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Government of India

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# Vibrant Public Spaces

## 50+ Water & Parkscapes from India's Smart Cities Mission

Ministry of Housing and Urban Affairs
Government of India

The Ministry of Housing and Urban Affairs (MoHUA), established in 1952, is the apex authority of the Government of India at the national level responsible for formulating policies, sponsoring and supporting programs, coordinating the activities of various central ministries, state governments, and other nodal authorities, and monitoring initiatives related to housing and urban development across the country. MoHUA oversees a wide range of national missions and programs, including the Smart Cities Mission (2015), Swachh Bharat Mission - Urban (2014), Atal Mission for Rejuvenation and Urban Transformation (AMRUT) (2015), Pradhan Mantri Awas Yojana - Urban (PMAY-U) (2015), National Urban Livelihoods Mission (NULM) (2013), PM Street Vendor's AtmaNirbhar Nidhi (PMSVANidhi) (2020), and initiatives related to Urban Transport.

Smart City
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Smart Cities Mission was launched in 2015 by the Ministry of Housing and Urban Affairs (MoHUA), the apex authority of the Government of India. The main objective of the Mission is to promote cities that provide core infrastructure, clean and sustainable environment and give a decent quality of life to their citizens through the application of 'smart solutions'. The Mission aims to drive economic growth and improve quality of life through comprehensive work on social, economic, physical and institutional pillars of the city.

National Institute of Urban Affairs

Founded in 1979, the National Institute of Urban Affairs (NIUA) is a national think tank on urban planning and development. It works closely with the Ministry of Housing and Urban Affairs, alongside other government and civil sectors, to identify key areas of research, provides cross disciplinary expertise and technical assistance for city and state-level projects, as well as develops toolkits and customised training programmes to strengthen the capacity of local and regional governing agencies. The organisation is the first port of call for international donors and institutions seeking to develop meaningful partnerships in the country.

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The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH has been operating in India for over 60 years. In 2022, India and Germany signed the Green and Sustainable Development Partnership and made a commitment to achieving the goals of the 2030 Agenda and the Paris Agreement. One of the focus areas for GIZ in India is to work for sustainable urban and industrial development by supporting the development of clean, inclusive, green and resilient urban and industrial areas. There is also a focus on integrated river basin management in the country.



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By Smart Cities Mission, Ministry of Housing and Urban Affairs, Nirman Bhawan, Dr. Maulana Azad Road, New Delhi-110011, India

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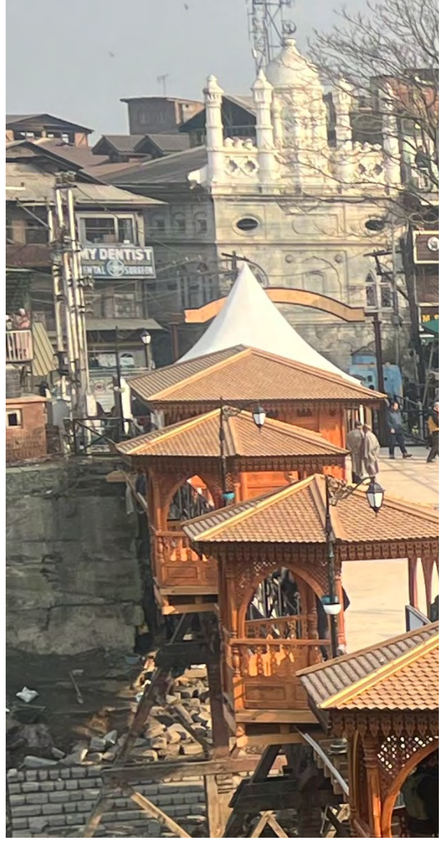

*We thank all the municipal commissioners, smart city CEOs and team members, convergence agencies and departments, partner organisations for planning, design, project management, execution, and local civil society groups for their contribution to the projects and sharing the knowledge with us. We also thank fellow professionals and friends for sharing their feedback on these transformed vibrant public spaces.*

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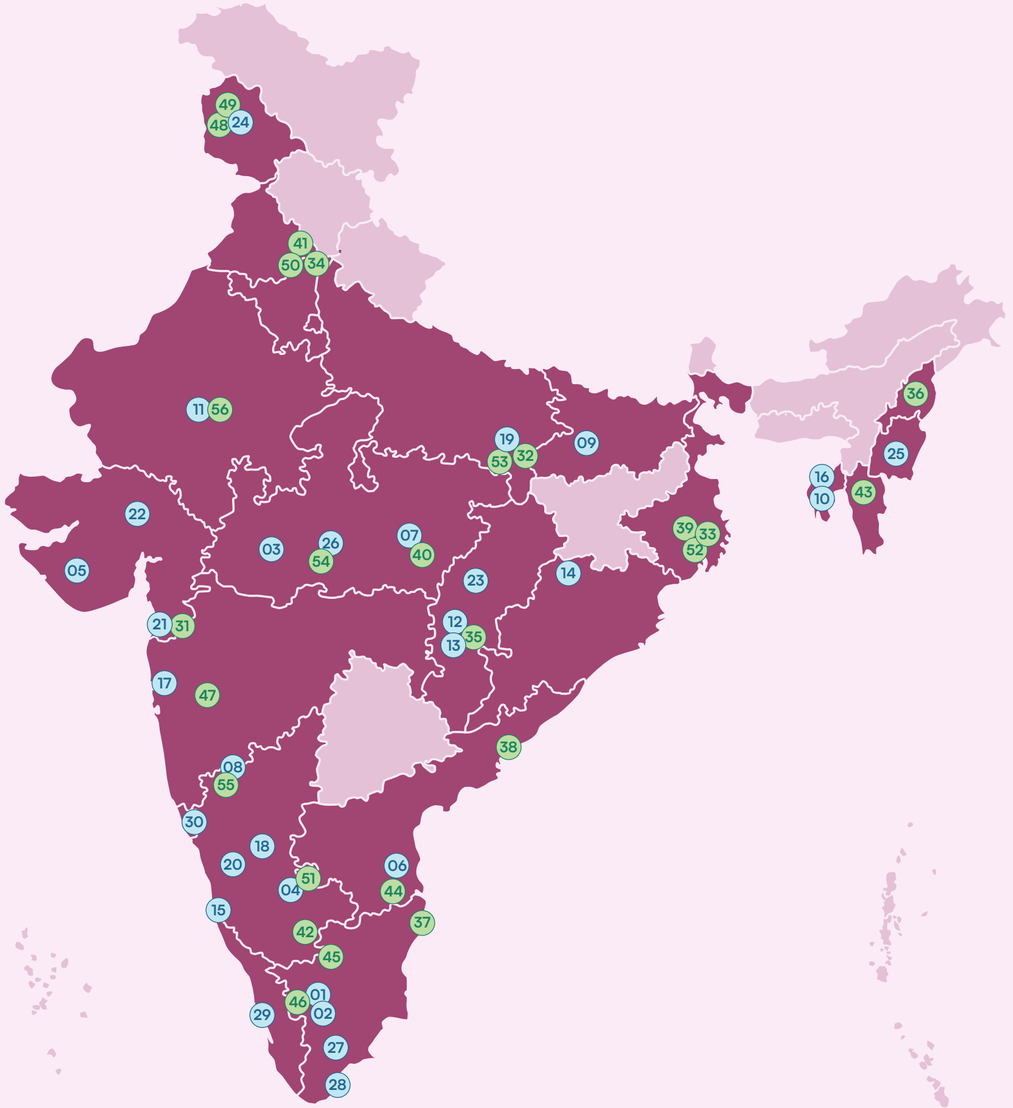


# Forewords

**Shri Manohar Lal**

Hon'ble Minister,
Ministry of Housing and Urban Affairs
& Ministry of Power

मनोहर लाल
**MANOHAR LAL**

आवासन और शहरी कार्य मंत्री एवं
विद्युत मंत्री
भारत सरकार
**Minister of**
**Housing and Urban Affairs; and**
**Minister of Power**
**Government of India**

**Foreword**

World Bank estimated that India's cities require an estimated capital investment of USD 840 billion in urban infrastructure and municipal services in the 15 years till 2036 (in 2020 prices), equivalent to 1.18% of estimated Gross Domestic Product (GDP) over this period. This presents us with an unparalleled opportunity to reimagine infrastructure itself such that it promotes socio-economic and environmental resilience. Our lakes, rivers, parks, and streets must be designed and managed such that they alleviate water stress, reduce flooding, provide cooling, improve air quality, expand habitats for biodiversity, and foster human connections. To achieve this, we need not only greater private sector financing, including municipal borrowings and PPPs, but also technical expertise, skillful execution, and effective management models.

The compendium, *'Vibrant Public Spaces: 50+ Water & Parkscapes from India's Smart Cities Mission'*, showcases projects that integrate ecological and human needs - foundational to creating cities that are resilient, healthy, and liveable. The restoration of seven lakes in Coimbatore is planned for basin-level water management using natural water treatment methods. The precinct development of Mahakal Mahalok Temple in Ujjain boosts local livelihoods and tourist footfalls. The riverfronts in Srinagar and Imphal use naturalised edges and materials to minimise cost and carbon footprint, while Surat Biodiversity Park and Chandigarh Bird Park help citizens learn about local flora and fauna. Pimpri Chinchwad and Varanasi used the underside of flyovers for neighbourhood sports facilities and street vending, addressing functional needs with creativity.

This publication invites us to reflect on how well-designed public spaces can simultaneously address environmental challenges, nurture social connections, and catalyse economic opportunities. However, creating such spaces is just the beginning - the true measure of success lies in their quality of implementation, durability, and financial sustainability over time. As we continue this journey, I urge all stakeholders government bodies, private entities, and citizens to share responsibility for nurturing these urban assets, ensuring their vitality for generations to come.

**(Manohar Lal)**

New Delhi
26.03.2025

**Shri Tokhan Sahu**

Hon'ble Minister of State,
Ministry of Housing and Urban Affairs

तोखन साहू
**TOKHAN SAHU**

आवासन और शहरी कार्य राज्य मंत्री
भारत सरकार
**Minister of State for Housing & Urban Affairs**
**Government of India**

**MESSAGE**

As India's urban landscape evolves, smaller cities and towns are experiencing rapid growth, significantly contributing to the nation's urbanization. Notably, over half of India's urban population resides in towns with fewer than 500,000 inhabitants. This demographic shift underscores the pivotal role these emerging urban centers play in shaping the country's future. Recognizing this, the Smart Cities Mission has inclusively targeted 100 cities, encompassing 66 smaller cities with less than 1 million population. These cities, rich in history and culture, face critical challenges in managing water bodies, green spaces, and urban ecosystems. Ensuring that urban growth does not come at the cost of environmental degradation is key to their long-term resilience.

'*Vibrant Public Spaces: 50+ Water & Parkscapes from India's Smart Cities Mission'*, includes commendable initiatives from these burgeoning cities. For instance, the rejuvenation of the Ranir Pukur lake in Agartala has restored a vital water body and created a communal space for residents. Similarly, Ajmer's efforts in revitalising its historic Anasagar Lake have enhanced tourism and improved local livelihoods. In Raipur, the Nalanda Parisar provides students and competitive exam aspirants a 24/7 conducive learning environment equipped with modern technology, sustainable design, and innovative amenities. Belgavi's Mahila Market has become a food hub, promoting women entrepreneurs. These examples highlight the potential of smaller cities to innovate and address urban challenges effectively.

As we advance, it is imperative to integrate traditional methods of preserving water bodies and promoting biodiversity into modern urban planning. Historically, indigenous practices have sustainably managed natural resources, and revisiting these can offer valuable insights for contemporary challenges. By embracing such holistic approaches, our smaller cities can ensure that urban expansion harmoniously coexists with ecological preservation, paving the way for a resilient and inclusive urban future.

**(Tokhan Sahu)**

New Delhi.
March, 2025

**Katikithala Srinivas, IAS**
Secretary,
Ministry of Housing and Urban Affairs

The Ministry addresses the multidimensional challenges of India's urbanization through a wide range of programs. While other Missions target specific sectoral needs like housing, water and sanitation, livelihoods, or transport, the Smart Cities Mission gave cities the flexibility to develop integrated, cross-sectoral projects that respond to local priorities. 'Vibrant Public Spaces: 50+ Water & Parkscapes from India's Smart Cities Mission', highlights how cities have transformed neglected assets into thriving lakefronts, riverfronts, parks, plazas, and vending markets that address environmental, social, and economic challenges.

I hope that this compendium reinforces that public spaces should not be approached from the lens of beautification but must respond to the diverse user groups and site stresses - let form follow function. For example, Rajkot's circular water management transformed a water-scarce area into the iconic Atal Sarovar. Kohima maximized for space constraints and hilly terrain by stacking a park above a public toilet. Indore removed vehicular congestion on its popular food street, Chappan Dukan, boosting both visitor footfall and shop revenues. I applaud the Mission for elevating public spaces as a national priority, proving that single projects can drive the triple bottom line - livability, economic vibrancy, and sustainability. I hope this knowledge product serves as a reference for state and city officials and professionals committed to India's urban development.

**Roopa Mishra, IAS**
Joint Secretary & Mission Director,
Smart Cities Mission
Ministry of Housing and Urban Affairs

Public spaces are integral to urban life, especially in India's high-density cities, where they serve as extensions of people's homes. These projects bring citizens together - for casual interactions, festive celebrations, recreational activities, or even running small businesses. They foster connections across diverse communities, strengthening social bonds in a world increasingly shaped by digital isolation. Furthermore, such spaces promote healthier lifestyles, providing avenues for physical activity and mental well-being, which are crucial in combating rising lifestyle-related health issues.

To ensure these spaces create lasting value for citizens, they should be durable and well-maintained - long-term success relies on thoughtful planning, robust execution, and sustainable financial management. Cities must select skilled designers and contractors who understand the nuances of accessibility, user needs, and site conditions to avoid pitfalls such as poor ergonomics or non-functional layouts. Rigorous on-ground supervision is key to quality execution. I hope this compendium provides valuable learnings — both Dos and Don'ts for cities to build thriving water and parkscapes.

**Debolina Kundu**
Director (Additional Charge),
National Institute of Urban Affairs

As a key knowledge partner to the Ministry, NIUA has been instrumental in supporting cities selected under the Smart Cities Mission through capacity building, research, and good practice dissemination. With a vision for evidence-based urban transformation, the compendium uncovers several lessons on design and planning, execution, financing, procurement, and operations and maintenance. Ensuring water is recycled either centrally or decentrally before discharge into water bodies and taking stringent measures to manage solid waste can no longer be compromised to ensure the health of water bodies. Shifting to nature-based solutions over high-carbon concrete and steel designs is the need of the hour. Similarly, mitigating the unintended consequences of increased visitor footfall in local communities needs to be pre-empted.

I extend my sincere appreciation to the cities, professionals, and stakeholders whose efforts made these transformations possible and hope this collection inspires other cities to reimagine their urban landscapes for a better future.



**Stephan Hesselmann**
Economic Minister
Counsellor,
German Embassy, India

Launched in 2015, the Smart Cities Mission aims to provide core infrastructure, clean and sustainable environment, and a decent quality of life to all citizens in India. The process of learning from efficiently functional compact spaces in the urban precincts and creating a replicable model can act as a guiding light for all other aspiring cities. Under the umbrella of the Green and Sustainable Development Partnership (GSDP) between India and Germany, the German Government is committed to support the Smart Cities Mission in its endeavors to drive sustainable urban development.

To achieve our shared objectives, we can draw on a vast portfolio of bilateral, regional and global development cooperation projects that are funded by the International Climate Initiative (IKI), and implemented by the Federal Ministry for Economic Affairs and Climate Action (BMWK) in close cooperation with the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) and the Federal Foreign Office (AA) of the Government of Germany.

As part of our joint efforts, I am happy to present this compendium of 50+ Vibrant Public Spaces — a collection of case studies that showcase the successful implementation of the Smart Cities Mission. The compendium urges its readers to re-imagine public spaces as a norm that allows a citizen to experience urban spaces and inculcate a sense of ownership. A network of well-connected public spaces facilitated with components of universal accessibility contributes significantly to the preservation of culture and enhances the functioning of the physical spaces we occupy. Furthermore, given the prevalent impacts of the climate crisis, it is a pressing need to accommodate a sustainable approach to design practices, re-learn from the traditional methods of construction and optimise the use of technology to its best potential.

I hope these initiatives will encourage you to learn from the experiences of the Smart Cities Mission and use them to work on innovative, future-looking, and smart solutions to create climate resilient urban spaces in India and beyond.

**Julie Reviere**
Country Director,
Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) India

India is at the precipice of significant urban transformation. The evolving landscape necessitates a strategic approach to urban growth. Under the umbrella of the Green and Sustainable Development Partnership between India and Germany, both countries are committed to drive sustainable urban development. In this context, Germany supports the implementation of various urban missions that were initiated by the Government of India. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, on behalf of the German Government, continues to enable and assist the Ministry of Housing and Urban Affairs (MoHUA), Government of India in carrying out these far-reaching urban development interventions.

The continuous reduction of public spaces in our cities are a cause for concern, prompting a concerted effort through the Smart Cities Mission, one of the flagship programmes of MoHUA. This initiative places a deliberate emphasis on recognising the multifaceted values of public spaces, including social, economic, environmental, and cultural aspects. In line with this vision, GIZ India has actively contributed to the shared objectives of the Smart Cities Mission.

This compendium is a curated collection of projects that transcend the conventional idea of public spaces. They are more than just urban interventions; they embody the spirit of creating interconnected open spaces, linear corridors, and streetscapes that enhance accessibility, and foster a spirit of community, following the 'leave no one behind' principle. In light of global challenges posed by climate change, the need to redesign urban landscapes is becoming even more apparent.

This compendium is a celebration of how safe, vibrant, and inclusive public spaces redefine urban aesthetics. Beyond the physical transformations, these projects act as catalysts, fostering community bonds, preserving cultural heritage, and contributing to improved mobility and sustainable urban development. As we delve into the narratives, my hope is that they serve as a source of inspiration. May they inspire continued efforts towards creating urban spaces that not only meet the needs of today but also pave the way for a sustainable and enriching urban future. I hope you enjoy reading and feel inspired to take action!

# Reflections from Reviewers

**Sanjay K Shukla, IAS**
Additional Chief Secretary, Urban Development and Housing Department, Madhya Pradesh

Congratulations to the Smart Cities Mission for this outstanding compilation, which will serve as a valuable knowledge resource to all states and cities in India. Madhya Pradesh takes pride in the 'Mahakal Mahalok Temple Precinct' in Ujjain, which is documented here, and I am sure it stands as an inspiration for other temple towns nationwide. Our success with 'Chappan Dukaan' in Indore is already being replicated in other cities of MP. We are inspired by the range of projects and approaches in this book, and will take forward the learnings.

**Amrit Abhijat, IAS**
Principal Secretary, Urban Development Department, Uttar Pradesh

As India undergoes rapid urbanisation, the rejuvenation of lakes and rivers, the conservation and promotion of green spaces and biodiversity must become sacred pillars of city development. Uttar Pradesh is committed to realising the Prime Minister's vision of Namami Gange, and i am sure that the riverfront projects and parks captured in this compendium will give many design ideas and operation models for towns along the Ganga River. Further, street vendors are important drivers of the city's economy, and the vending haats captured here will help other cities develop similar projects to secure livelihoods and increase incomes. I congratulate the Smart Cities Mission for wide range of innovative projects it has seeded across India.

**Ashwini Kumar, IAS**
Principal Secretary, Urban Development and Urban Housing Department, Gujarat

Gujarat has been at the forefront of urban planning reforms, particularly through our town planning schemes. In our hot and dry climate, expanding green cover and conserving water bodies remain critical priorities. Projects like the Canal Corridor and Kankaria Biodiversity Park in Surat, Sabarmati Riverfront in Ahmedabad, and Atal Sarovar in Rajkot exemplify our commitment to sustainable urban development. I commend the Smart Cities Mission for bringing the focus on public spaces at the national level - ultimately it is what informs the quality of life of citizens.

**Anshul Mishra, IAS**
Managing Director, Tamil Nadu Urban Habitat Development Board & Former Secretary, Chennai Metropolitan Development Authority

For Indian cities to thrive, public realm projects must adopt a holistic, community-driven, and climate-resilient approach, ensuring long-term sustainability with a strong emphasis on quality control, operations, and maintenance. A key driver of such transformation lies in adopting blue-green infrastructure — an approach that integrates natural water bodies, green spaces, and public areas to build climate resilience and improve urban living. The Chennai Metropolitan Development Authority (CMDA), has actively contributed to this vision by implementing lakefront and beachfront redevelopment projects, sponge parks, playgrounds, and public plazas designed to enhance inclusivity, accessibility, and climate resilience. This compendium captures successful examples of such projects, offering practical insights into their design, implementation, challenges, and solutions. By documenting these experiences, it serves as a valuable resource for policymakers, implementers, advocacy groups, investors, and urban development professionals, providing guidance on implementation and addressing key challenges.

**Rajiv R Mishra, IAS**
Former Director General, National Mission for Clean Ganga

Recognising the transformative role of placemaking, the Smart Cities Mission has brought this informative and thoughtful compendium on 'Vibrant Public Spaces', establishing their role in waterbody and ecological rejuvenation & developing resilient and inclusive urban environments. Revitalised water edges help restore native biodiversity, improve water quality, and mitigate floods while enhancing people's quality of life. Economically, they create value for ecosystem services like micro-cooling, livelihood generation, and tourism. Public Spaces can help build cities' identity and re-connect people with nature and heritage. To make it successful, the inclusion of all local stakeholders is important at every stage for increasing ownership and developing organic O&M practices for these sites. Secondly, conserving the riparian buffer or providing for soft-scapes is vital as a climate adaptation strategy. Imphal Riverfront conserving the ecologically sensitive zones with minimum interventions of walking and cycle paths is a good example. This report, I am sure, would help cities to develop appropriate, green and vibrant public spaces in the heart of their cities.

**Sameh Wahba**
Global Director, Urban, Disaster Risk Management, Resilience, and Land, World Bank Group

Public spaces cover about a third of a city's land globally, yet many cities fail to realize their full potential, often overlooking, underutilizing, or mismanaging these valuable assets. The World Bank's publication on 'The Hidden Wealth of Cities' sought to uncover the immense value that well-planned public spaces generate for communities, neighbourhoods, and cities while also exploring a diverse array of innovative strategies for designing, financing, and managing these essential urban assets.

I am delighted to see this compendium emerge at such a crucial moment, showcasing how Indian cities are increasingly recognizing the transformative power of public spaces as drivers of urban renewal, vibrancy, and resilience. The effort aligns with the Government of India's recent impetus on the urban livability agenda, reinforced by the Union Budget 2025 announcement of a dedicated Urban Challenge Fund, emphasizing innovations in 'Cities as Growth Hubs', 'Creative Redevelopment of Cities', and 'Water Supply and Sanitation.' I hope this compendium sparks a systematic transformation of public spaces in India, leading to the creation of inclusive, climate-resilient environments that foster community connections, strengthen ecological functions, and drive economic opportunity—ultimately shaping cities where all citizens can thrive.

**Mio Oka**
Country Director, ADB India

Since its inception, ADB has strongly supported India's Smart Cities Mission, which aligns well with ADB's Strategy 2030 focus on integrated solutions to help build livable cities. This compendium serves as a valuable guide for urban planners, policymakers, and stakeholders dedicated to developing resilient, inclusive, and livable cities. ADB remains committed to supporting the ongoing transformation and progressive evolution of Indian cities.

**Dr. Shalini Sinha**
Dean, Faculty of Planning, CEPT University

The Smart Cities Mission's compendium on waterfronts and parkscapes is a timely and valuable resource, showcasing innovative projects across India. These initiatives also demonstrate how blue-green infrastructure can seamlessly integrate with urban mobility networks and urban development. Beyond their aesthetic and recreational value, these spaces will contribute to mitigating climate risks, enhancing biodiversity, and improving public health. These have also created opportunities for community engagement, fostering a sense of identity and belonging in rapidly urbanising areas. By capturing best practices, this compendium serves as an inspiration for planners, policymakers, and designers to build cities that are not only functional but also vibrant and resilient.

**Esben Neander Kristensen**
Team Director & Partner, Gehl

'Vibrant Public Spaces' showcases how India's diverse urban landscapes hold immense potential for creating a new kind of human-centred public spaces that prioritize inclusivity and community interaction. In our work at Gehl with private and public clients across India, we see first-hand how the current wave of urban development will have an immense impact on the liveability and prosperity of its cities - if the right design drivers take the lead. The waterfronts and parks highlighted in 'Vibrant Public Spaces' show that a sustainable and smart focus on accessibility, safety, and cultural relevance can foster social cohesion and enhance health and well-being.

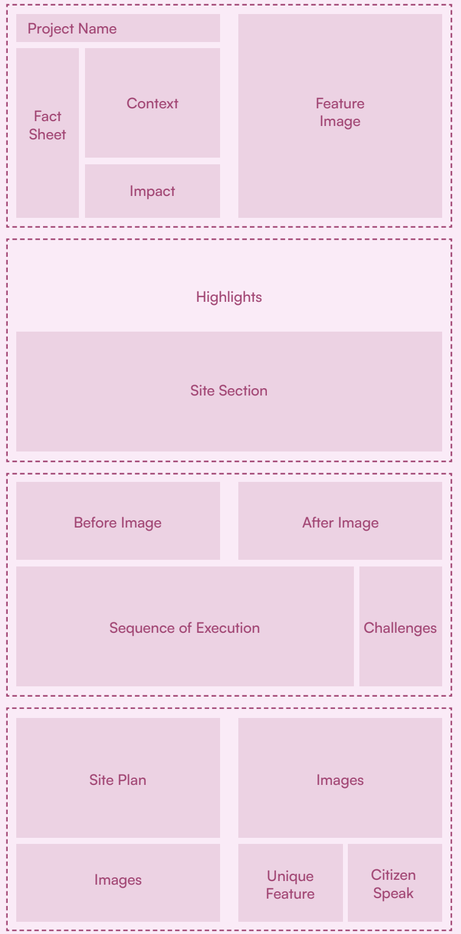

Periyakulum Lake, Coimbatore



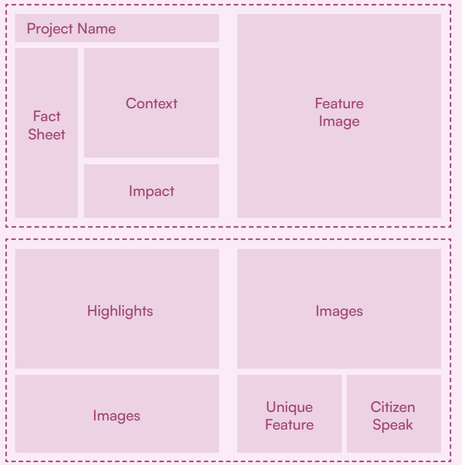
# How to Read **the Chapters**

*Note: All costs mentioned in USD in the chapters, used the conversion rate of 1 USD = INR 87

## 30 Deep Dives




## 26 Glimpses




| SECTION | DEEP DIVES | GLIMPSES |
|---|---|---|
| Factsheet | ● | ● |
| Context & Impact | ● | ● |
| Feature Image | ● | ● |
| Highlights | ● | ● |
| Site Section | ● | |
| Before & After Images | ● | |
| Sequence of Execution | ● | |
| Challenges & Resolutions | ● | |
| Site Plan | ● | |
| Unique Feature | ● | ● |
| Citizen Speak | ● | ● |
| Images | ● | ● |

Cubbon Park, Bengaluru

# About the Compendium

The compendium serves as a repository of over 50 transformative projects implemented under India's Smart Cities Mission. This collection showcases a diverse range of public realm enhancements aimed at redefining the quality of life in Indian cities. The compendium categorizes these projects into two broad sections: Waterscapes and Parkscapes.

The Waterscapes section highlights the rejuvenation and development of waterfronts, including ponds, lakes, rivers, and sea coasts. The Parkscapes section showcases public parks, sports facilities, biodiversity conservation areas, under-flyover or underpass developments, and market plazas. Transformations covered here capture project overview, execution details, unique features, challenges, and resolutions.

The primary objective of this compendium is to document a breadth of projects and facilitate knowledge sharing to inspire future public realm developments. By capturing successes and limitations, it offers valuable insights for policymakers, implementors, advocacy organisations, investors, and supporting professionals to support the creation of future cities that are more liveable, are environmentally sustainable, and economically prosperous.

The compendium includes

## 56 Vibrant Public Space Projects

**30 Waterscape Projects**
18 Deep Dives I 12 Glimpses

**26 Parkscape Projects**
12 Deep Dives I 14 Glimpses

This compendium is part of a series of three knowledge products on public spaces developed under the Smart Cities Mission and can be downloaded on the mission website: https://smartcities.gov.in/documents





## Transformed Public Spaces

Meera and Ashok in their late 20s juggled hectic jobs and a family of four in a chaotic city, and faced frequent health issues.

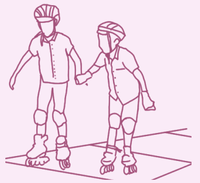
The family now prioritises their physical well being, attending outdoor yoga while the kids play at the new riverfront park.

With unsafe and exhausting streets, Rajesh and Suman, in their 70s, seldom left their apartment premises.

The elderly couple rediscover the joy of leisurely strolls, joining their neighbourhood social group in their new neighbourhood park.

Harpreet, a teenage sports enthusiast, turned to digital screens, discouraged by the lack of playgrounds nearby.

Harpreet hones skateboarding skills at the new sport centre. She learns tricks online and practices them with her newfound friends.



Visitors preferring air-conditioned malls during summers left Kumar's tea stall outside the central park with dwindling customers.

The revitalised park and streetscape invites a lively evening 'adda' at Kumar's tea corner, encouraging him to open two new stalls.

Isha's late evening walks back home from her tuitions through the dimly lit stretch under the flyover worried her parents as it had little foot traffic.

Rejuvenated with food stalls, amphitheatre and Wifi enabled workspaces, Isha often stops along this stretch to grab a snack and enjoy the karaoke gigs.

# DOs

## Lessons from what the projects did well

### 01

**Go beyond beautification and respond to people's unique needs; it will win the hearts of citizens**

Projects like sports facilities under Jagtap Dairy Flyover for neighbourhood youth in Pimpri Chinchwad, basement parking under Beniyabah Park in Varanasi to relieve congestion, designated kunds in lakes for chatt puja, or wheelchair-accessible beach in Toothakodi - have all gone beyond beautification and improved functionality for specific user needs. Practical, need-based interventions can not only solve local problems but also build trust and satisfaction among citizens. Further, essential features like restrooms, seating, lighting, and waste disposal are non-negotiable for usability and inclusivity. Overlooking these basics can render even aesthetically pleasing spaces underutilised and ineffective.

### 02

**Signature public spaces attract tourists, boosting the city's economy**

City-level public spaces that build on unique socio-ecological culture and heritage can attract visitors or make them stay longer in the city, increasing tourist spending and boosting the local economy. The cluster of public space projects in Srinagar, like Polo View Street, Lal Chowk, Jhelum Riverfront, and restored heritage footbridges have extended tourist stay in the city. Similarly, Rudrasagar as part of Mahakal Mahalok temple rejuvenation, has created a few thousand livelihoods and expanded the local hospitality and crafts industries; while Chappan Dukaan revitalisation has increased the footfall and shop incomes by over two folds.

### 03

**Load O&M for a minimum 3-5 years within the contract of the construction agency/contractor, possibly with revenue sharing**

Bundling O&M within construction contracts can improve cost predictability, ensure sustained quality, align maintenance with construction goals, and reduce financial burdens on public authorities. As in Atal Sarovar's 15-year revenue-sharing model, contractors can be incentivised to innovate and maintain public spaces sustainably. However, to get this right, ensure the contractor has O&M expertise or partner with specialists to set clear performance metrics and to allocate revenue for maintenance. But beware that revenue-sharing agreements push contractors to prioritize profit over public interest, potentially limiting access or over-commercializing the space.

### 04

**Nature-based solutions and materials are more sustainable and cost-effective in the long-term**

High-carbon materials like concrete and steel are often seen as straightforward choices, but they can significantly increase both construction and long-term maintenance costs. In contrast, nature based solutions such as in the 8-lakes projects of Coimbatore, Telibandha Talab in Jabalpur, and Adalatganj Lake in Patna, offer more sustainable and cost-effective alternatives by using bunds and native vegetation to filter pollutants naturally. Ecological alternatives, such as wetlands for sewage treatment, can also lower operational costs and environmental impact compared to energy-intensive STPs.

### 05

**Keep your eye on preserving and expanding biodiversity**

A key impact for water and parkscapes should be increasing the flora and fauna in the area. Several projects have created man-made bird islands in the waterbodies to attract and nest migratory birds and covered the stone pitching along the bunds with local grass and flowering species to provide habitat for small animals and pollinators.



# DON'Ts

## Lessons from what the projects could do better

### 01

**Good designs are a first step, but don't take your eye off during execution**

Projects often fall short of their potential due to poor workmanship and construction quality, non-compliance with design standards, unnecessary cost escalations, and fraudulent practices. These result in inferior material selection, poor paving, water stagnation/flooding, improper curb cuts, and installations of seating, play equipment, lighting etc. Ensuring regular site inspections, clear accountability, and active engagement with local stakeholders can significantly reduce these errors and lead to better public spaces.

### 02

**Increased footfall is great, but don't forget to mitigate traffic and congestion impacts on surrounding residents**

Successful projects with a sixfold increase in daily footfall like Rudrasagar within Mahakal Mahalok Temple Precinct, can drive residents away from the project areas, leaving them aggrieved by increased traffic, travel time, noise pollution, and competing for parking spaces up to 2-3 km from the project site. Depending on the scale, public transport, traffic re-routing, pedestrian safety, and parking plans for up to 2-5 km radius from project site should be part of the project scope.

### 03

**Don't let newly completed projects face early decay due to long gaps between hiring of O&M agencies**

The process of reassigning O&M agencies for projects after the conclusion of contract period is often time-consuming. The time loss in between can lead to neglect and lack of maintenance of these newly rejuvenated spaces. It is advisable to pre-empt the time taken for procurement and start early. In addition, introducing community engagement as seen in the Cubbon Park in Bangalore, that includes plantation drives and awareness programmes initiated by city residents, reduces the dependency on external agencies, especially in interim periods.

### 04

**Revenue generation is key for project viability, but don't make an amusement park or musical laser fountain everywhere**

While generating revenue is vital for sustaining public spaces, it is important to strike a balance between commercial and ecologically sensitive interventions. Over-reliance on commercial attractions such as amusement parks, water sports, musical laser shows, or food courts can disturb ecological habitats and biodiversity. Projects like the Chandigarh Bird Park, Panaji Mangrove Boardwalk, and Kankara Creek Biodiversity Park offer an alternative vision for public spaces. These spaces provide safe sanctuaries for birds, aquatic species, small animals, and more, while also fostering ecological awareness and education among citizens. Additionally, they offer naturalized spaces for both passive and active recreation.

### 05

**Don't overlook community education and stewardship in maintaining public spaces**

Public spaces can quickly fall into neglect if users are not aware of their value or role in upkeep. Without community education and involvement, issues like littering, vandalism, or misuse can arise. Awareness campaigns, guided tours, and local stewardship programs can encourage responsible use and long-term care, ensuring these spaces remain vibrant and well maintained.

# Comparative Summary of Waterscapes (1/2)

| BASIC INFORMATION | | | | | | | | | | ISSUES | | | | | | | INTERVENTIONS | | | | | | INTERVENTIONS | | | | | | | IMPACTS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sr No | PROJECT NAME | CITY | SCALE (Ha) | CAPEX (INR Cr) | NATURAL | ARTIFICIAL | PERENNIAL | SEASONAL | POLLUTION-LED REDUCED CAPACITY & WATER QUALITY | ENCROACHMENT-LED REDUCED CAPACITY & WATER QUALITY | FREQUENT FLOODING | SEASONAL DRYING | INVASIVE VEGETATION & SPECIES | BIODIVERSITY & HABITAT LOSS | POOR ACCESS & AMENITIES | SOLID WASTE MANAGEMENT | SEWAGE & STORMWATER NETWORK & TREATMENT PLANTS | DE-WEEDING & DESILTING | EDGE TREATMENT - SOFTSCAPE | EDGE TREATMENT - HARDSCAPE | WATER QUALITY IMPROVEMENT | PLANTATION & HABITAT CREATION | WALKING, RUNNING, & CYCLING | OTHER ACTIVE & PASSIVE RECREATION | REVENUE GENERATING ASSETS / SERVICES | TECHNOLOGY ENABLED MONITORING & MANAGEMENT | O&M BY GOVT | O&M BY PRIVATE AGENCY / THIRD PARTY | L* : INCREASED VISITOR FOOTFALL | L* : IMPROVED PUBLIC HEALTH & WELLBEING | L* : IMPROVED SOCIAL COHESION | E* : INCREASED INCOMES & JOBS | E* : INCREASED MUNICIPAL REVENUE | E* : COST SAVINGS USING GREEN TECHNOLOGIES | S* : REDUCED CARBON FOOTPRINT | S* : EXPANDED GREEN COVER & SPECIES | S* : IMPROVED QUALITY OF AIR / WATER / SOIL |
| **LAKES/PONDS [18]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Periyakulam Lake | Coimbatore | 136 | 102 | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | | |
| 2 | People's Promenade | Coimbatore | 1.6 | 22 | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | | |
| 3 | Rudrasagar Lake | Ujjain | 47 | 15 | | | | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 4 | Amanikere Lake | Tumakuru | 204 | 60 | | | | | ■ | ■ | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 5 | Atal Sarovar | Rajkot | 75 | 136 | | | | | ■ | | | ■ | | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | |
| 6 | Vinayak Sagar | Tirupati | 20 | 58 | | | | | ■ | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 7 | Gulauaa Taal | Jabalpur | 4 | 2.2 | | | | | ■ | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 8 | Kanbargi Lake | Belagavi | 3 | 4.74 | ■ | | | | ■ | | ■ | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 9 | Adalatganj Lake | Patna | 1 | 13.41 | | ■ | | | ■ | ■ | | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 10 | Ranir Pukur | Agartala | 0.56 | 1.4 | ■ | | ■ | | ■ | ■ | | | ■ | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 11 | Anasagar Lake | Ajmer | 20.36 | 56 | | ■ | | | ■ | ■ | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 12 | Budha Talab | Raipur | 30 | 28 | ■ | | | | ■ | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 13 | Telibandha Talab | Raipur | 11.75 | 2.6 | | ■ | | | ■ | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | | | | | | | | | | | |
| 14 | DAV Pond | Rourkela | 7.3 | 14 | | ■ | | | ■ | ■ | | | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | |
| 15 | Kavoor Lake | Mangaluru | 3 | 8 | ■ | | ■ | ■ | ■ | ■ | | | | ■ | ■ | | ■ | | ■ | | ■ | ■ | ■ | ■ | | ■ | ■ | | ■ | | | | | | | | | | |

***Legend**

L : Livability
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# Comparative Summary of Waterscapes (2/2)

| BASIC INFORMATION | | | | | | | | | | | ISSUES | | | | | | | INTERVENTIONS | | | | | | | INTERVENTIONS | | | | | | | | IMPACTS | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sr No | PROJECT NAME | CITY | SCALE (Ha) | CAPEX (INR Cr) | NATURAL | ARTIFICIAL | PERENNIAL | SEASONAL | POLLUTION-LED REDUCED CAPACITY & WATER QUALITY | ENCROACHMENT-LED REDUCED CAPACITY & WATER QUALITY | FREQUENT FLOODING | SEASONAL DRYING | INVASIVE VEGETATION & SPECIES | BIODIVERSITY & HABITAT LOSS | POOR ACCESS & AMENITIES | SOLID WASTE MANAGEMENT | SEWAGE & STORMWATER NETWORK & TREATMENT PLANTS | DE-WEEDING & DESILTING | EDGE TREATMENT - SOFTSCAPE | EDGE TREATMENT - HARDSCAPE | WATER QUALITY IMPROVEMENT | PLANTATION & HABITAT CREATION | WALKING, RUNNING, & CYCLING | OTHER ACTIVE & PASSIVE RECREATION | REVENUE GENERATING ASSETS / SERVICES | TECHNOLOGY ENABLED MONITORING & MANAGEMENT | O&M BY GOVT | O&M BY PRIVATE AGENCY / THIRD PARTY | L* : INCREASED VISITOR FOOTFALL | L* : IMPROVED PUBLIC HEALTH & WELLBEING | L* : IMPROVED SOCIAL COHESION | E* : INCREASED INCOMES & JOBS | E* : INCREASED MUNICIPAL REVENUE | E* : COST SAVINGS USING GREEN TECHNOLOGIES | S* : REDUCED CARBON FOOTPRINT | S* : EXPANDED GREEN COVER & SPECIES | S* : IMPROVED QUALITY OF AIR / WATER / SOIL |
| 16 | Dimsagar | Agartala | 0.9 | 1.75 | | | | | ■ | | ■ | | ■ | | ■ | ■ | | ■ | ■ | ■ | | ■ | ■ | | | ■ | | ■ | | | | | | | | | | ■ | ■ |
| 17 | Masunda Lake | Thane | 0.48 | 11.2 | | | | | ■ | ■ | | | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | | | | | | |
| 18 | Kalyani at Hondada Circle | Davangere | 0.1 | 2.91 | | ■ | | ■ | ■ | | | ■ | ■ | | ■ | ■ | ■ | ■ | | | ■ | ■ | | ■ | ■ | | ■ | ■ | | | | | | | | | | ■ | ■ |
| **RIVERS [9]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Namo Ghat | Varanasi | 8 | 90 | | | | | | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | | | |
| 20 | Tunga Riverfront | Shivamogga | 6.3 | 80.79 | | | | | ■ | ■ | | | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | ■ | ■ |
| 21 | Canal Corridor | Surat | 6 | 54.4 | | | | | ■ | ■ | | ■ | | | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | | | | | | | | | ■ | |
| 22 | Paldi Sports Complex | Ahmedabad | 6.3 | 24.3 | | | | | ■ | | | ■ | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | | ■ | ■ | ■ | | ■ | | | | | | | | | | | |
| 23 | Arpa Riverfront | Bilaspur | 1.5 | 7.7 | | | | | ■ | | | | | ■ | | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | | | | | |
| 24 | Jhelum Riverfront | Srinagar | 1.1 | 59 | | | | | ■ | ■ | ■ | | | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | | ■ | | | | | | | | | |
| 25 | Imphal Riverfront | Imphal | 1 | 16.96 | | | | | ■ | | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | | | | | |
| 26 | Saraswati & Kahn Riverfront | Indore | 6 | 52 | | | | | ■ | ■ | ■ | | | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | | | ■ | ■ | | | | | | | | | | |
| 27 | Vaigai Riverfront | Madurai | 2.26 | 84 | | | | | ■ | | ■ | | | ■ | ■ | ■ | | | | | ■ | | ■ | ■ | ■ | | ■ | | | | | | | | | | | | |
| **SEAS [3]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Pearl Beachfront | Thoothukudi | 2 | 7.69 | | | | | | | | | | | ■ | ■ | | | ■ | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | |
| 29 | Marine Drive | Kochi | 2.38 | 9 | | | | | | | ■ | | | | ■ | ■ | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | | | | | |
| 30 | Mangrove Boardwalk | Panaji | 0.01 | 2.87 | | | | | ■ | ■ | | | | ■ | ■ | ■ | | | ■ | | | ■ | ■ | ■ | | | ■ | | | | | | | | | | | | |

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# Comparative Summary of Parkscapes (1/2)

| BASIC INFORMATION | | | | | | | ISSUES | | | | | | | | | INTERVENTIONS | | | | | | | | | | IMPACT | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sr No | PROJECT NAME | CITY | SCALE (Ha) | CAPEX (INR Cr) | NEW CONSTRUCTION | UPGRADATION | TRAFFIC CONGESTION & PEDESTRIAN SAFETY | LACK OF PUBLIC SPACE IN VICINITY | LOW VISITOR FOOTFALL | WASTE DUMPING & INVASIVE VEGETATION | DILAPIDATED INFRASTRUCTURE & SERVICES | UNDERUTILIZED SPACE | AIR QUALITY, HEAT, FLOODING RISKS & NATURAL DISASTERS | BIODIVERSITY & HABITAT LOSS | VENDING PERMIT & EVICTION THREAT | VEHICULAR CIRCULATION & PARKING | WALKING, RUNNING, & CYCLING | OTHER ACTIVE & PASSIVE RECREATION | WATER BODY REJUVENATION | PLANTATION & HABITAT CREATION | DEDICATED VENDING ZONE | REVENUE GENERATING ASSETS / SERVICE | TECHNOLOGY ENABLED MONITORING & MANAGEMENT | O&M BY GOVT | O&M BY PRIVATE AGENCY / THIRD PARTY | L* : INCREASED VISITOR FOOTFALL | L* : IMPROVED PUBLIC HEALTH & WELLBEING | L* : IMPROVED SOCIAL COHESION | E* : INCREASED INCOMES & JOBS | E* : INCREASED MUNICIPAL REVENUE | E* : COST SAVINGS USING GREEN TECHNOLOGIES | S* : REDUCED CARBON FOOTPRINT | S* : EXPANDED GREEN COVER & SPECIES | S* : IMPROVED QUALITY OF AIR / WATER / SOIL |
| **PARKS [15]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Kankara Creek Biodiversity Park | Surat | 60 | 145 | | | | ■ | | ■ | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | | ■ | ■ | | ■ | | | | | | | | | |
| 2 | Benia Bagh Park | Varanasi | 7 | 90 | | | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | |
| 3 | Neem Banani Park | NTK | 1.4 | 5.5 | | | | | ■ | | ■ | ■ | ■ | | | | ■ | ■ | ■ | ■ | ■ | | ■ | ■ | | | | | | | | | |
| 4 | Bird Park | Chandigarh | 2.6 | 5 | | | | | | | | | | | | | ■ | ■ | | ■ | | ■ | ■ | | ■ | | | | | | | | |
| 5 | Nalanda Parisar Reading Zone | Raipur | 2.4 | 18 | | | | ■ | | | | | | | | | ■ | ■ | ■ | ■ | | ■ | ■ | | ■ | | | | | | | | |
| 6 | Sensory Park | Kohima | 0.035 | 0.3 | | | ■ | ■ | | ■ | | ■ | ■ | | | | ■ | ■ | | ■ | | ■ | | | ■ | | | | | | | | |
| 7 | Infinity Park | Chennai | 0.15 | 1.37 | | | | ■ | | | | | | | | | ■ | ■ | | ■ | | | | | | | | | | | | | |
| 8 | All Abilities Park | Vishakhapatnam | 0.2 | 3.5 | | | | ■ | | | | | | | | | ■ | ■ | | ■ | | | | | | | | | | | | | |
| 9 | Futsal Ground | NTK | 0.6 | 2.3 | | | | ■ | ■ | ■ | | ■ | | | ■ | | ■ | ■ | | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | |
| 10 | Mini Sports Centre | Jabalpur | 0.5 | 5 | | | | ■ | ■ | | | ■ | | | | | ■ | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | | |
| 11 | Tiranga Urban Park | Chandigarh | 3.3 | 11.5 | | | | | ■ | | ■ | ■ | | | | | ■ | ■ | | ■ | | | ■ | ■ | ■ | | | | | | | | |
| 12 | Cubbon Park | Bengaluru | 79 | 44 | | | | | ■ | ■ | ■ | | | | | | ■ | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | | | | | | | | |
| 13 | Aizawl Lungdawh | Aizawl | 0.28 | 5 | | | | ■ | | | | ■ | ■ | | | ■ | ■ | ■ | | | ■ | ■ | ■ | ■ | | | | | | | | | | |
| 14 | Prakasham And Padmavati Park | Tirupati | 4.7 | 7 | | | | | ■ | | ■ | ■ | | | | | ■ | ■ | | ■ | | | ■ | ■ | | ■ | | | | | | | | |
| 15 | Anna Park | Salem | 0.3 | 13 | | | | | ■ | | ■ | ■ | | | | ■ | ■ | ■ | | | | | | ■ | | ■ | | | | | | | | |

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# Comparative Summary of Parkscapes (2/2)

| BASIC INFORMATION | | | | | | | ISSUES | | | | | | | | | INTERVENTIONS | | | | | | | | | | IMPACT | | | | | | | | | |
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| **PLAZAS [7]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Sungam Under Flyover | Coimbatore | 1.82 | 21.84 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Jagtap Flyover | PCMC | 0.2 | 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Lal Chowk | Srinagar | 0.3 | 15 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Old Habba Kadal | Srinagar | 0.06 | 1.9 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Rose Garden Underpass | Chandigarh | 0.8 | 9.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Banyan Tree Avenue | Tumakuru | 0.3 | 0.62 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Smart Plaza | NTK | 0.4 | 0.23 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **VENDING BAZAARS [4]** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Lahartara Chowka Ghat | Varanasi | 8.2 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Chappan Dukan | Indore | 0.4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Mahila Market | Belgavi | 0.3 | 1.32 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Masala Chowk Urban Haat | Ajmer | 0.08 | 1.4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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# Waterscape Projects

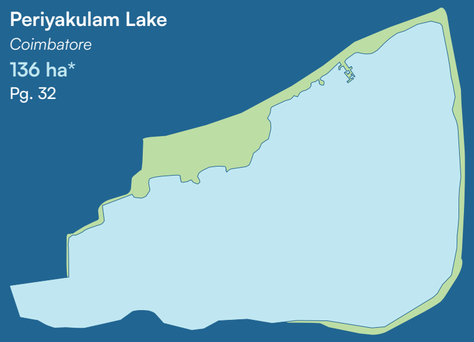
Waterscape projects under the Smart Cities Mission demonstrate a focused effort to clean water bodies and revitalize waterfronts, optimising their use for various purposes. These initiatives aimed to balance environmental conservation, recreational opportunities, and economic development, enhancing biodiversity while catering to local needs for active, healthy living.

Typically, these projects involved improving water quality and aquatic life and developing promenades, parks, cultural spaces, and commercial zones along riverbanks, lakeshores, or coastal areas. By emphasizing sustainable practices, many projects integrated water management with nature-based solutions to reduce costs, minimize the use of high-carbon materials, and build resilience against flooding, water stress, and heat island effects. Efforts in creating habitats for migratory birds and aquatic species increased the presence of flora and fauna. Technological innovations, such as smart lighting, Wi-Fi connectivity, and sensor-based monitoring systems, further enhanced user safety and improved the efficiency of managing these assets.

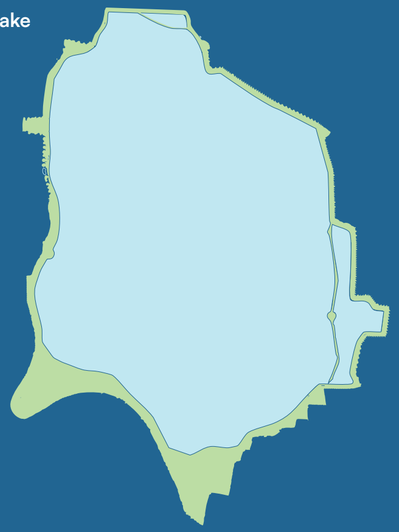
**Typologies of projects include:**

Lakes/Ponds | Rivers | Seas

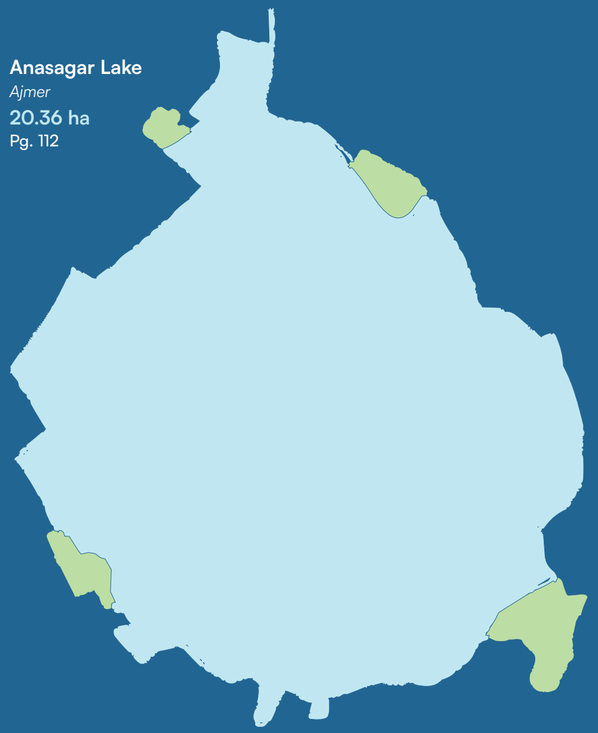
**Periyakulam Lake**
*Coimbatore*
136 ha*
Pg. 32



**Amanikere Lake**
*Tumakuru*
204 ha*
Pg. 56



**Anasagar Lake**
*Ajmer*
20.36 ha
Pg. 112



**Adalatganj Lake**
*Patna*
1 ha*
Pg. 96

**Dimsagar**
*Agartala*
0.9 ha*
Pg. 132

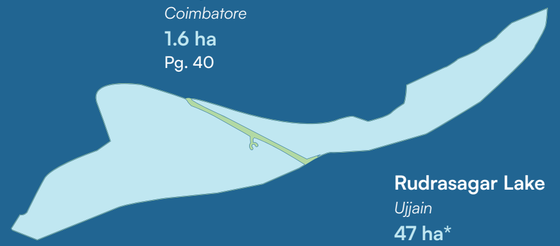
**Kalyani**
*Davangere*
0.1 ha*
Pg. 140

**Ranir Pukur**
*Agartala*
0.56 ha*
Pg. 104

**Budha Talab**
*Raipur*
30 ha*
Pg. 116

**Vinayak Sagar**
*Tirupati*
20 ha*
Pg. 72

**People's Promenade**
*Coimbatore*
1.6 ha
Pg. 40



**Rudrasagar Lake**
*Ujjain*
47 ha*
Pg. 48

*Typology*

# LAKES/PONDS

*Amid the city's hurried beat,*
*A pond reflects where lives retreat.*

*Stilled waters cradle dreams anew,*
*In crowded lanes, a tranquil view.*

*Urban hearts in their embrace,*
*Find nature's calm, a sacred space.*

Scale of Development
Context

** Scale of development includes water body*

**Telibandha Talab**
*Raipur*
11.75 ha*
Pg. 120

**Atal Sarovar**
*Rajkot*
75 ha*
Pg. 64

**Masunda Lake**
*Thane*
0.48 ha
Pg. 136

**DAV Pond**
*Rourkela*
7.3 ha*
Pg. 124

**Kavoor Lake**
*Mangaluru*
3 ha*
Pg. 128

**Kanbargi Lake**
*Belagavi*
3 ha*
Pg. 88

**Gulauaa Taal**
*Jabalpur*
4 ha*
Pg. 80

The project area and context profiles are for representational puposes and may not be to scale

# 05 Atal Sarovar

Rajkot, Gujarat

### Typology
Lake/Pond River Sea

### Scale of Development
**35 Ha (lake)**
**Total 75 Ha**

### Year of Completion
**2024**

### Cost
**CapEX**
INR 136 Cr | USD 15.63 Mil

**OpEX**
15 year O&M and revenue sharing model

**Revenue**
No Information

### Stakeholders
**Nodal Authority**
Rajkot Smart City Ltd. (RSCL)

**Funders**
SCM-MoHUA & State Govt (50:50)

**Implementing Partners**
Rajkot Municipal Corporation (RMC)
Gujarat Tourism

**Design/Planning**
INI Design Studio

**Contractor**
Cube Construction Engineering Ltd.

**Operation & Maintenance**
Cube Construction Engineering Ltd.

DEEP DIVE

## Vision

To make Atal Sarovar in Rajkot as a year-round water-secure ecosystem through circular water management, while creating a large lakefront for diverse active and passive recreational activities.

## Overview

**Context :** Rajkot is a thriving industrial city in Gujarat, driven by engineering, auto parts, textiles, and an emerging IT sector. To accommodate rapid urbanisation, the city has implemented various greenfield developments through town planning schemes. As part of the Smart Cities Mission, the city has undertaken a 376-hectare greenfield, mixed-use development in the northwest part of Rajkot, integrating sustainable infrastructure, affordable housing, and public spaces. Atal Sarovar, a lake within this development, serves as a key ecological and recreational asset.

**Issues :** However, Rajkot's semi-arid climate and seasonal rainfall variability have made water scarcity a persistent challenge, exacerbated by over-extraction and insufficient recharge. Atal Sarovar had suffered from neglect, with declining water levels, siltation, and pollution, reducing its utility and ecological value. Once a critical resource for surrounding communities, it had become degraded, underscoring the need for restoration.

**Interventions :** Rajkot Smart City revitalised Atal Sarovar to raise groundwater levels and provide a public space anchor for the greenfield development. The project was designed to capture stormwater runoff from the 376 ha catchment area during monsoons, promoting rainwater harvesting and groundwater recharge. In summers, it was replenished with tertiary-treated water, ensuring year-round water availability through sustainable reuse practices. The lakefront included walking and cycling tracks, a toy train, a ferris wheel, and boating jetties for recreation. It also featured a musical fountain, an amphitheatre, and community spaces like a food court, botanical garden, and flower garden for social and cultural gatherings. An elevated walkway connected to a bird-park island, promoting biodiversity and ecological learning. By integrating water management with public spaces, Atal Sarovar exemplified sustainable urban development, enriching both the environment and the quality of life for residents.

## Impact

### Liveability
- Visitor footfall of 3500 per day on weekdays and 6000 on weekends
- Increased opportunities to spend time outdoors

### Economic-ability
- Sustained project finances through revenue generated from entry tickets, and other chargeable activities
- Generated economic opportunities for local businesses and local authorities

### Sustainability
- Promoted rainwater harvesting and water reuse
- Raised groundwater level



# Project Highlights

**Atal Sarovar, Rajkot**

01 Lake bunds with stone pitching, widened and strengthened to prevent soil erosion

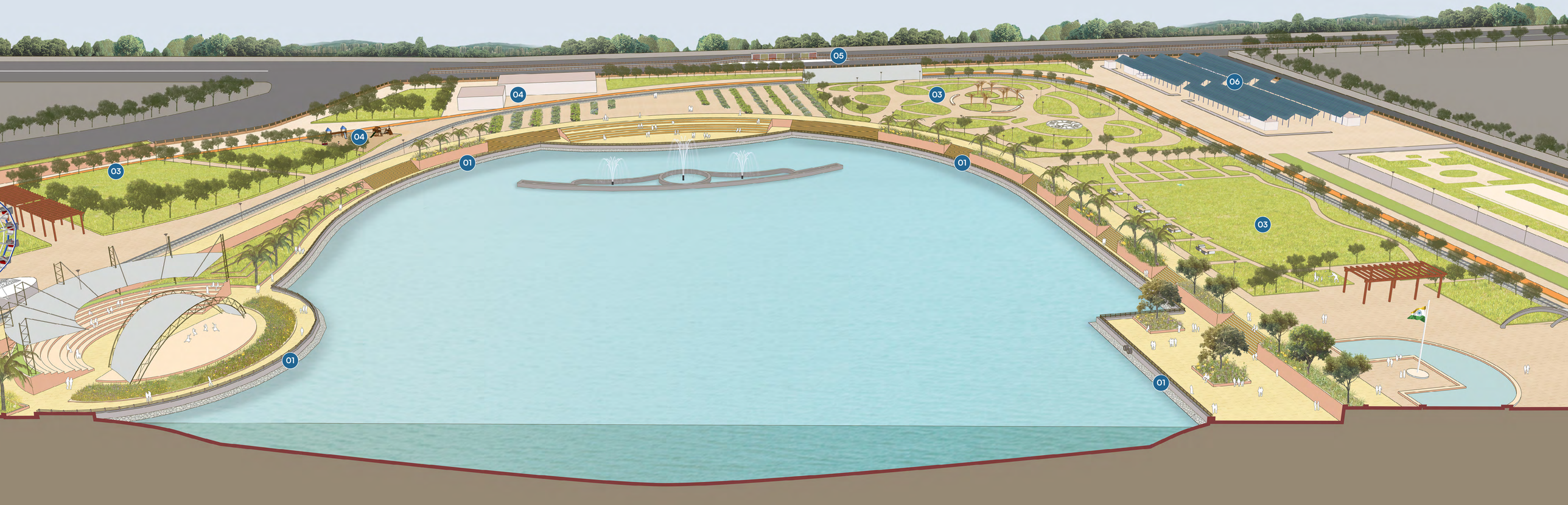
02 Aquatic plantations around the lake to improve water quality and support local biodiversity by feeding on organic matter *(not in illustration)*

03 Grass covers, ornamental gardens, labyrinth gardens, flower park, and tree covers, to reduce heat island effect, enable groundwater recharge, promote biodiversity, and connection to nature

04 Ferris wheel, amphitheatre, food court, toy train track, childrens' play area, boating jetty for recreation

05 BRTS bus stop for access through bus-based public transport

06 Solar panels and shaded Parking



Before

After

## Sequence of
# Execution

**Atal Sarovar, Rajkot**

### 01 Approvals and Site Preparation

- Secured land acquisition approvals under Town Planning Scheme No. 32 with stakeholder enagagement for land acquisition, and finalised technical designs
- Conducted geotechnical surveys, graded the site, and excavated to increase capacity
- Diverted sewage lines and prevented untreated wastewater from entering the lake

### 02 Water Management

- Laid stormwater drains and underground pipelines for rainwater harvesting
- Installed a pumping system for tertiary-treated water reuse during dry seasons
- Implemented aeration fountains and microbial cultures to maintain water quality

### 03 Edge Treatment and Civil Works

- Reinforced bunds with stone pitching and geotextiles to prevent erosion
- Constructed boundary walls, permeable pathways, and secured embankments
- Built hardscape elements like cobblestone pathways and plazas to enhance accessibility

### 04 Bio-Remediation and Ecological Restoration

- Introduced aquatic plants and native vegetation to improve water quality and support biodiversity
- Established a bird park island with nesting areas for migratory and local birds
- Added Indian carps and microbial cultures to control organic waste and prevent

### 05 Public Amenities and Recreation

- Developed walking and cycling tracks, toy train tracks, and boating jetties
- Installed a Ferris wheel, amphitheatre, and food court for recreational use
- Provided gazebos, shaded seating, and solar-powered parking facilities

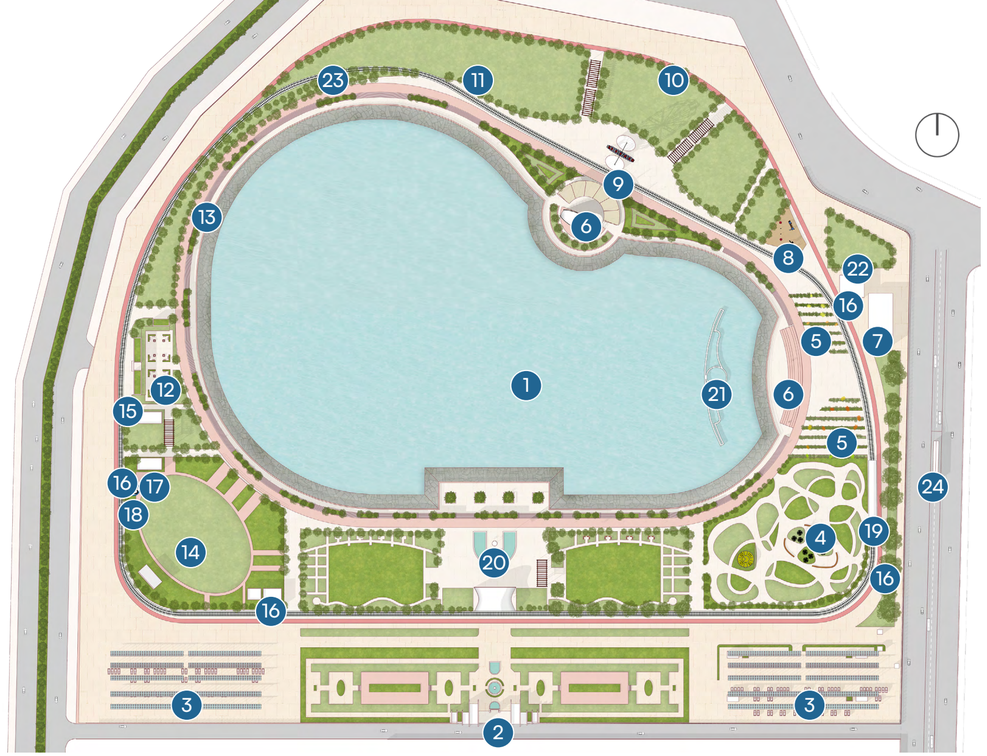
### 06 Technology and Monitoring

- Installed CCTVs, sensors for water level, quality and pressure monitoring, other edge devices, and public announcement systems connected to the Rajkot Integrated Command and Control Center
- Used solar panels for energy generation and automated water level monitoring
- Set up visitor friendly facilities with integrated complaint redressal systems

## Challenges & Resolutions

- **Fluctuating rainfall and high evaporation rates affecting water levels in lake**

  Implemented a stormwater management system with wide, graded channels and underground drains to efficiently direct rainwater from the 376 ha catchment to the lake. Enhanced groundwater recharge and storage with detention basins and rainwater harvesting structures. Ensured year-round water availability with a tertiary-treated water pipeline, sustaining the lake.




# Site Plan

**Atal Sarovar, Rajkot**

### Legend

1. Atal Lake
2. Entrance Plaza wih Admin Building
3. Parking with Solar Roofs
4. Botanical Garden
5. Flower Bed
6. Open Air Theatre
7. Covered Food Court
8. Children's Park
9. Ferris Wheel
10. Shops
11. Senior Citizen Park
12. Open Food Court
13. Toy Rail Track and Station
14. Party Plot
15. Cycle Stand
16. Toilet
17. Kitchen
18. Room for Events
19. Toy Train Tunnel
20. Flag Post
21. Fountain Show
22. Traffic Park
23. Open Gym
24. BRTS Stand

## Unique Feature

During the monsoons, Atal Sarovar is filled with stormwater runoff from the surrounding area of 376 ha, while in the summers, it is replenished with treated water from a tertiary treatment plant. The project promotes rainwater harvesting as well as sustainable reuse - a circular approach.

## Citizen Speak

*"They have some of the best rides, parks, performances, and a food court - a place where we can spend the whole day exploring with our family. We are also thinking of renting the party plot here for our parents' 50th wedding anniversary celebrations."*

# Glossary

**for colloquial or Indian language terms only**

| | |
|---|---|
| **Adda** | Informal hangout zone |
| **Akhada** | Traditional training ground for wrestling and martial arts |
| **Bazaar** | Market |
| **Dukan** | Small or large shop selling goods or services, commonly found in markets and streets |
| **Dhobi** | Washermen or washerwomen |
| **Ghanta Ghar** | Clock tower, usually a central landmark in cities, often surrounded by marketplaces |
| **Ghat** | Series of steps leading to a water body, commonly used for bathing, rituals, and gatherings |
| **Haat** | Traditional open-air market, usually held periodically, where local vendors sell goods, handicrafts, and fresh produce |
| **Jyotirlingas** | Sacred shrines dedicated to Lord Shiva |
| **Kadal** | Bridge, often referring to historic wooden or stone bridges |
| **Kalyani** | Man-made water tanks with stepped edges typically built near temples for rituals, bathing, and water conservation |
| **Kere** | Pond |
| **Khau-Khatta** | Popular food street or eatery hub, often serving local and street food delicacies |
| **Kund** | Man-made water tanks typically built near temples for rituals, bathing, and water conservation |
| **Lungdawh** | Stacks and rows of big rocks and stones |
| **Marg** | Road |
| **Mahila** | Woman |
| **Mandapas** | Pillared pavilions used in temple architecture for gatherings, rituals, and ceremonies |
| **Nala** | Natural or man-made drainage channel that carries rainwater or wastewater |
| **Parisar** | Campus or complex |
| **Pukur** | Pond |
| **Sagar** | Sea, ocean, or large water body |
| **Sarovar** | Large water body |
| **Talab** | Pond or lake |
| **Tiranga** | Tricolour national flag of India |



# Abbreviations

| | |
|---|---|
| **ADB** | Asian Development Bank |
| **AMRUT** | Atal Mission for Rejuvenation and Urban Transformation |
| **BSNL** | Bharat Sanchar Nigam Limited |
| **BSUP** | Basic Services for Urban Poor (Scheme) |
| **Cantt.** | Cantonment |
| **CCTV** | Closed Circuit Television |
| **CNG** | Compressed Natural Gas |
| **Cr** | Crore |
| **DEWATS** | Decentralised Wastewater Treatment Systems |
| **DLP** | Defect Liability Period |
| **DMIC** | Delhi Mumbai Industrial Corridor |
| **DO** | Dissolved Oxygen |
| **DUDA** | District Urban Development Agency |
| **FOSCON** | Forest Society of Conservation |
| **GRC** | Glassfibre Reinforced Concrete |
| **GSB** | Granular Sub-base |
| **Ha** | Hectare |
| **HFL** | High Flood Level |
| **INR** | Indian Rupee |
| **ISBT** | Inter-State Bus Terminal |
| **LED** | Light Emitting Diode |
| **LGSF** | Light Gauge Steel Frames |
| **LSG** | Local Self Government |
| **Mil** | Million |
| **MLD** | Mega Litres per Day |
| **MoHUA** | Ministry of Housing and Urban Affairs |
| **MSL** | Mean Sea Level |
| **NMT** | Non-Motorised Transport |
| **NMV** | Non-Motorised Vehicles |
| **NNC** | Nurturing Neighbourhoods Challenge |
| **NRCP** | National River Conservation Plan |
| **OFC** | Optical Fibre Cable |
| **PCC** | Plain Cement Concrete |
| **PMC** | Project Management Consultancy |
| **PU** | Pre-University |
| **RCC** | Reinforced Cement Concrete |
| **RFID** | Radio-Frequency IDentification |
| **RO** | Reverse Osmosis |
| **RoW** | Right of Way |
| **SBM** | Swachh Bharat Mission |
| **SCM** | Smart Cities Mission |
| **SONAR** | Sound Navigation and Ranging |
| **Sqm** | Square Meter |
| **STP** | Sewage Treatment Plant |
| **SVNIT** | Sardar Vallabhbhai National Institute of Technology |
| **ULB** | Urban Local Bodies |
| **USD** | United States Dollar |
| **WTP** | Water Treatment Plant |

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