50		0.4
28-08-2025	6.38	7.59	299.00	304.00		21.00	5.00		7.75	14.00	38.00		4.00	0.50		0.2
29-08-2025	6.60	7.84	307.00	413.00		16.00	6.00	6.0×10^3	7.68	12.00	33.00		6.00	0.70	130	0.2
30-08-2025	6.66	7.54	343.00	448.00		24.00	7.00		7.69	16.00	40.00		4.00	0.50		0.5
31-08-2025	7.12	7.67	315.00	455.00		24.00	5.00		7.75	15.00	42.00		5.00	0.50		0.2

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SITE INCHARGE

DAILY PERFORMANCE REPORT OF SEWAGE SAMPLE

NAME OF SITE- 7 MLD STP VINDHYCHAL MIRZAPUR

Month: JUNE - 2025

DATE	STP ON RECEIVED SEWAGE IN MLD	INLET					OUTLET					Residual Chlorine (PPM)	Remarks
		PH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Total Coliform (MPN/100ml)	PH	TSS (mg/l)	BOD (mg/l)	COD (mg/l)	Total Coliform (MPN/100ml)		
01-06-2025	2.63	7.33	267.8	100.0	310.0	8.0×10^4	7.52	8.81	8.00	41.00	200	0.2	
02-06-2025	3.77	6.92	254.5	157.0	237.0	6.0×10^4	7.44	5.20	8.00	40.00	200	0.0	
03-06-2025	3.30	7.23	250.7	107.0	204.0	6.0×10^4	7.59	5.40	7.00	38.00	< 200	0.5	
04-06-2025	3.93	7.45	283.3	130.0	305.0	9.0×10^4	7.67	8.30	7.00	35.00	< 200	0.2	
05-06-2025	4.13	7.33	262.6	153.0	310.0	6.0×10^4	7.55	7.70	6.00	36.00	< 200	0.4	
06-06-2025	2.45	7.53	271.2	160.0	323.0	6.0×10^4	7.07	7.80	8.00	40.00	200	0.3	
07-06-2025	1.37	7.24	270.7	167.0	343.0	6.0×10^4	7.45	8.70	9.00	41.00	200	0.2	
08-06-2025	3.14	6.87	243.0	163.0	298.0	6.0×10^4	7.39	8.70	9.00	42.00	< 200	0.3	
09-06-2025	2.24	7.38	287.6	167.0	324.0	9.0×10^4	7.72	8.50	9.00	45.00	200	0.1	
10-06-2025	3.14	7.67	264.8	160.0	302.0	8.0×10^4	7.03	9.20	8.00	40.00	200	0.2	
11-06-2025	2.26	7.47	269.2	157.0	308.0	7.0×10^4	7.70	9.50	9.00	48.00	200	0.7	
12-06-2025	4.98	7.57	283.3	175.0	356.0	9.0×10^4	7.72	8.80	8.00	40.00	200	0.3	
13-06-2025	3.62	7.33	261.2	165.0	313.0	8.0×10^4	7.62	7.70	8.00	33.00	< 200	0.4	
14-06-2025	1.90	7.45	258.4	157.0	281.0	6.0×10^4	7.60	7.60	7.00	37.00	< 200	0.1	
15-06-2025	2.00	7.57	272.3	160.0	297.0	7.0×10^4	7.73	7.80	7.00	35.00	< 200	0.4	
16-06-2025	1.76	7.49	281.2	167.0	326.0	8.0×10^4	7.50	7.80	9.00	41.00	200	0.2	
17-06-2025	2.17	7.38	289.4	170.0	306.0	8.0×10^4	7.55	8.20	9.00	45.00	200	0.1	
18-06-2025	3.57	7.46	286.4	160.0	219.0	7.0×10^4	7.40	9.30	8.00	43.00	200	0.2	
19-06-2025	2.15	7.35	246.3	150.0	277.0	7.0×10^4	7.45	7.60	7.00	34.00	< 200	0.5	
20-06-2025	1.70	7.25	283.8	157.0	308.0	8.0×10^4	7.39	7.70	7.00	39.00	< 200	0.4	
21-06-2025	1.91	7.32	273.8	167.0	306.0	8.0×10^4	7.99	7.80	8.00	38.00	< 200	0.6	
22-06-2025	2.06	7.46	259.3	153.0	298.0	6.0×10^4	7.62	8.00	8.00	30.00	200	0.2	
23-06-2025	2.20	7.09	268.8	160.0	339.0	9.0×10^4	7.57	8.30	8.00	42.00	200	0.3	
24-06-2025	1.96	7.34	312.6	167.0	305.0	8.0×10^4	7.00	6.80	6.00	32.00	< 200	0.4	
25-06-2025	1.95	7.51	259.6	153.0	328.0	8.0×10^4	7.72	6.00	8.00	40.00	200	0.3	
26-06-2025	1.98	7.58	287.8	263.0	339.0	7.0×10^4	7.39	7.30	7.00	35.00	200	0.3	
27-06-2025	1.93	7.42	280.4	153.0	310.0	7.0×10^4	7.00	7.80	8.00	39.00	200	0.2	
28-06-2025	1.41	6.93	293.2	267.0	342.0	8.0×10^4	7.45	8.30	6.00	30.00	< 200	0.2	
29-06-2025	1.36	7.24	268.8	160.0	308.0	9.0×10^4	7.65	8.50	8.00	34.00	200	0.2	
30-06-2025	1.88	7.57	260.6	157.0	306.0	6.0×10^4	7.72	7.40	8.00	30.00	< 200	0.3	

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Annexure 11: List of Drains and its Status

Sl. No	Name of Drain	Tapped / Untapped	STP/STP to which the drain is proposed to be connected after tapping
1	Bisunderpur Drain	Untapped	8.5 MLD STP Bisunderpur
2	Hanumanghat Drain	Untapped	8.5 MLD STP Bisunderpur
3	Public club Drain	Tapped	8.5 MLD STP Bisunderpur
4	Barahmiliah Drain	Tapped	8.5 MLD STP Bisunderpur
5	District judge Drain	Tapped	8.5 MLD STP Bisunderpur
6	Lift canal Drain	Tapped	8.5 MLD STP Bisunderpur
7	Irrigation colony Drain	Tapped	8.5 MLD STP Bisunderpur
8	MorchaGhar Drain	Tapped	8.5 MLD STP Bisunderpur
9	Ghoreshahid Drain	Tapped	8.5 MLD STP Bisunderpur
10	Konia	Tapped	22.5 MLD STP Pakka Pokhara
11	Balaji temple	Untapped	22.5 MLD STP Pakka Pokhara
12	Chorawa	Untapped	22.5 MLD STP Pakka Pokhara
13	Kachari Drain	Tapped	22.5 MLD STP Pakka Pokhara
14	Oliyar	Tapped	22.5 MLD STP Pakka Pokhara
15	Sundar	Tapped	22.5 MLD STP Pakka Pokhara
16	Badali	Tapped	22.5 MLD STP Pakka Pokhara
17	Narghat	Tapped	22.5 MLD STP Pakka Pokhara
18	Khandawa	Tapped	22.5 MLD STP Pakka Pokhara
19	Basvariya Drain	Tapped	07 MLD STP Vindhyachal
20	DiwanGhat new Drain	Untapped	07 MLD STP Vindhyachal
21	BalughatKacha Drain	Untapped	07 MLD STP Vindhyachal
22	Malhaya Drain	Untapped	07 MLD STP Vindhyachal
23	Patengra (manasarovar) Drain	Untapped	07 MLD STP Vindhyachal
24	DiwanGhat old Drain	Tapped	07 MLD STP Vindhyachal
25	BalughatPakka Drain	Tapped	07 MLD STP Vindhyachal
26	Parasuram Drain	Tapped	07 MLD STP Vindhyachal
27	Gudara Drain	Tapped	07 MLD STP Vindhyachal

Annexure 12: List of Key Polluting Industries in Mirzapur City

Sl. No	Name and Address of Industry	Product	Production Capacity	Industrial Effluent Quantity	Discharge Status	Flow/Discharge at Present
1	Annapurna Carpets Pvt. Ltd, Tikari, Nakahara Road, Mirzapur	Dyed Woolen Yarn	3000 KG/Day	280 kLD	280 kLD treated, recycled, rest as per norms	250 kLD (Approx.)
2	Jaipar Rugs Company Pvt. Ltd, Arazi No-123, 131, 132, 133/1, 135/2, 141, Village-Godnapur, Post-Rajapur, Tappa-Kal, Pargana Kanti, Tehsil Sadar, Dist- Mirzapur	Dyed Yarn/Tufted Carpet	5000 Kg/Day	300 kLD	2 kLD to river, rest recycled	170 kLD (Approx.)
3	Neman Carpets and Dyeing Division, C-3, C-4, IND ESTATE, PATHRAYA, MIRZAPUR	Dyed Woolen Yarn	500 Kg/Day	17 kLD	Treated, reused, rest as per norms	15 kLD (Approx.)
4	Appolo Dyeing Centre, Bairahawa Chauraha Sohata, Adda Jangi Road, PARGANA KANTI, MIRZAPUR	Dyed Woolen Yarn	140 Kg/Day	5 kLD	Treated, reused, rest as per norms	3 kLD (Approx.)
5	Infashion Carpet, Vill-Gopalpur, Tappa-84, Kanti, Sadar, Mirzapur, Dugdh Utpadak Sahkari Sangh, Mirzapur	Dyed Woolen Yarn, Milk Chilling Plant	350 Kg/Day, 10 kLD	3 kLD, 8 kLD	Milk effluent reused in irrigation, woolen to river	3 kLD, 1 kLD
6	Dugdh Upadak Sahkari Sangh, Mirzapur	Milk Chilling Plant	10 kLD		ZLD (3.8 kLD treated effluent shall reused in irrigation)	01 kLD (Approx.)
7	SBC Export Limited, Gram-Sagra, Gosaiipur, Tehsil-Sadar, Mirzapur	Dying of cotton fabrics	1.5 MT/Day	48 kLD	Reused in process, rest as per norms	43 kLD (Approx.)
8	Natasha Overseas Corporation, Basain, Vindhyachal, District-Mirzapur	Dying of Hosiery Cloth	500 KG/Day	6.5 kLD	Treated, reused, rest as per norms	12 kLD (Approx.)

Annexure 13: Detailed costing of Intervention 1

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	I&D Structures	No.	1	2,50,00,000	250.00	Previous UP sewerage Projects
2	Rising Main	Km	2.8	1,00,00,000	280.00	
3	SPS at Khandwa Nallah	MLD	25	60,00,000	570.00	
4	STP at Bharuhana	MLD	20	2,00,00,000	4,000.00	
	Total	-	-	-	5,100.00	

Annexure 14: Detailed costing of Intervention 2

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	Secondary Treatment Plant - SBR based	MLD	14	5,000,000	700.00	Previous UP sewerage Projects
	Total	-	-	-	700.00	

Annexure 15: Detailed costing of Intervention 3

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	Connecting Network (Inlet chamber to ETP)	Km	0.9	1,00,00,000	90.00	Previous UP sewerage Projects
2	ETP at Vindhyachal	MLD	2	3,00,00,000	600.00	
	Total	-	-	-	690.00	

Annexure 16: Detailed costing of Intervention 4

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	Co-Treatment Plant (25 kLD)	Lump sum	1	2,50,00,000	250.00	Haldwani-Kathgodam DPR document
2	Desludging Vehicle (3000 L)	No.	2	20,00,000	40.00	
	Total	-	-	-	290.00	

Annexure 17: Detailed costing of Intervention 5

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	Identification & Demarcation	Km	14	180,000	25.20	UP Jal Nigam SBM-Urban survey precedents + escalation
2	Safety & Pre-removal Control	No.	30	25,000	7.50	Jal Nigam SOR (temporary works) + IEC
3A	Waste Removal – Type A (Legacy Dumps)	MT	1400	2,000	28.00	SBM-Urban biomining tenders + site premium (100MT per Km)
3B	Waste Removal – Type B (Ghat-side)	MT	700	3,000	21.00	SWM Rules 2016 + narrow access (50MT per Km)
4A	Transport to ULB Facility	MT	2100	450	9.45	Jal Nigam BOQ (Prayagraj STP) + escalation (10MT per hotspot)
4B	Disposal at Processing Site	MT	2100	150	3.15	CPCB SWM guidelines
5A	Prevention – Twin Bins & Litter Points	Unit	420	3,200	13.44	SBM-Urban IEC norms + logistics (30 per Km)
5B	Prevention – Mesh Barriers / Bar Screens	Metre	14	35,000	4.90	CPCB riverfront restoration (1 per Km)
5C	Prevention – Daily Sweeping & Washing	Ghat/day	294	2,200	6.47	ULB O&M norms + festival load (21 GhatsX14 days)
5D	Prevention – Anti-littering Signboards	Unit	140	7,500	10.50	Smart City IEC tenders + cultural design (10 per km)
	Total	-	-	-	130	

Annexure 18: Detailed costing of Intervention 6

Components	Unit	Dimension / Quantity	Unit Rate (₹)	Block Cost (₹ lakhs)	Reference
Creation of Waterbody database	Lump sum	1	3,500,000	35.00	Costing is based on NIUA's CWIN Gwalior citywide integrated water dashboard scope, Bhopal Municipal Corporation's GIS asset survey tender value and Survey of India geospatial pricing for digital vector data.
Total	-	-	-	35.00	

Annexure 19: Detailed costing of Intervention 7

Sl. No	Intervention / Component	Detailed Description of Work	Unit	Estimated Qty	Unit Rate	Total Amount (INR Lakhs)	Remarks / Assumptions
1	Weed Removal	Surface and root removal of invasive aquatic weeds (e.g., water hyacinth) from the entire pond area.	Sq.m	11130	₹ 45	₹ 5.01	Based on the total surface area of the pond.
2	Dredging & Desilting	Mechanical dredging of the pond bed to achieve desired depth and desilting. Includes disposal of excavated earth/sludge to designated dumping grounds.	Cu.m	22260	₹ 250	₹ 55.65	Cost based on Market Rates
3	Boundary Fencing	Provision of MS (Mild Steel) grill / Chain-link fencing along the pond perimeter over a dwarf retaining wall for safety and security- G.I. chain link fabric mesh size 50x50 mm & G.I. wire of dia 4 mm.	Rmt	500	₹ 991	₹ 4.96	Cost Based on Consultant ongoing project experience of Haridwar Corridor
4	Constructed Wetland	Civil works, filter media (gravel/sand), and plantation (reed beds) for a 0.2-acre subsurface flow wetland to treat 0.1 MLD nallah inflow.	MLD	0.1	₹ 50,000,000	₹ 50.00	Guidelines for Constructed Wetland Systems for treatment of sewage in India
5	Permeable Pathway	Earthwork, base preparation, and laying of permeable paver blocks along with safety railing, benches, etc.	Sq.m	1850	₹ 2,400	₹ 44.40	Assumes a standard width (e.g., 2m or 3m) × perimeter length. Cost Based on Consultant ongoing project experience of Haridwar Corridor
6	Foot Over Bridge	Fabrication and erection of a small pedestrian foot over bridge (steel/wood composite) across designated narrow pond sections.	Sq.m	15	₹ 56,000	₹ 8.40	Measurement based on deck area (Length × Width). Cost Based on Consultant ongoing

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Sl. No	Intervention / Component	Detailed Description of Work	Unit	Estimated Qty	Unit Rate	Total Amount (INR Lakhs)	Remarks / Assumptions
							project experience of Haridwar Corridor
7	Periphery Lighting	Supply and installation of LED street lights/bollards along the pathway, including cabling, trenching, and feeder pillars.	Nos	40	₹ 32,000	₹ 12.80	Typically spaced 15–20 meters apart.
8	Food Cafeteria	Construction of a semi-permanent/permanent food cafeteria block in the Devi Ahilyabai Holker Memorial Park (Northwest).	Sq.m	30	₹ 35,000	₹ 10.50	Cost based on DSR, CPWD Plinth Area rate
9	Children's Play Area	Installation of multi-play stations, swings, safety EPDM rubber flooring, and seating in the northwest park area.	L.S.	1	₹ 850,000	₹ 8.50	Can also be calculated per Sq.m of developed area.
10	Toilet Block	Construction of a public convenience block (male, female, differently-abled) with plumbing, septic tank/soak pit or sewer connection.	Sq.m	40	₹ 35,000	₹ 14.00	Based on standard architectural footprint. Cost based on DSR, CPWD Plinth Area rate
11	West Entrance	Provision of a secondary entrance gate, ticketing/guard cabin, and hardscaping to provide access to adjacent residents.	L.S.	1	₹ 550,000	₹ 5.50	Lumpsum cost based on gate design and size.
12	East Entrance & Plaza	Third entrance gate, paved seating plaza, benches, and landscaping elements.	L.S.	1	₹ 400,000	₹ 4.00	-
13	Open-Air Gym	Supply and installation of weather-proof outdoor fitness equipment (e.g., cross walkers, pull-up chairs) near the East Entrance.	Set	1	₹ 150,000	₹ 1.50	One set typically includes 8-10 pieces of equipment. Sit Up Board, Leg Press, Surf Board, Twister, Chest Press, Parallel Bar, Air Walker / Stroller, Shoulder

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Sl. No	Intervention / Component	Detailed Description of Work	Unit	Estimated Qty	Unit Rate	Total Amount (INR Lakhs)	Remarks / Assumptions
							Builder / Arm Wheel. Cost Based on GeM Portal
14	Recreational Boats	Procurement of paddle boats or rowing boats (FRP material) with life jackets and safety gear.	Nos	6	₹ 75,000	₹ 4.50	Decide quantity based on pond size and expected footfall.
15	Fountain / Aerator	Supply and installation of a floating fountain/aerator system in the pond (including submersed cabling and control panel).	Nos	1	₹ 225,000	₹ 2.25	Enhances aesthetics and improves Dissolved Oxygen (DO).
					Sub-Total	₹ 231.96	
		Contingencies & Escalation (5%)				₹ 11.60	Standard block estimate buffer.
		Design & PMC Fees (5%)				₹ 11.60	Project Management Consultancy.
		TOTAL				₹ 255.16	

Annexure 20: Detailed costing of Intervention 9

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
Option A: Reuse of treated used water for cooling at Adani Power Plant, Khedi Khurd, Mirzapur						
1	Pumping station	MLD	8.5	60,00,000	270.00	Previous UP sewerage Projects
2	Pump house upgradation	MLD	22.5	10,00,000	230.00	
3	Network (STP - Power Plant)	Km	35	1,80,00,000	6,300.00	
	Total	-	-	-	6,800.00	
Option B: Reuse of treated used water for horticulture in Mirzapur and Windaw fall range						
1	Pumping station	MLD	8.5	60,00,000	270.00	Previous UP sewerage Projects (25-30% high cost for uneven terrain in forest land)
2	Pump house upgradation	No.	22.5	10,00,000	230.00	
3	Network (STP - Forest land)	Km	25	1,80,00,000	4,500.00	
	Total	-	-	-	5,000.00	

Annexure 21: Detailed costing of Intervention 10

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Total Cost (₹ lakhs)	Reference
1	DI and HDPE pipelines 300mm	Km	0.7	3,000,000	21.00	Previous UP sewerage Projects
	Total	-	-	-	21.00	

Tender-Based Costing (SBM-U / UP Jal Nigam)

Base Vehicle Costs (Tender Rates)

- 3 KL vacuum truck: ₹15-18 lakh
- 5 KL vacuum truck: ₹22-25 lakh
- 10 KL vacuum truck: ₹30-35 lakh

(These rates are drawn from SBM-U DPRs and UP Jal Nigam tender schedules for faecal sludge management vehicles in cities such as Sitapur, Hardoi, Jhansi, and Mirzapur, 2023-25.)

Annexure 22: Detailed costing of Intervention 11

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Reference
1	Canopy Structures (Earthwork, CC 1:1½:3, Structural steel, 1.00 mm thick G.S. sheet roofing & paint.)	Sqm	400	4,694	18.78	As per ongoing project experience of Haridwar Corridor
2	C.I. Benches	No.	48	1,000	0.48	GeM Portal
3	Pre-Cast RCC 1000 litre Kalash shaped bins	No.	5	20,000	1.00	As per Market study (approx. ranges from 15000-20000 INR per piece.)
4	Toilet and Store Room	Sqm	60	35,000	21.00	DSR, CPWD Plint Area Rate
	Total (A)				41.26	
	Consultancy cost (@ 2% of Total)				0.83	
	Block cost (B)				42.08	
	Contingency (@ 15% of Total) (C)				6.31	
	Grand Total (B+C)				48.39	

Annexure 23: Detailed costing of Intervention 12

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Number of people/ staffs to be engaged
1	Multilingual Jingles (2 jingles per year in at least 3 languages)	No.	30	25,000	7.50	60 months including broadcast	3-6
2	Street Plays (On monthly basis)	No.	60	15,000	9.00	60 months	10-12
3	Wall Art Murals	Sq.m.	50	120,000	60.00	5-6 months	12-15
5	Community Co-design Workshops (On quarterly basis)	No.	20	28,000	5.60	60 months	10-12
6	Monitoring & Feedback (On quarterly basis)	Lump Sum	20	50,000	10.00	60 months	25-30
	Total Cost (5 years)				92.1	60 months	
	Total Cost per year				18.42	12 months	

Annexure 24: Detailed costing of Intervention 13

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Number of people/ staffs to be engaged
1	SHGs led Biodegradable Ritual Kits	No.	1,250,000	20	250.00	60 months	4-6
2	IEC activities (On quarterly basis)	No.	20	30,000	6.00	60 months	6-8
3	Distribution Channels Setup	Lump Sum	1	500,000	5.00	60 months	10-12
4	Monitoring & Feedback	Lump Sum	20	50,000	10.00	60 months	25-30
	Total Cost (5 years)				271	60 months	
5	Community training (20- 25 people)	No.	2	25,000	0.50	12 months	2-4
	Total Cost per year				54.70	12 months	

Annexure 25: Detailed costing of Intervention 14

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Number of people/ staffs to be engaged
1	Story Circles & river heritage board (Design + Messaging)- annual refresh of slogans, visuals, narratives	Lump Sum	1	1,000,000	10.00	60 months	10-12
2	Cultural programs	No.	20	25,000	5.00	60 months	10-12
3	Community Co-design Workshops (On quarterly basis)	No.	20	28,000	5.60	60 months	10-12
3	Annual Festival & Awards (River Ambassadors)	No.	5	200,000	10.00	60 months	15–20
	Total Cost (5 year)				30.6		
4	Community training (20- 25 people)	No.	2	25,000	0.50	12 months	2-4
5	Digital story walls	No.	23	11,500	2.65	12 months	
	Total (per year)				9.27		

Annexure 26: Detailed costing of Intervention 15

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Number of people/ staffs to be engaged
1	Creative Signboard	No.	88	25,000	22.00	12 months	10-12
	Annual refresh (Creative Signboard)	No.	352	5,000	17.60	48 months	5-6
2	Behavioural Science Design and River ecology Awareness Boards	No.	34	25,000	8.50	12 months	5-6
		No.	136	5,000	6.80	48 months	2-3
3	Community Co-design Workshops (On quarterly basis)	No.	20	28,000	5.60	60 months	10-12
	Total Cost (5 year)				60.5	60 months	
	Total (per year)				12.10	12 months	

Annexure 27: Detailed costing of Intervention 16

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Number of people/ staffs to be engaged
1	Katha vachak and IEC campaigns	Lump sum	60	30,000	18.00	60 months	Priests are cultural influencers; advocacy drives during rituals ensure behavioural change.
2	Community Co-design Workshops (On quarterly basis)	No.	20	28,000	5.60	60 months	10-12
	Total Cost (5 year)				23.6		
	Total (per year)				4.72		

Annexure 28: Detailed costing of Intervention 17

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Remarks
1	Institutional Integration (38 Wards and one at city level)	No.	39	20,000	7.80	6–12	one at each level
2	Monthly Clean-up Drives	No.	10	130000	13.00	12 months	Gloves, waste bags, protective gear; reduced frequency but impactful
3	Community training (20- 25 people)	No.	2	25,000	0.50	12 months	
3	Volunteer Mobilization (NSS/NCC, SHGs, Youth Clubs)	No. of Committee	39	3000	1.17	12 months	Monthly clean-up campaigns, protective gear, waste bags
	Total (per year)				22.47		

Annexure 29: Detailed costing of Intervention 18

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Remarks
1	Annual Festival	No.	1	200,000	2.00	12 months	
2	Competitions in Schools & Colleges (Awareness + Mini Challenges - One in every Institute)	Lump sum	50	250,000	125.00	12 months	Focused competitions (poster-making, prototypes, pledges); ensures grassroots participation
3	Eco - Stalls	no.	84	11,000	9.24	12 months	
4	Awareness Drives	no.	34	25000	8.50	12 months	river walks, folk dances and storytelling sessions
5	Publishing	Lump sum	1	250,000	2.50	12 months	
6	Community Co-design Workshops (On quarterly basis)	No.	4	28,000	1.12	12 months	
	Total (per year)				148.36		

Annexure 30: Detailed costing of Intervention 19

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Remarks
1	Short Term Internship	No.	100	8,000	8.00	2 weeks	
2	Skill Development with certificates	No.	100	30,000	30.00	3 months	
	Total (per year)				38.00		

Annexure 31: Detailed costing of Intervention 20

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Remarks
1	Community Co-design Workshops (On quarterly basis)	No.	4	28,000	1.12	12 months	
2	Live Training Program	Lump sum	12	30,000	3.60	12 months	
3	Education and Participant Training Program (25 people each on quarterly basis as pilot project)	Lump sum	100	7,500	7.50	13 months	
	Total (per year)				12.22		

Annexure 32: Detailed costing of Intervention 21

Sl. No	Components	Unit	Dimension / Quantity	Unit Rate (₹ Rupees)	Block Cost (₹ lakhs)	Duration of Task	Remarks
1	IEC Campaigns	Lump sum	21	20,000	4.20	12 months	Posters, banners, announcements, hoardings at ghats, temples
2	Community Led Clean Up Drives	Lump sum	21	10,000	2.10	12 months	river walks, folk dances and storytelling sessions
3	Certificate & Appreciation badges	Lump sum	500	100	0.50	12 months	
	Total (per year)				6.80		