

# A Roadmap for Bhopal Healthy City

*“Healthy City is a Smart City”*

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## Acronyms

AIGGPA	Atal Bihari Vajpayee Institute of Good Governance and Policy Analysis
AMR	Antimicrobial Resistance
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy
BCLL	Bhopal City Link Limited
BHCP	Bhopal Healthy City Program
BHEL	Bharat Heavy Electricals Limited
BMC	Bhopal Municipal Corporation
BRTS	Bus Rapid Transit System
CCTV	Closed Circuit Television
CNG	Compressed Natural Gas
CBO	Community-Based Organization
HCN	Healthy Cities Network
HFA	Health for All
HMIS	Health Management Information System
IDSP	Integrated Disease Surveillance Program
MoHUA	Ministry of Housing and Urban Affairs
MPPCB	Madhya Pradesh Pollution Control Board
NGO	Non Governmental Organisation
NHM	National Health Mission, Government of Madhya Pradesh
SHRC	State Health Resource Center
SMART	Specific, Measurable, Achievable, Relevant and Time-bound
SDG	Sustainable Development Goal
WHO	World Health Organization



IIFM	Indian Institute of Forest Management
IISER	Indian Institutes of Science Education and Research
MANIT	Maulana Azad National Institute of Technology
MoHFW	Ministry of Health and Family Welfare
NCD	Non-Communicable Disease
SEARO	South-East Asia Regional Office
SPA	School of Planning and Architecture
TOD	Transit-Oriented Development
WtE	Waste-to-Energy



## Executive Summary

India is a rapidly urbanizing and this presents several opportunities to address the social, economic and environmental determinants of health for the urban population. The vision for Healthy Cities in India is rooted in the 2017 National Health Policy (Ministry of Health and Family Welfare, 2017), which is about achieving “the highest possible level of health and well-being, at all ages” and “universal access to good quality health care services without anyone having to face financial hardship as a consequence.”

There are diverse determinants of health that uniquely impact urban populations. The solution for a healthy city lies in a renewed approach that tackles the complex and complicated urban health scenario. The focus should be on extending and strengthening comprehensive primary healthcare, which addresses preventive, promotive, and curative services as well as determinants of health through intersectoral actions. Unified approaches need to be supported by and coordinated with other non-health sectors, such as housing and urban development, environment, road transport, education, water, and sanitation.

Bhopal is the second most populous and the largest city in Madhya Pradesh. It has been selected as one of the 100 cities to be developed in the “Smart City” initiative and ranks 5th among them. Bhopal is not yet a mega-city, ranking 16th among India’s 49 million-plus cities. It is not yet plagued by the woes of large cities like Mumbai or Pune and has many successes in cleanliness, conservation and biodiversity. As a capital city at the heart of India, it is only timely that the Bhopal and Madhya Pradesh governments have taken on the journey of making Bhopal India’s first Healthy City.

This Roadmap has been developed through a series of consultations over an 18 month period, involving various stakeholders, and informed through desk research and collection of data from different departments. The Roadmap identifies a vision for Bhopal, five results and 12 key actions to make progress towards the vision over a five year period (2024-2029).

The Roadmap focuses on a pan-city, multi-agency, integrated plan that will benefit most residents of the city. It follows the continuum of care from prevention to treatment and care and includes mechanisms for coordinating care across the city - through partnerships with different organizations, public and private. It is holistic and addresses determinants of health and is not limited to a few neighborhoods or communities, or implemented by only some stakeholders. It is not a catalog of activities by separate departments but a synchronization and amplification of collective actions.



The Roadmap prioritizes key actions but is not yet an action plan. We believe that this document provides guidances to the different stakeholders to modify their individual action plans and align investments.

The governance for the Healthy City initiative and the various aspects that need to be managed are outlined in the last chapter of the Roadmap.

We hope to support the implementation of subsequent action plans and welcome inputs and support.





## 1. Healthy Cities: Significance and Indian context

The Healthy Cities concept emerged in the 1980s based on a new public health movement, the Ottawa Charter, 1986, and the World Health Organization's (WHO) "Health for All" (HFA) strategy launched in 1978 at Alma Ata. The principles of HFA and the strategic guidance of the Ottawa Charter provide the framework for the WHO Healthy Cities initiatives. The Canadian Healthy Cities Project (now called the Healthy Communities) and the WHO European Healthy Cities Project, initiated in 1986, were the forerunners of this concept. These pioneering projects were built on the themes of primary health care and health promotion, which included challenging communities to develop projects that reduce inequalities in health status and access to services and to develop healthy public policies at the local level through a multisectoral approach and increased community participation in health decision making.

The 9th WHO Global Conference on Health Promotion in 2016 led to the creation of the Shanghai Declaration and Mayor's Consensus for a Healthy City, which were agreed upon by many cities worldwide. In 2021, the WHO South-East Asia Regional Office (SEARO) established a regional Healthy Cities Network (HCN) and Regional Laboratory on Urban Governance for Health and Well-Being (Regional Lab on UGHW). The HCN aims to bring together different sectors to work together on urban health issues, especially during and after COVID-19. To solve problems related to health in cities, it's important for governments, organizations, businesses, and communities to work together. This effort can help improve the health and well-being of people living in cities and also contribute to achieving Sustainable Development Goals, such as goals 3, 11, and 17, which focus on health, sustainable cities, and partnerships for development.

### Healthy Cities in India

Cities have distinct opportunities and challenges to ensure the population's health. Since most determinants of health are outside the health sector, the urban areas provide a chance to focus on them due to the density of their service area and the availability of resources. These include water, air quality, food, sanitation, education, housing, and the quality of urban planning. Any attempt to improve health (and not treat the sick alone) must address these determinants through a multi-stakeholder approach. Financial protection for people with low incomes and near-poor is a crucial concern, given that a significant part of total health expenditures is paid out-of-pocket, which can lead to their further impoverishment.

The vision for Healthy Cities in India is rooted in the 2017 National Health Policy (Ministry of Health and Family Welfare, 2017), which is about achieving "the



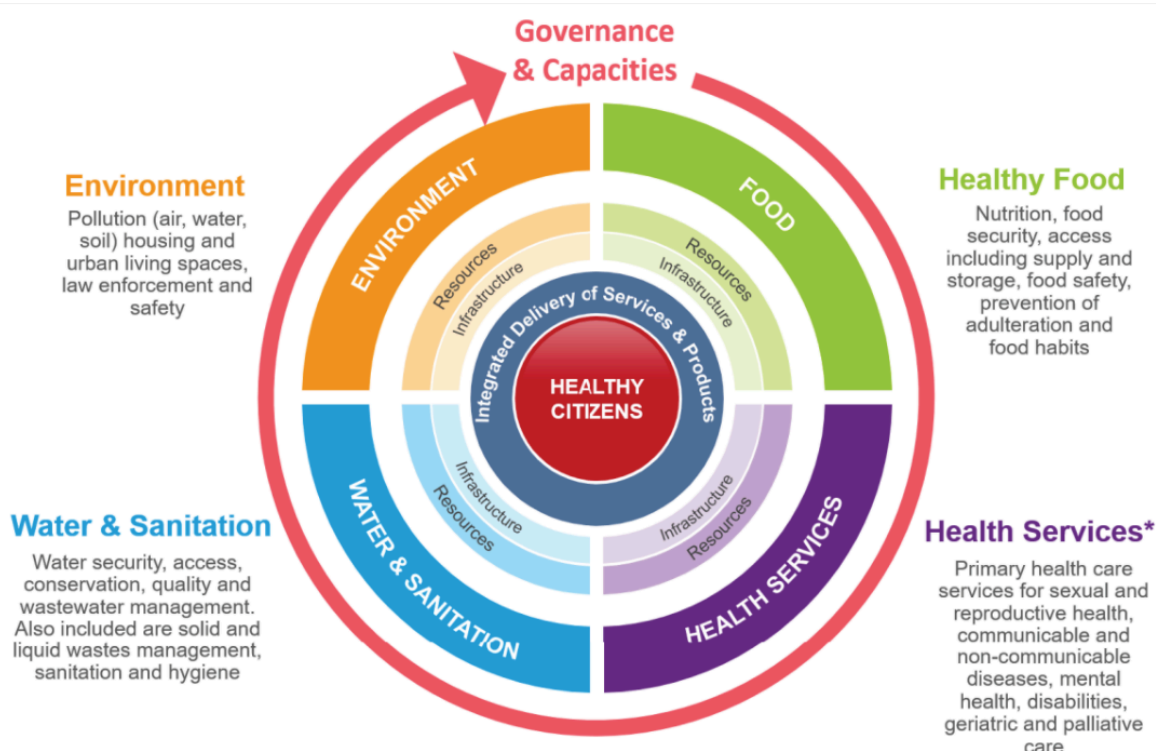
highest possible level of health and well-being, at all ages” and “universal access to good quality health care services without anyone having to face financial hardship as a consequence.”

There are diverse determinants of health that uniquely impact urban populations. The solution for a healthy city lies in a renewed approach that tackles the complex and complicated urban health scenario. The focus should be on extending and strengthening the comprehensive primary healthcare, which addresses preventive, promotive, and curative services as well as determinants of health through intersectoral actions. Unified approaches need to be supported by and coordinated with other non-health sectors, such as housing and urban development, environment, road transport, education, water, and sanitation.

It is envisaged that various services, products, infrastructure, and resources must come together to achieve the desired health outcomes within a city. Irrespective of the sector or department, we cannot hope to have healthy citizens and, eventually, healthy cities without these four components.

In 2021, the team at Swasti and HSTP developed the “What makes a healthy city” white paper. The diagram below, from the white paper, summarizes the strategic and operational imperatives

Figure 1: Operational framework for a Healthy City



This document, the Roadmap for Bhopal, builds on the framework and our understanding outlined in the White Paper and creates a plan of action for the City as it makes its journey towards “Health for All”.

As India accelerates its progress towards ensuring no one is left behind, global warming and its effects in the cities have become highlighted. The impact of climate change on health was called out by the G20 Health Ministers meeting in 2023 and is quoted below. Cities have the opportunity to address the health of people and their planet and we hope this Roadmap is able to catalyse the various efforts being made in India.

“Climate change will continue to drive health emergencies, including through the emergence and re-emergence of infectious diseases and by increasing the severity and frequency of natural disasters, thereby threatening to overwhelm health systems’ ability to deliver essential health services. As such, we recognize the need to enhance the resilience of health systems against the impact of climate change. We commit to prioritizing climate-resilient health systems development, building sustainable and low-carbon/low greenhouse gas (GHG) emission health systems and healthcare supply chains that deliver high-quality healthcare, mobilize resources for resilient, low-carbon sustainable health systems, and facilitate collaboration, including initiatives such as the WHO-led Alliance for Transformative Action on Climate and Health (ATACH).”

G20 Health Ministers Meeting Outcome Document & Chair’s Summary  
18th -19th August 2023, Gandhinagar, India

We were unable to identify Indian cities who had been identified as making the “Healthy City” journey, a few that are implementing various initiatives to improve the health outcome of their residents are:

- Indore, Madhya Pradesh: Indore has been recognized for its cleanliness initiatives and efforts to improve sanitation and hygiene, which contribute to overall health.
- Chandigarh: Chandigarh is known for its well-planned layout, abundant green spaces, and focus on providing healthcare facilities to its residents.
- Pune, Maharashtra: Pune is known for its efforts in promoting green initiatives, sustainable transportation, and healthcare infrastructure.
- Surat, Gujarat: Surat has made significant strides in improving public health by implementing initiatives related to sanitation, cleanliness, and waste management.



- Thiruvananthapuram, Kerala: Thiruvananthapuram has a strong focus on healthcare and is known for its well-established healthcare facilities and initiatives in public health.
- Mysuru, Karnataka: Mysuru has been recognized for its cleanliness, green initiatives, and efforts to promote healthy living among its residents.

As Bhopal makes its journey and seeks to join the SEARO Healthy Cities Network, we hope that this roadmap and the experiences that follow, are useful to other practitioners and governments working on achieving “Health for All”



## 2. About Bhopal

Bhopal is the capital of Madhya Pradesh and an emerging modern hub. It is the sixteenth largest city of India and the second most populated city of Madhya Pradesh. The city has a history rich in tradition and culture, with its roots dating back to the 11th century. The city was originally founded by the Parmara king Raja Bhoj and was known as "Bhojpal" during his reign. Raja Bhoj played a significant role in establishing the city as a center for trade and commerce. His contributions in terms of governance, architectural and urban planning endeavors have left an enduring legacy in the region.

In the late 19th century, Bhopal witnessed another pivotal era when the Begums of Bhopal, the female rulers of the state, came to power. They continued the legacy of development and modernization in the region, leaving their mark on the city's architecture and social reforms.

Today, of the 49 million-plus cities in India, Bhopal ranks 19 in the Ease of Living Index 2020 developed by the Ministry of Housing and Urban Affairs (MoHUA) and ranks among the top 10 cities in terms of quality of life. The Bhopal Smart City initiative focuses on sustainability and improved infrastructure, and was ranked 5th (of 75) in the Smart City Index. The city is one of the front-runners in implementation of Sustainable Development Goals (SDGs), being ranked at no. 15 among all the cities in India (SDG Urban Index, 2021).

According to the Bhopal City Biodiversity Index report prepared by Wildlife Institute of India, Bhopal scores 45 out of 72 in 18 indicators, a fairly high score that shows that the city has rich flora and fauna, which are well-protected. Bhopal stands out as the sole city in the nation that encompasses a National Park within its boundaries.

**Demography:** Bhopal city has a total population of 23 lakhs (Census 2011), with 12.39 Lakh men and 11.28 lakh women. The sex ratio is 918, lower than the national average (985 women to 1000 men, as per NFHS 5). The population density is 855 persons per sq. km.

**Geography and Climate:** Bhopal is situated on the Malwa Plateau, which is characterized by its undulating terrain. The city is surrounded by a network of lakes and hills, giving it a unique and picturesque landscape. The two primary lakes in Bhopal are the Upper Lake (Bada Talab) and the Lower Lake (Chhota Talab), which not only contribute to the city's scenic beauty but also serve as water reservoirs.

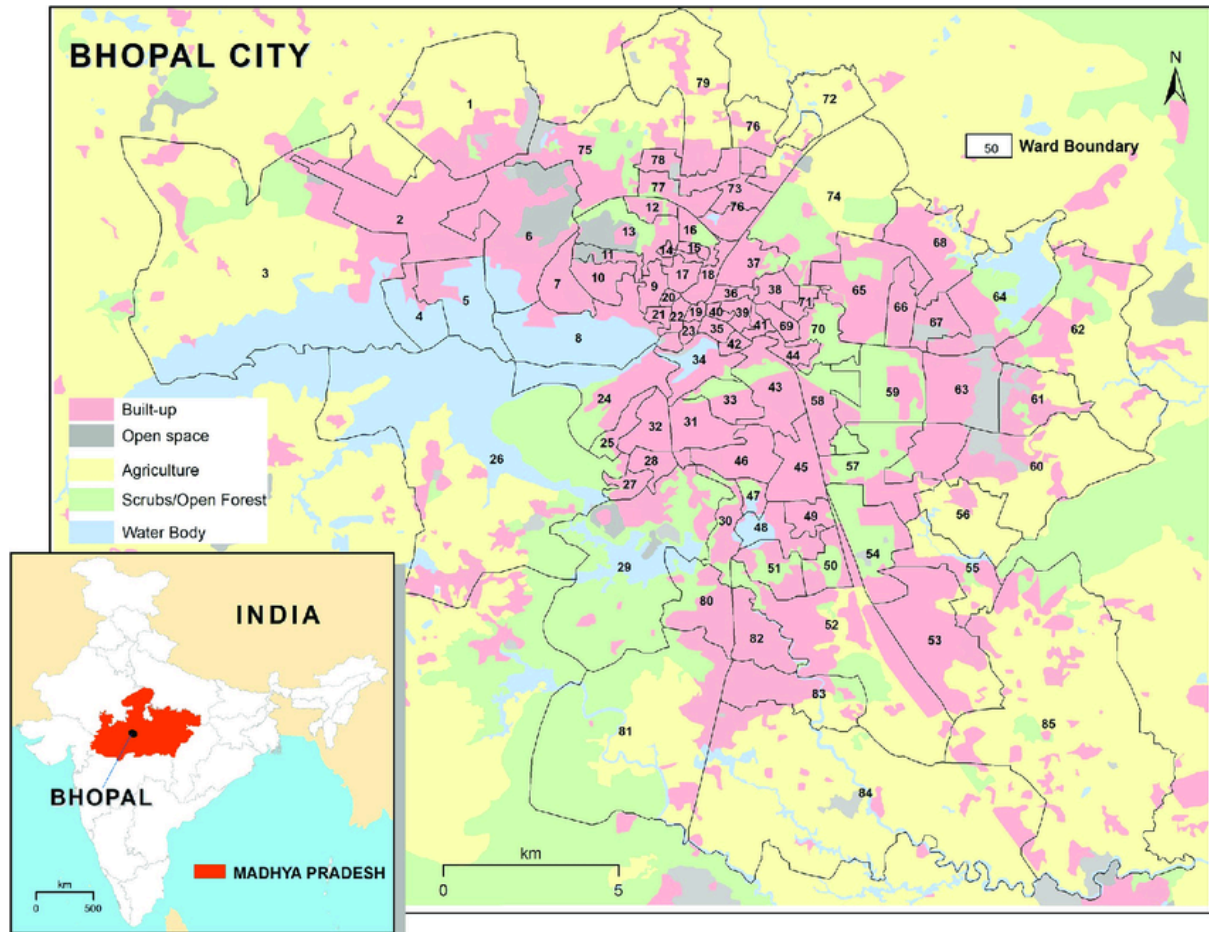
The city is bisected by several smaller streams and nullahs, and the landscape is dotted with parks, green spaces, and wooded areas. Bhopal's topography is





defined by a combination of urban and suburban areas, with the Vindhya and Satpura mountain ranges in the vicinity, providing a natural backdrop to the city.

Figure 2: Location map and administrative boundaries of Bhopal city, Madhya Pradesh, India



Source: Source of shapefile: [http://projects.datameet.org/Municipal\\_Spatial\\_Data/](http://projects.datameet.org/Municipal_Spatial_Data/).  
<https://doi.org/10.1371/journal.pntd.0010859.g001>

Bhopal experiences a humid subtropical climate, characterized by distinct seasons.

- Summer (March to June): Summers in Bhopal are hot and dry, with temperatures often exceeding 40°C (104°F) during the peak months of May and June. The city can experience heatwaves during this period.
- Monsoon (July to September): Bhopal receives the majority of its annual rainfall during the monsoon season. Rainfall is essential for agriculture and water reservoirs in the region. The monsoon season brings relief from the summer heat, with lush greenery and cooler temperatures.



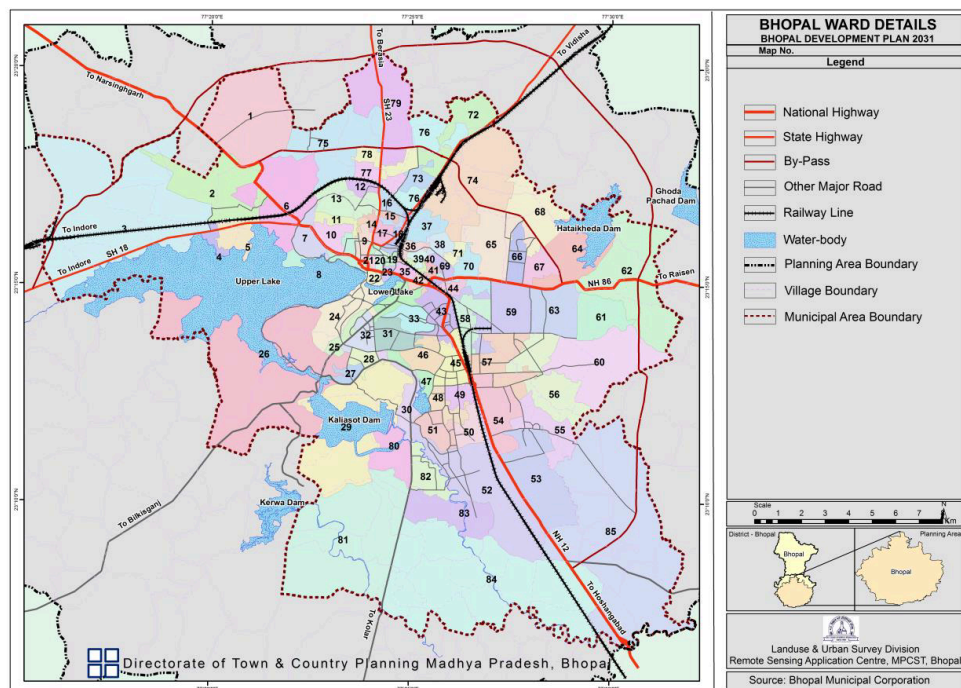
- Post-Monsoon (October to November): After the monsoon season, Bhopal experiences a transitional period with moderate temperatures and pleasant weather.
- Winter (December to February): Winters in Bhopal are cool and dry, with temperatures ranging from 8°C to 25°C (46°F to 77°F). It is the most comfortable and popular time for outdoor activities and tourism.

Bhopal's climate is characterized by a substantial variation in temperature and a reliance on the monsoon for precipitation. The city's proximity to lakes and hills contributes to its moderate climate and adds to its scenic beauty.

Governance: Like many other cities in India, Bhopal follows a multi-tiered system that includes various authorities and levels of government.

The Bhopal Municipal Corporation area currently consists of 85 wards, and the total area is 417.84 sq. km.

Figure 3: Administrative Map of Bhopal



Source: Development Plan of Bhopal 2031

**Ward Councils:** Bhopal is divided into various 85 administrative wards, each of which has its own Ward Council. Ward Councilors are elected representatives responsible for addressing local issues and concerns within their respective wards. They play a critical role in grassroots governance and act as a link between the residents and the BMC.

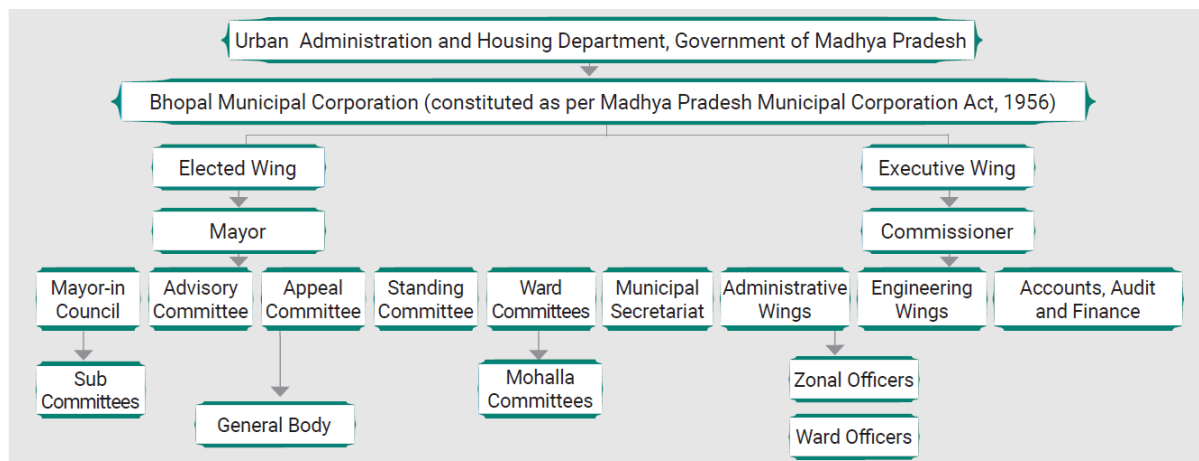


**Local Self-Government:** The Bhopal Municipal Corporation (BMC) is the primary local self-government body responsible for governing the city. The BMC is responsible for urban planning, public infrastructure, and services. It is headed by a Mayor and consists of elected Municipal Corporators who represent different wards within the city. The BMC plays a crucial role in the day-to-day administration and development of Bhopal. Bhopal ranks at number 3 in the Municipal Performance Index 2020 which covers the aspects of governance, services, planning, technology and finance.

**District Administration:** Bhopal is also the administrative headquarters of the Bhopal district. The District Collector, who is a senior Indian Administrative Service (IAS) officer, heads the district administration. The district administration is responsible for revenue collection, law and order, and the implementation of various government schemes at the district level.

**State Government:** Bhopal is the capital city of the state of Madhya Pradesh, and therefore, the state government has a significant influence on the governance of the city. The state government, led by the Chief Minister and the Cabinet, formulates policies, provides financial support, and oversees various administrative functions in the city. The state government offices, including the legislative assembly and the Secretariat, are located in Bhopal.

Figure 4: Organogram of BMC



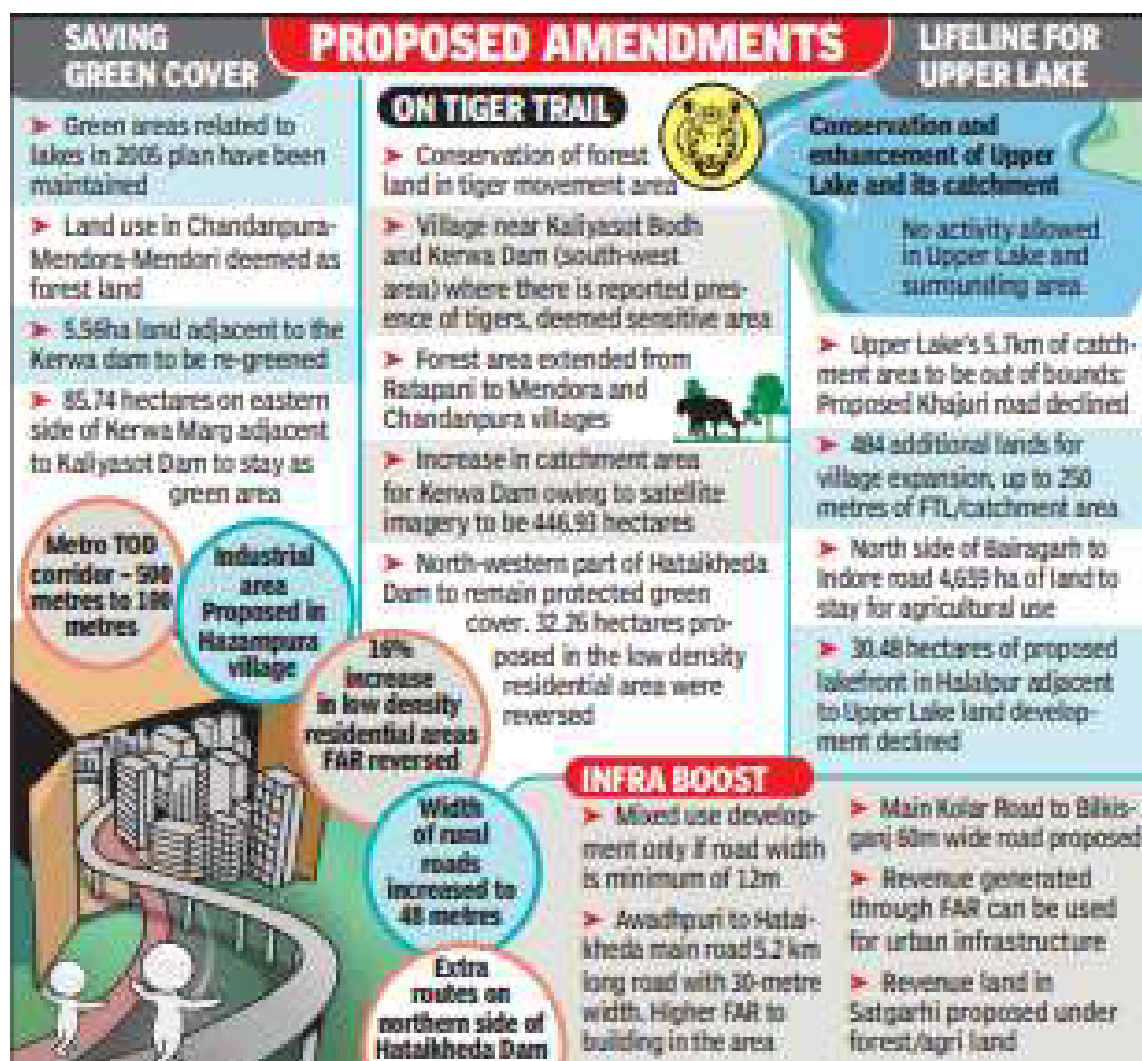
Source: Compiled by UN-Habitat India from Madhya Pradesh Municipal Corporation Act, 1956 and Bhopal City Development Plan, 2006

The draft Development Plan, 2031 for Bhopal includes an expansion of the planning area to 1016.90 sqkm, with an estimated population of 36 lakh by 2031. The plan introduces three new sub-cities and reinstates the green belt around the Upper Lake. Various changes proposed in the 2021 draft plan have been reversed, impacting factors such as residential development density, colony road width, and metro rail development.





The plan aims to protect natural areas like the Upper Lake and forest regions, restrict harmful activities, and align with revised wetland conservation rules. It also extends the catchment area buffer.



The Bhopal Development, 2031 has a focus on the infrastructure, blue and green infrastructure of the city but does not take various other measures that affect the health of the city and its residents.

The Roadmap and subsequent plans for Bhopal Healthy City will complement the various initiatives of the current Development Plan.



### 3. Contextualising the Roadmap

This initiative in Madhya Pradesh started with discussions in 2019 and the principles that have guided this effort so far are worth re-interating.

#### 3.1. Guiding principles

**Citizen-focused:** Focus on the city residents throughout the various institutional, structural, policy, and programmatic design requirements, which includes non-human life as well. The urban population is highly heterogeneous and the informal or often illegal status of low-income urban clusters results in public authorities lacking the mandate to collect data about them. Strategies to identify and reach the most marginalized are inadequate, resulting in limited evidence- or community needs-based health planning. Remaining focused on where people live and access services, products, infrastructure, and other resources, and what is convenient to them, rather than the provider's convenience, is critical, especially in the Indian context. Appreciating that people's well-being is connected to that of nature and vice-versa is essential as we seek to mitigate climate change.

**Results-oriented:** Defining the results we wish to achieve in the short and long term will be essential for all stakeholders to focus and contribute while overcoming the boundaries of departments and sectors. The "What makes a healthy city" white paper has led to almost two years of discussions in Bhopal to identify results and indicators (See Status Report, Bhopal Healthy City).

**Comprehensive:** A review of the Indian context reveals common challenges across Indian cities, including limited coverage of quality health services, inadequate health financing, shortage and inequitable health workforce distribution, and weak health management, particularly at the city level. Achieving health outcomes is also about social, environmental and economic determinants and hence, efforts to improve health outcomes cannot be limited to health services alone.

**Integrated:** It is evident from the "Healthy City" approach, to succeed, multiple departments, government entities, and several private and not-for-profit entities would need to play their roles. Sector strategies to achieve 'Healthy City' status would need to be integrated into one shared plan, implemented by other sectors but unified by a city-wide integration unit for project management.

**Evidence-based:** Most published data are not disaggregated within city wards, obscuring marked health disparities among the urban population. Most cities lack epidemiological data and adequate information on the urban poor and illegal settlement clusters. While other departments may have data, information has to be brought together at a city level to create a baseline for a city. Only then can



current gaps be identified and addressed even as the tracking of new programs begin so that we know if progress is being made.

**Win-Win-Win partnerships:** With less than six years left to achieve the 2030 SDGs, it becomes essential to leverage existing assets and build on complementarities. Not only will public departments have to work together, but the private sector will need to become suitably engaged, as will civil society organizations and the media.

## 3.2 Vision

With the principles providing guidance, a series of consultations between 2022 and 2023, led to the development of the vision statement for Bhopal as well as the results. A range of stakeholders across government, technical experts, academia, civil society participated in these consultations.

The vision statement for Bhopal Healthy City.

**"We envision a city that champions health in every aspect of urban life, inspiring active, mindful lifestyles, through innovative urban planning and community involvement"**

The Roadmap takes a 5 year view and the actions identified are planned for this time frame (5 years). We expect the implementation to inform future actions and believe that by then the integrated planning process will become institutionalized.



## 4. The Roadmap

To achieve the vision of Bhopal Healthy City, five results and 12 priority actions have been identified through a 18 month process of desk research and consultations.

### 4.1. Results

#### **Result 1: Improve urban mobility, walkability and reduce traffic accidents**

Over the next five years, we seek to enhance urban mobility and traffic management within our city. We will expand and improve public transportation networks to all main roads in the city, make them efficient, and accessible, facilitating easier commutes for our residents. Simultaneously, we will develop initiatives to address stray cattle, reduce noise pollution, and create safe streets for women, children, and older people. Additionally, we will invest in further improving by 50%, the pedestrian and cyclist-friendly infrastructure to encourage alternative modes of transportation, contributing to a more sustainable and efficient urban environment.

#### **Result 2: Reduce illness and chronic disease and increase quality of life**

We aim to promote physical activities within our community over the next five years. We will achieve this by offering yoga, AYUSH, and Ayurveda programs in public spaces, encouraging atleast half of the residents to embrace holistic well-being practices focusing on preventive care. Additionally, we will aim to conduct regular health screenings through the Health and Wellness centres to proactively detect and manage lifestyle-related diseases for all the vulnerable populations groups, fostering a culture of preventive healthcare and improved community health and wellness. We will also improve immunization across the life course (HPV for adolescents, influenza among the elderly) and also improve the quality of care provided through the health system (reduce maternal mortality, low-birth weight children etc).

#### **Result 3: Increase the consumption of local and seasonal foods and sustain healthy eating practices**

Over the next five years, our goal is to reduce junk food consumption by 50%, increase the availability of local and seasonal foods by 75%, and establish new kitchen gardens, contributing to the long-term sustenance of healthy eating practices in our communities.



#### **Result 4: Improve ground water conservation, solid waste management and access to sanitation, especiall in underserved areas.**

We aim to achieve universal access to clean and well-maintained public sanitation facilities, particularly in underserved areas like slums within an year. Simultaneously, we will invest in implementing waste-to-energy technologies to contribute to sustainable energy generation. Furthermore, we aim to sustain and achieve 100% source segregation of waste offering incentives for recycling and energy generation as we work towards a more efficient and environmentally responsible waste management system over the next five years. Re-use of waste-water and increasing conservation of ground water will increase resilience.

#### **Result 5: Maintain an integrated and robust monitoring system that will allow evidence-based decision making**

We aim to develop and implement a city-wide, multi-source wastewater based surveillance system in the next two years for early warning of potential health and climate risks. This will also support an integrated and robust monitoring system that will establish baseline data for 50 key indicators within one year. Measuring progress every quarter, identifying trends and areas for continuous improvement over the next five years will support evidence based decision making journey towards a Healthy City.

## 4.2 Getting to the Results

Achieving the desired results over the next five years (2024-2029) is possible if we:

- i. **Focus on actions with a multiplier effect:** Prioritizing multiplier effects concentrates efforts on actions across multiple focus areas and this is what we have chosen to do. For instance, investing in water conservation and sanitation improves health, bolsters food security and a healthier environment. This allows us to optimise limited resources by ensuring that each action contributes to multiple goals.
- ii. **Highlighting Interconnectedness and Inter-Agency Coordination:** The complexity of challenges related to healthy water, food, environment, and health services necessitates collaboration among multiple agencies and stakeholders. There is acknowledgement that no single organization can address these multifaceted issues on their own. Coordinating efforts facilitates resource sharing, knowledge exchange, and best practice dissemination, leading to more efficient and effective initiatives. It helps prevent duplication, ensuring that each initiative complements others.



Moreover, policy alignment across different sectors becomes possible, promoting synergy among policies and regulations related to various aspects of health and well-being.

The Roadmap lays out the key actions that are necessary, provides an indicative timeline and agencies that will be involved. Incorporating these into the PIP of each department and identifying roles for private and civil society organisations will allow for coordinated implementation.

A summary of the priority actions, their contribution to the Results and the thematic areas is summarized below.

Priority Actions	Result	Impact on themes				
		Water	Sanitation	Food	Environment	Health
A. Strengthening public transport and traffic management	1				✓	✓
B. Promote non-motorized transport	1				✓	✓
C. Promote Healthy Habits	2			✓	✓	✓
D. Immunization across the Life Course	2				✓	✓
E. Quality of Care	2				✓	✓
F. Ensuring Risk Assessment and Screening of Lifestyle-Related Diseases	2				✓	✓
G. Promoting healthy eating practices	2,3	✓	✓	✓	✓	✓
H. Protection of green and blue infrastructure	4	✓	✓	✓	✓	✓
I. Sustain and enhance waste	4	✓	✓	✓	✓	✓



management						
J Improve the useability of public toilet infrastructure	4		✓		✓	✓
K. Establishing an integrated monitoring system	5	✓	✓	✓	✓	✓
L Strengthening surveillance systems	5	✓	✓	✓	✓	✓

## Result 1: Improve urban mobility, walkability and reduce traffic accidents

### Priority action A: Strengthen public transportation and traffic management

Bhopal has a diverse public transportation system. It includes a Bus Rapid Transit System (BRTS) designed for efficient bus services on dedicated lanes, operated by the Bhopal City Link Limited (BCLL). The city also has a vast network of BCLL buses covering most of the city area connecting major commercial and industrial centres to residential localities. Additionally, a metro rail project is in progress, aiming to enhance the city's transportation infrastructure. One of the lines is ready to be inaugurated post-completion of trial runs. Also, Bhopal performs well on the Municipality Performance Index with a rank of 3 out of 111 cities suggesting effectiveness and efficiency of municipal governments in delivering services and governing their respective areas.

Bhopal's visionary Development Plan for 2031 envisions a meticulously designed road network and a bustling transportation hub in the city's northwestern quadrant, strategically positioned between the vital arteries leading to Indore and Narsingharh. This strategic positioning is geared towards serving not only the city itself but also its burgeoning urban agglomeration.

At the heart of this forward-looking development plan is transit-oriented development (TOD), which places considerable emphasis on the areas flanking key public transportation corridors such as the Bus Rapid Transit System (BRTS) and the Metro Rail. Under this framework, these corridors are envisioned to become vibrant hubs of activity, characterized by a heightened density of commercial establishments and workplaces. The overarching goal is to facilitate seamless accessibility for the city's residents, fostering a harmonious blend of efficient transportation and vibrant urban life. This visionary approach ensures





that Bhopal's future is not only well-connected but also boasts thriving urban centers that cater to the needs and aspirations of its residents.

To further strengthen the public transportation and mobility in the city it has been recommended to integrate the following into the development plans and programs.

**Last-mile connectivity:** The city's commitment to Transit-Oriented Development along Metro and BRTS corridors is a forward-thinking approach. It involves redesigning urban areas surrounding these key public transportation routes to maximize accessibility and utility. One crucial aspect is improving last-mile connectivity, which is currently lacking. Initiatives might include introducing feeder buses, bicycle-sharing programs, and pedestrian-friendly infrastructure like sidewalks and crosswalks. These measures will ensure that commuters can easily access and use public transportation, reducing dependency on private vehicles and traffic congestion.

**Decarbonising Transport modes:** To reduce the environmental impact of transportation, the city is wisely focusing on decarbonisation. Transitioning city buses to Compressed Natural Gas (CNG) is a positive step. Expanding on this, the city can implement policies to promote cleaner fuels, such as electric or hydrogen-powered **buses**. Additionally, sourcing renewable energy for metro rail operations can significantly reduce their carbon footprint.

**Safety and Convenience:** Ensuring the safety and convenience of public transportation users, especially women, children, and senior citizens, is paramount. This involves improving accessibility to transport nodes such as bus stops and metro stations by creating barrier-free infrastructure and installing ramps, and elevators for those with mobility challenges. Better traffic management around these nodes can help decongest the areas, making them safer and more efficient. Additionally, increasing the presence of security personnel and implementing technologies like CCTV cameras can enhance passenger safety.

### **Priority action B: Promote non-motorized transport**

The local government has undertaken a noteworthy endeavor in developing dedicated cycle tracks alongside major roadways, strategically integrated with Bus Rapid Transit System (BRTS) corridors. Bhopal ranks 19 out of the 49 cities in the Ease of Living Index, performing extremely well on the Quality of Life pillar<sup>1</sup>. This initiative aims to foster cycling as a sustainable and eco-friendly mode of transportation. However, a noticeable underutilisation of these dedicated cycle tracks has been observed.

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<sup>1</sup> [https://livabilitystore175634-prod.s3.amazonaws.com/public/docs/Ease\\_of\\_Living\\_Report.pdf](https://livabilitystore175634-prod.s3.amazonaws.com/public/docs/Ease_of_Living_Report.pdf)





Regrettably, the existing pedestrian infrastructure in the city presents numerous deficiencies. The absence of elevated, unobstructed footpaths poses a significant challenge to pedestrians as well as those with disabilities, hindering their ability to traverse the city comfortably and safely. Furthermore, the inadequacy of safe road crossings at most intersections poses a perilous situation for cyclists and pedestrians. Moreover, the conspicuous lack of natural shading along pedestrian and cycle routes further diminishes the appeal of these eco-friendly transportation modes.

**Assessment and Planning:** To improve cycling and pedestrian facilities, we must start with a clear plan. We'll begin by carefully evaluating our current cycling infrastructure and understanding why it's not being used to its full potential. Simultaneously, we'll assess pedestrian facilities, focusing on issues like missing footpaths and unsafe intersections. To make the plan effective, we'll collaborate with experts and involve local communities for their insights and ideas. This thorough assessment will lay the foundation for our improvement strategy.

**Infrastructure Enhancement:** Improving the city's cycling and pedestrian infrastructure is paramount to fostering sustainable and eco-friendly modes of transportation. To this end, the enhancement of existing infrastructure should be prioritized. This includes the creation of elevated, unobstructed footpaths that not only facilitate pedestrian mobility but also prioritize safety and accessibility. Safe road crossings at key intersections should be designed to minimize risks for cyclists and pedestrians. Furthermore, introducing natural shading elements, such as trees and canopies, along pedestrian and cycle routes should be considered. These enhancements will not only augment the appeal of eco-friendly transportation but also improve the overall urban environment.

**Public Education and Engagement:** To encourage cycling and ensure safety, we'll spread the word about its benefits. We'll launch campaigns to tell people why

*Raahgiri Bhopal is an initiative inspired by the "Raahgiri Day" concept, which involves temporarily closing off a section of a city's streets to vehicular traffic and opening it up for various recreational and community activities. During Raahgiri Bhopal events, people can participate in activities such as cycling, walking, yoga, sports, and cultural performances on car-free streets. It promotes a healthy and active lifestyle while fostering a sense of community and sustainable urban living.*

cycling is great for the environment and their health. We'll also teach cyclists and pedestrians about safety rules through workshops and materials. This way, everyone can enjoy the roads responsibly and safely.

**Integration and Accessibility:** To create a seamless and efficient transportation network, the integration of cycling infrastructure with other modes of public transportation is vital. This includes enhancing the connectivity of cycle tracks with public transit options, such as buses and the BRTS system. The objective is to



make it convenient for commuters to switch between different modes of transport, thereby reducing dependency on private vehicles. Additionally, ensuring that cycling infrastructure is accessible to all community members, including individuals with disabilities, is crucial.

**Maintenance and Safety:** The sustainability of cycling and pedestrian infrastructure depends heavily on regular maintenance and enhanced safety measures. A well-defined maintenance schedule should ensure that cycle tracks, footpaths, and related infrastructure remain in good condition. This proactive approach not only extends the lifespan of these assets but also contributes to a safer and more enjoyable experience for users. To further enhance safety, installing adequate lighting along routes, especially during nighttime hours, is imperative. Security measures, such as the placement of surveillance cameras in high-traffic areas, can also deter unlawful activities and enhance overall safety for both cyclists and pedestrians.

**Incentives and Encouragement:** To incentivise the adoption of cycling as a sustainable mode of transportation, it is essential to engage the support of businesses and communities. Businesses can play a significant role by providing amenities that cater to cyclists, such as bike racks and shower facilities for employees who cycle to work. Incentives like subsidies or discounts on bicycle purchases or rentals can be offered to encourage more individuals to embrace cycling. These incentives not only promote eco-friendly transportation but also contribute to reduced traffic congestion and improved air quality. Engaging with local businesses and communities can create a positive feedback loop, motivating individuals to choose sustainable transportation options.

## **Result 2: Reduce illness and chronic disease and increase well-being**

### **Priority action C: Promote Healthy Habits**

Promoting healthy lifestyles in the city with abundant green spaces, a strong cultural heritage, and a tradition of valuing health and well-being can have a profound impact on the overall health and well-being of its citizens. Key recommendations received through the consultations and understanding of the city are presented below.

#### **Encouraging Physical and Mental Well-being**

- Promoting Yoga and Other Forms of Exercise: To promote physical activity and well-being, the city should emphasize

*"Run Bhopal Run" is an annual marathon event in Bhopal, India, promoting fitness and a sense of community. It attracts runners of all levels, from amateurs to professionals, to participate in various race categories and enjoy the vibrant atmosphere of the city.*



the importance of regular exercise. Yoga, with its deep roots in the culture, can be highlighted as a remarkably accessible and culturally relevant form of exercise. Community yoga sessions can be organized in the city's parks and open spaces, making it easy for citizens to participate in physical activities that align with their traditions.

- **Ensuring Access to Safe and Maintained Public Spaces:** Maintaining and enhancing the quality of green spaces and parks is crucial. These areas should be safe, well-lit, and clean, encouraging people to use them for physical activities. Ensuring that these spaces are inviting and well-maintained will contribute significantly to promoting an active lifestyle among residents. It has been highlighted that most of the public parks and playgrounds in the city are closed early evenings which limits access to the residents post working hours. BMC should devise a strategy to ensure longer access hours for the benefit of the residents.
- **AYUSH and Yoga Promotion:** Educating the community about the holistic benefits of AYUSH practices, which include Ayurveda, Yoga, Unani, Siddha, and Homeopathy, can foster well-being. Highlighting the alignment of healthy lifestyle choices with cultural values is key to gaining community support. Emphasizing how traditional practices can coexist with modern health approaches allows for a harmonious integration of cultural heritage and health promotion.
- **Training and Workshops:** Organizing workshops and training programs on traditional healing practices can further strengthen the connection between the community and its cultural health heritage. These initiatives can empower individuals to incorporate traditional wellness practices daily.
- **Community Engagement:** Involving community leaders and influencers in health promotion initiatives can reinforce the importance of these practices within the cultural context. Their endorsement and active participation can inspire others to embrace healthier lifestyles while respecting and valuing their cultural tradition

*Lokrang is a popular cultural festival held in Bhopal, Madhya Pradesh, India. It typically takes place in January and showcases a diverse range of traditional and folk arts, music, dance, and crafts from different regions of India. The festival aims to celebrate and preserve the rich cultural heritage of the country and promote the exchange of cultural traditions.*

### Education on Healthy Eating Habits

- **Public Education and Engagement:** Collaborate with the Tourism Department and Government restaurants to launch comprehensive campaigns. These campaigns should highlight the detrimental effects of consuming low-nutrient food and emphasize the importance of maintaining a balanced diet with dietary diversity.



- **Menu Makeovers:** Encourage tourism-related establishments to offer healthier menu options with reduced fat, sugar, and salt levels. Promote traditional seasonal dishes that are nutritious and celebrate the local culinary heritage.
- **Incentivize Street Food Vendors:** Local authorities should consider incentivising street food vendors who provide and promote healthy food choices. This can include reduced licensing fees or participation in special events focusing on healthy street food.

### Prevention of Substance Abuse

- **Education and Treatment:** Developing educational programs to inform about the dangers of substance abuse is vital. Additionally, establishing treatment centers for individuals struggling with addiction can provide them with the necessary support and resources to overcome their challenges.
- **Legal Enforcement:** To discourage substance abuse, it's important to enforce stricter regulations on the sale and distribution of tobacco, drugs, and alcohol. Increasing taxes on these products can further disincentive their consumption, promoting healthier choices within the community.

### Priority action D: Immunization across the Life Course

Bhopal has shown impressive immunization rates, with 94.98% of children (12-23 months) fully immunized and 90.35% receiving most vaccines. However, immunization beyond age 5 who received all doses and boosters is not available and this becomes critical as India launches HPV vaccinations for adolescent boys and girls in 2026. Similarly, influenza vaccination among the elderly can reduce risk of respiratory illness and strengthening routine immunization improves long term health outcomes.

### Priority action E: Quality of Care in private and public facilities

Maternal mortality and low-birth weight infants indicate the need for improved quality of care as well as other socio-economic determinants.

- Increased budgetary allocation for public healthcare is essential to address staffing shortages as well as upgrading infrastructure
- Strengthening public health management systems through better resource allocation, training programs for staff, and robust grievance redressal mechanisms can enhance efficiency and accountability.
- **Public-Private Partnerships:** Establishing effective public-private partnerships can leverage private sector expertise and resources to improve infrastructure, diagnostics, and specialized care availability in public facilities.



- Reporting by private facilities - Implementing strict reporting protocols can identify whether protocols are being followed and how improvements can be made
- Quality Guidelines: Enforcing quality guidelines in private healthcare providers can help minimize unethical practices and ensure patient well-being takes precedence over profit motives.
- Reaching Underserved Populations: Incentivizing private healthcare providers to serve underserved populations to make services more accessible for economically disadvantaged populations.

### **Priority action F: Ensuring Risk Assessment and Screening of Lifestyle-Related Diseases**

- Standardizing Risk Assessment: Simple questions that can identify risk for different health conditions are a good way for people themselves or front line health workers to identify who may need to need to undergo screening. Since screening as well as confirmatory tests on a regular basis at a population level can be prohibitive, risk assessments are an easy way to educate and bring people to the health care provider.
- Strengthening Urban Health Services: To support the prevention and early detection of lifestyle-related diseases, the city should invest in urban health infrastructure. This includes providing easy access to screening mainly focusing on non-communicable diseases (NCDs) and mental health disorders, but also integrating them with other national programs such as Anemia Mukh Bharat
- Engagement Campaigns: Educating citizens about the importance of regular health screenings and mental health check-ups through campaigns can reduce the stigma associated with seeking help. These efforts can encourage proactive health management and early intervention.

### **Result 3: Increase the consumption of local and seasonal foods and sustain healthy eating practices**

#### **Priority action G: Promoting healthy eating practices**

Bhopal is already among the top districts in the country on food safety, It was ranked no. 2 in the Food Safety Index released by the Food Safety & Standard of India (FSSAI) in June 2023<sup>2</sup>. During city-level consultations, many stakeholders emphasized a crucial concern regarding the growing consumption of unhealthy, processed, and junk food within the city. This alarming trend is expected to have enduring repercussions on the well-being of its citizens. Notably, there is a consensus that street vendors often offer food options laden with excessive fat,





sugar, and salt, contributing to this health issue. Now the city needs to make strides towards making street food healthy.

To address this matter, the city administration has been actively formulating strategies to transform key food vending hotspots, such as the boat club area along the upper lake, into exemplary "eat streets." These revamped areas are intended to provide an enhanced dining experience, offering improved ambience, access to clean water, and better sanitation facilities.

Concurrently, the exploration of initiatives promoting healthier food choices is underway. In addition to the ongoing efforts, it is recommended to plan and implement the following interventions to promote healthy eating in the city.

*"Parents especially the mothers are unaware of what a healthy diet is, she does not understand green leafy vegetables/ sprouts. The concept of a healthy diet is missing. This concept needs to be first made clear to the local workers; ASHA and Anganwadi workers"*

- Medical Officer, UPHC Bhopal  
(1st city level meeting)

### Promoting Urban Farming

- **Urban Agriculture Initiative:** Advocate and support the concept of urban farming, both on the ground and on rooftops. Urban farming allows residents to cultivate chemical-free, nutrient-rich produce. Additionally, it contributes to increasing green spaces in the city, which can help mitigate the urban heat island effect.
- **Capitalize on Low-Rise Buildings:** Bhopal's cityscape features low-rise, low-density buildings with ample open spaces. This provides an excellent opportunity for building-level gardening, allowing residents to grow various fruits and vegetables.

### Supporting Locally Grown Food

- **Seasonal Campaigns:** Organize city-wide education campaigns that promote locally grown food. Emphasize the importance of adhering to traditional practices and seasonal variations in dietary choices. Encourage residents to connect with their geographical heritage through food.
- **Food Festivals:** Host festivals showcasing and serving time-honored seasonal specialities. These events can serve as platforms for educating and celebrating the city's culinary diversity.

*The Millets Festival in Bhopal, organised in collaboration with the Ministry of Agriculture and Farmers Welfare, celebrated the cultural heritage of India and highlighted the role of millets in Indian cuisine. The event featured food stalls serving millets-based dishes from diverse culinary traditions, and was attended by government officials, millet stakeholders, and general public.*



### Sustainable Nutrient Loop

- Promote using locally produced compost from municipal solid waste to improve home- and building-level gardening and large-scale urban farming yields. This sustainable practice closes the nutrient loop naturally, reducing waste and enhancing soil fertility, ultimately leading to more sustainable and productive agricultural practices.
- By implementing these comprehensive strategies, Bhopal can encourage healthier eating habits, foster urban farming, celebrate local food traditions, and promote sustainability, ultimately improving the overall well-being of its residents and the city's environment.

### **Result 4: Improve ground water conservation, solid waste management and access to sanitation, especiall in underserved areas.**

#### **Priority action H: Protection of green and blue infrastructure**

Bhopal, known as the "City of Lakes" in India, boasts an impressive balance between urban development and environmental preservation. One of its jewels, the Upper Lake or Bhojtal, is a testament to its successful conservation efforts, setting an example for others. Within the city, lush urban forests and numerous parks provide havens for biodiversity and green spaces for residents. In fact, Indore and Bhopal are the one of the first Indian cities to measure the City Biodiversity Index. Bhopal scores 45 out of 72, a fairly high score that shows the city is rich in flora and fauna, which are well protected.

Looking ahead to 2031, Bhopal's Development Plan places a strong emphasis on protecting water bodies and green spaces, including conservation zones around the Upper Lake. It also prioritizes safeguarding other water bodies within the city, ensuring their sustainability amidst urban expansion. This commitment to environmental preservation underscores Bhopal's dedication to being a city that thrives in harmony with nature.

A few priority actions identified for protecting both blue (water bodies) and green (natural spaces) infrastructure in the city are:

**Strengthen Regulatory Frameworks:** Enhance and strictly enforce regulations and policies related to land use and development near water bodies and green spaces. This includes setting clear buffer zones around water bodies to prevent encroachment and land-use practices that harm the environment.

**Biodiversity Conservation:** Implement initiatives to protect and enhance biodiversity within urban forests and green spaces. This may include afforestation programs, wildlife corridors, and establishing protected areas within the city.



*The Bhoj Wetland Conservation Project is a classic example of protection of blue and green infrastructure aimed at preserving and protecting the Bhoj Wetlands, which include the Upper Lake (also known as Bada Talab) and the Lower Lake (also known as Chhota Talab) in Bhopal, Madhya Pradesh, India. These lakes are vital water bodies and support a rich ecosystem, as well as serving as a source of drinking water for the city of Bhopal.*

*Key features of the Project include biodiversity conservation, water quality management, afforestation and catchment area, waste management and public awareness. It is aimed at balancing the needs of urban development with the preservation of natural ecosystems and water resources.*

**Community Engagement:** Empower local residents to become vigilant stewards of their surroundings by proactively monitoring nearby water bodies and green spaces and promptly reporting any concerns. This grassroots approach empowers the community as custodians of their environment.

Foster environmental practices through educational workshops focused on biodiversity conservation and ecosystem protection. Mobilize volunteer groups to actively nurture green spaces and preserve local biodiversity by orchestrating cleanup initiatives, tree planting campaigns, and habitat restoration projects. Encourage residents and community organizations to enter into conservation agreements with local authorities, clearly defining their roles and receiving incentives for safeguarding green and aquatic infrastructure.

**Green Urban Planning:** Integrate green and blue infrastructure into the city's master plan and zoning regulations. Prioritize the creation of green belts and corridors, ensuring that green spaces are easily accessible to all residents.

**Public Education and Engagement:** Conduct public campaigns and educational programs to inform residents about the importance of preserving water bodies and green spaces. Promote responsible recreational activities and discourage littering and pollution.

By placing community-based monitoring and protection approaches at the forefront of preservation efforts while emphasizing the importance of biodiversity, Bhopal can foster a sense of ownership and responsibility among its residents. This collective commitment will not only safeguard the city's natural treasures but also contribute to a sustainable and harmonious urban environment.





### Priority action I: Sustain and enhance waste management

The city of Bhopal has earned the prestigious title of being the cleanest capital city in India in the Swacch Sarvekshan 2023. This remarkable achievement stands as a testament to the unwavering commitment of both the city's residents and

the dedicated efforts of the Municipal Corporation of Bhopal.

*The Bhopal Municipal Corporation (BMC) has initiated a comprehensive waste management project that includes the bio-remediation of a solid waste dumpsite and the launch of a pilot bio-methanation program. These initiatives prioritize environmental sustainability and the conversion of organic waste into energy. BMC's commitment to eco-friendly waste management and sustainable energy generation is evident, and the success of these pilot programs could potentially pave the way for broader adoption in the region, serving as a model for other areas seeking green waste solutions.*

The Swacch Sarvekshan 2023, an initiative undertaken by the Government of India under the Clean India Mission, is a comprehensive evaluation that encompasses various critical aspects, including access to toilets, solid and

liquid waste management, innovation and the adoption of best practices, active citizen participation, and capacity enhancement activities facilitated by local governments. Bhopal's consistent progress in these areas sets a shining example for cities nationwide.

One of the standout accomplishments of Bhopal has been its approach to solid waste management. The city undertook the daunting task of scientifically remediating one of its largest open dumping sites. Through meticulous planning and execution, Bhopal has not only succeeded in this endeavor but has also excelled in door-to-door collection, efficient transportation, and the scientific treatment of municipal solid waste throughout the city.

The importance of sustaining these efforts cannot be overstated. They are not merely about earning accolades but are intrinsically tied to the well-being and public health of the city's residents. Bhopal's Municipal Corporation has shown remarkable dedication in continuing these initiatives tirelessly, ensuring that the city remains a clean, healthy, and vibrant place to live.

Some of the key suggestions received from technical experts and key stakeholders during the consultation to further improve waste management in the city were:

#### Sustain and Improve Source Segregation

- **Public Education and Engagement:** The first step in effective waste management is source segregation, where individuals and households separate their waste into categories like organic, recyclable, and non-recyclable. Public campaigns have already been initiated, contributing



to a reasonable awareness level among residents. Continuous educational programs and campaigns should be conducted to sustain and improve practices. Campaigns that emphasize source segregation's environmental and economic benefits and incentivize behaviour will encourage participation.

- **Regulations and Enforcement:** While awareness campaigns are important, regulations and strict enforcement are equally crucial. Local authorities should implement and enforce laws and regulations that mandate source segregation. Penalties for non-compliance can help ensure that residents take the process seriously. Additionally, incentives for proper source segregation, such as reduced waste collection fees for compliant households, can be introduced.
- **Monitoring and Feedback:** Implement a system for monitoring and providing feedback to residents on their source segregation efforts. This can involve periodic waste audits to identify areas of improvement and provide feedback to residents and communities. Positive reinforcement and recognition for exemplary source segregation can also motivate residents.
- **Technological Solutions:** Utilize technology, such as mobile apps or smart bins, to make source segregation easier and more convenient for residents. These tools can guide which items go into which bins and offer rewards or incentives for proper waste sorting.
- **Community Engagement:** Engage local communities and neighborhood associations in waste management initiatives. Encourage community-led efforts to promote source segregation and ensure that waste collection and disposal are community-driven processes.

### Waste to Energy

- **Environmental Considerations:** Moving towards renewable energy sources is crucial in facing environmental challenges, including climate change. Waste-to-energy (WtE) technology can significantly reduce the city's carbon footprint by converting non-recyclable waste into energy, which can replace conventional fossil fuels.
- **Scaling Up Biogas and WtE Plants:** The city has initiated small-scale biogas production (biomentanation). To fully harness the potential of WtE, it is essential to scale up these operations. Establishing city-level WtE plants, which can handle a larger volume of waste, is necessary. These plants can use modern technologies for efficient and environmentally friendly energy production.
- **Decentralized Options:** Alongside large-scale WtE plants, continue to invest in and expand decentralized options like biomentanation. These smaller-scale facilities can cater to localized energy demands, reducing the need for long-distance waste transportation and making waste-to-energy conversion more efficient.



- **Resource Recovery:** Besides energy generation, emphasize resource recovery from waste. This includes the extraction of recyclable materials and the production of compost from organic waste. These secondary benefits reduce waste and generate revenue streams for the city.
- **Environmental Regulations:** Ensure that waste-to-energy operations adhere to strict environmental standards to minimize potential negative impacts on air and water quality. Regular monitoring and compliance checks are essential.
- **Public Communication:** Educate the public about the benefits of waste-to-energy technology, emphasizing its role in reducing greenhouse gas emissions and improving energy sustainability. Address any concerns or misconceptions residents may have regarding the environmental impact of WtE.

By implementing and enhancing these interventions, the city can significantly improve its waste management practices, increase resource recovery, reduce environmental impact, and contribute to a cleaner and more sustainable urban environment.

### **Priority action J: Improve usability of public toilet conveniences**

The city of Bhopal has an extensive network of over 200 public and community toilets, a testament to its commitment to enhancing sanitation infrastructure. The BMC has been driving positive changes in this area. The BMC has diligently worked to elevate the city's public toilet infrastructure through innovative initiatives. It encompasses a range of strategies, including constructing modern toilet facilities, revitalizing existing ones, and an unwavering focus on promoting proper sanitation practices among the city's residents. Community toilets, strategically placed in various neighborhoods, are pivotal in ensuring easy access to essential sanitation facilities, particularly for urban households with limited resources.

One noteworthy achievement is Bhopal's pioneering role in implementing Smart Public toilets, a cutting-edge initiative integrating technology and public-private partnerships. These smart facilities have garnered widespread acclaim for their ability to provide real-time information on toilet availability, cleanliness status, and streamlined payment options.

*The Bhopal Municipal Corporation has implemented a Smart Cafe Public Toilet at No. 10 Market through a Public-Private Partnership (PPP) model. This collaboration ensures that the facility is efficiently managed, offering clean and convenient restroom amenities and a cafe to visitors and shoppers while maintaining high standards of service and cleanliness. It's a noteworthy example of the government and private sector working together to enhance public infrastructure.*



In Swachh Sarvekshan 2023, though Bhopal city received a 96% cleanliness score for public toilets, there is still room for improvement. Recommendations for further improvement from the key stakeholders involved in the program are as follows:

**Hygiene and Maintenance:** The cleanliness and maintenance of public toilets are paramount. Establish a rigorous cleaning schedule to ensure that toilets remain clean and well-stocked throughout the day. Regularly replenish toilet paper, soap, and hand sanitiser to maintain hygiene standards and encourage proper handwashing.

**Clear Signage and Technology:** Visible and informative signage is crucial for guiding people to the nearest public toilets. Incorporate digital platforms or smartphone apps to provide real-time information about toilet availability and cleanliness. This technology-driven approach can improve user convenience and help them decide which toilets to use.

**Security and Safety:** Ensuring the safety of users is of utmost importance. Install proper lighting and security measures to create a safe environment around public toilets. Security cameras can deter vandalism and misuse, promoting a sense of security among users.

**Payment Options and Pricing:** To cater to a diverse range of users, offer different payment options. This might include free access or affordable pricing for those with limited financial means. By making toilets accessible to all income levels, you help ensure everyone has access to essential facilities.

**User Feedback and Improvement:** Establish a system for collecting user feedback through suggestion boxes or digital platforms. Act promptly on reported issues and continuously improve services based on user input. This ensures that public toilets meet the evolving needs and expectations of the community.

**Community Engagement and Partnerships:** Engaging with the local community and forming partnerships with nearby businesses can significantly enhance the usability of public toilets. Local volunteers or businesses can assist with maintenance and cleanliness efforts, fostering a sense of ownership and responsibility for these facilities. Additionally, educational campaigns can raise awareness about proper usage and hygiene practices, improving overall toilet conditions.

By implementing these interventions, a city can create public toilet infrastructure that is more accessible, user-friendly, and well-maintained, contributing to a better quality of life for residents and a positive experience for visitors.



## **Result 5: Maintain an integrated and robust monitoring system that will allow evidence-based decision making**

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### **Priority action K: Establishing an integrated monitoring system**

**Baseline Indicators and Measuring Progress:** A set of 50 key baseline indicators across the five key themes of water, sanitation, food, environment, and individual family health have been identified for understanding the current situation in Bhopal through consultations with key stakeholders. Data for only 22 indicators is currently available, aggregated at the city level.

The city taskforce needs to reassess the availability of administrative data for all the indicators and if necessary, conduct primary surveys to establish the baseline for Bhopal city. Each of the indicators has been mapped to the respective Govt. Departments for the same. Collecting the data against these indicators quarterly is highly recommended to monitor the progress closely. However, the periodicity of data collection should be discussed and finalized by the city-level taskforce. The availability of disaggregated data is essential for a focused approach to solving real issues in the city at a particular community or settlement level. Therefore, the data for each indicator must be collected/organized at the lowest level possible. For example, the piped water supply connection data will be available at the Ward level.

**Periodic data evaluation:** Regular data evaluation is vital to understand the progress made by the city. It ensures the quality and reliability of data, identifying errors and maintaining research integrity. Secondly, it supports informed decision-making, aiding institutions in resource allocation and goal tracking. Thirdly, it promotes accountability to funding bodies and the public. Furthermore, it enables continuous improvement in research methods and processes. Additionally, data evaluation helps in long-term planning by identifying trends and patterns. The city should collaborate with such institutions to conduct periodic data valuation processes for suggesting necessary course corrections to the Healthy City program. The potential partners can be institutions such as SHRC (AIGGPA), ISCER, IIFM, and MANIT for specific focus sectors.

**Aggregation of Administrative Data:** There are several government data collection platforms/portals like HMIS, NCD portal, POSHAN tracker, etc., for collecting periodic data on health systems, health outcomes, and disease burden patterns. However, the useability and reliability of these government platforms need to be tremendously improved. Currently, the use is restricted to public facilities only and has to be scaled up to the private sector. Necessary policy and regulatory changes must be brought in to ensure the same. An integrated IT-enabled dashboard to access the data from these portals can be established for Bhopal City to monitor the improvements closely.





To ensure a data driven decision making process and a first step towards creating a transparent system, a web-GIS based dashboard has been developed exclusively for the Bhopal Healthy City program. This dashboard is in its nascent stage and is build on a platform (Web ArcGIS) that is a dynamic in nature i.e. information can be added by any key stakeholders and run various analysis. The key objective is to make this an open data platform for the use of all several stakeholders across the city that has comprehensive information regarding several aspects of the healthy city program and the details on the progress that is being made towards achiving the set goals in this roadmap. Below are a few screenshots of this [platform](#).

Fig 5: Coverage of Primary Health facilities w.r.t. Urban poor settlements

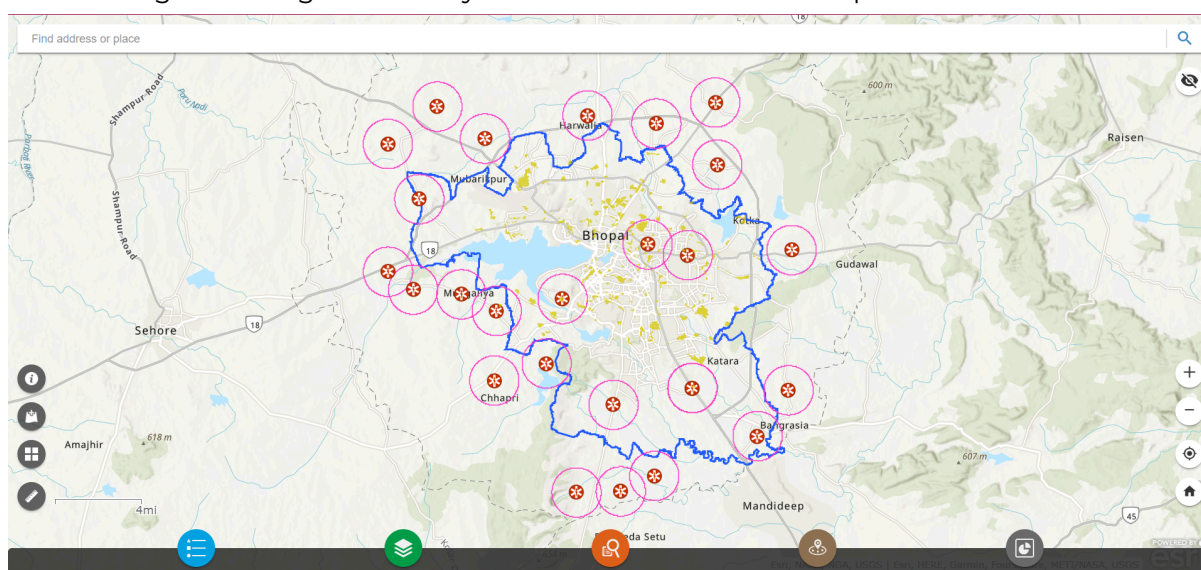
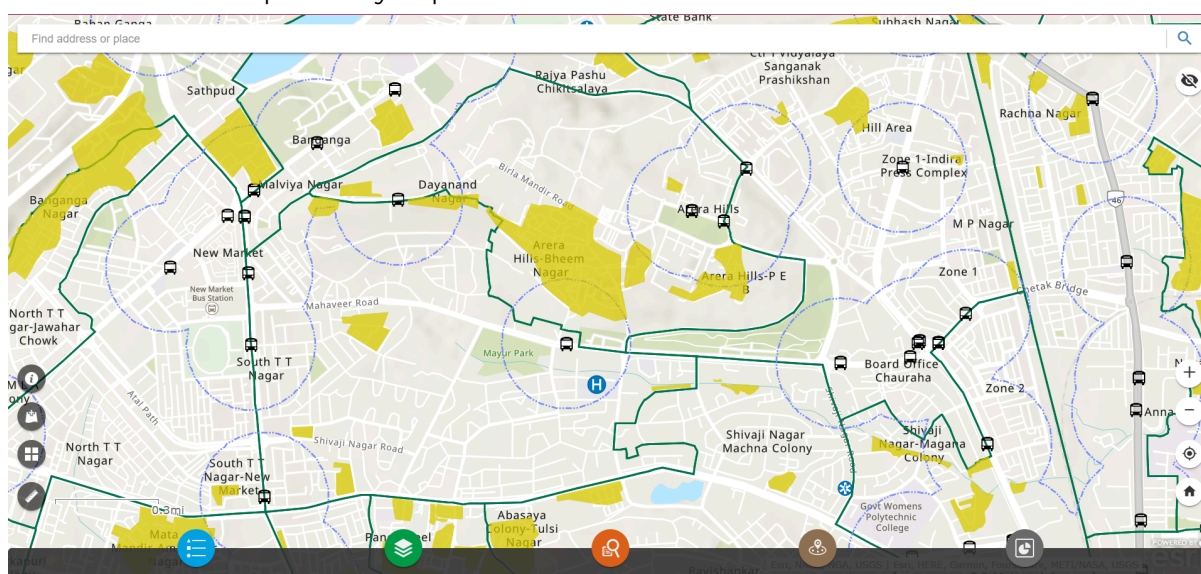


Fig 6: Reachability of public transport stops from urban poor settlements and their proximity to public healthcare facilities in one Ward



### Priority action L: Strengthening surveillance systems

Bhopal has a city-level disease surveillance cell under the central government's program, Integrated Disease Surveillance Program (IDSP). IDSP has been crucial in monitoring and controlling diseases, especially during outbreaks like H1N1 influenza, dengue, and COVID-19. The program's data and surveillance mechanisms are essential for early detection and response, helping prevent disease spread and protect public health. Bhopal should leverage insights from this program to plan for preventive actions. However, the source of this data is limited to information from public health facilities and connected diagnostic entities.

#### Establishing citywide wastewater-based surveillance:

In recent times, especially during COVID, citywide wastewater-based surveillance systems have proven to be very effective in measuring the existing loads, spatially, and projecting them for effective planning and management. The MoHFW, Govt. of India has issued an advisory to the Health Departments of

*Precision Health Platform, Swasti serves as an Early Warning System for COVID outbreaks by detecting and tracking the SARS-CoV-2 virus from different wastewater sources within the city. The surveillance platform works on institutionalising environmental surveillance as part of government response and policy actions.*

*Currently, the program covers Bangalore, Jodhpur, Lucknow, Trichy and Trivandrum, and has started to scale to other Indian cities. The possibility of having the program for surveillance of SARS-CoV-2 and other pathogens in Bhopal is being explored!*

every state to implement wastewater-based surveillance systems in cities for tracking infections effectively. We have been seeing an increasing trend in patients with Antimicrobial Resistance (AMR), particularly in urban areas.

#### Public Observatory:

Most surveillance mechanisms rely on data coming from public facilities or through waste or biological samples. There are efforts to have public participation through regular interactions using different channels to allow people to report on various aspects of their lives including health. This information can then be added to other existing sources to validate or determine patterns over time and improve surveillance systems.

#### Risk Communication and Community Engagement

Information becoming available through surveillance systems must become available back to people, so that they can prepare and mitigate impacts, be it of heat waves, floods or dengue outbreaks. Supporting community health workers (USHAs and ANMs) with digital tools that help them communicate and support



community allows for people to benefit from the surveillance and increase confidence in the public system





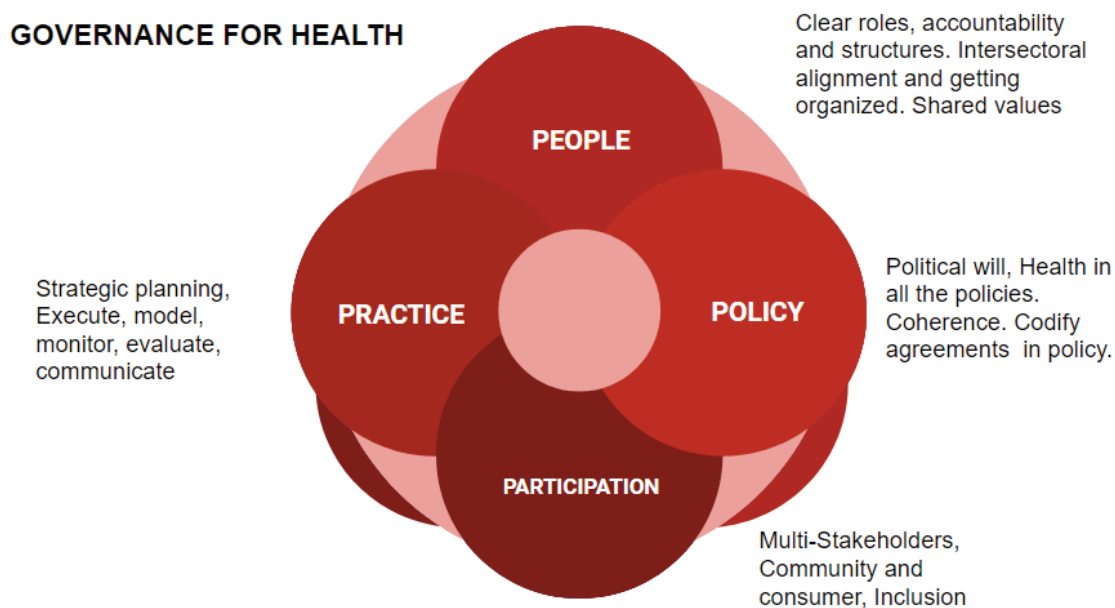


## 5. Governance for the Healthy City

Effective health governance goes beyond healthcare, integrating "health" into all government activities to improve overall well-being. Global experiences highlight the importance of political will, collaboration across sectors, and community involvement for a healthy population. While there's room for improvement, Indian cities are making strides in healthcare access. The availability of healthcare facilities has increased significantly in recent years. Schemes like Ayushman Bharat (AB-PMJAY) aim to provide health insurance to over 500 million Indians. While enrollment is ongoing, a report by the National Health Agency (NHA) indicates over 217,000 public health facilities have joined the scheme<sup>3</sup>. India has seen a significant increase in the number of hospitals and medical colleges in recent years<sup>4</sup>. Government initiatives promote preventive healthcare through programs like Mission Indradhanush, which focuses on immunization<sup>5</sup>.

However, to ensure continued progress, further efforts are underway to address issues like funding and workforce distribution. To address these, a comprehensive approach is needed, combining strong governance practices, public participation, clear policies, and collaboration between various stakeholders. This framework, including structures for policy, practice, and community engagement, is crucial for a successful "healthy city" program.

Fig 7: Governance framework for Bhopal Healthy City



<sup>3</sup> (<https://pubmed.ncbi.nlm.nih.gov/37378105/>)

<sup>4</sup> (<https://www.europeanhhm.com/articles/the-use-of-artificial-intelligence-for-healthcare-improvement>)

<sup>5</sup> (<https://www.europeanhhm.com/articles/the-use-of-artificial-intelligence-for-healthcare-improvement>).



## 5.1 Working with the existing system: District Planning Committees

Article 243 (ZD) establishes District Planning Committees to consolidate plans from PRIs and ULBs, drafting a comprehensive development plan for the district.

*These committees bridge the gap between Panchayats and Urban Local Bodies, ensuring district-level planning aligns with local needs, growth potential, and budgetary allocations.*

Every district offers specific context (such as topography, climate risks, size), assets (natural resources, organisations, leaders) and challenges (epidemic, service delivery, and community participation) Keeping this in mind, it is important to support each district to comprehend its challenges and opportunities and then evolve a plan that is localised for the district.

Supporting district planning can fast track the process of strengthening district response, based on both

- a. Local and indigenous knowledge and
- b. National and global good practices which include templates, district level data triangulation methods, service delivery rationalisation efforts, climate and topographic details, insights from climate events, service delivery feedback from communities, adding components of work around those who are left behind (e.g. persons who inject drugs or PWID, depending on context).

### Understanding Bhopal's Context:

Bhopal's unique features include its location near lakes, potential for climate change challenges, and historical industrial legacy.

It is important to support District Planning Committees with information around these factors collated from all quarters - academic, scientific, ethnographic people experiences and more to develop localised plans that address Bhopal's specific needs for clean water, air quality, and waste management.

### The 5 axes of Action:

1. People: Building Strong Teams with Clear Roles
2. Policy: Shaping a Healthy Bhopal with Effective Legislation



3. Participation: Empowering Citizens for a Healthier City
4. Practice: Making Health a Reality Through Strategic Implementation
5. Communication and Collaboration: Building a Culture of Openness

*A five-pronged approach to creating a healthier city focuses on building strong teams with clear roles, crafting effective policies, empowering citizens, implementing strategic practices, and fostering open communication and collaboration between all stakeholders.*

*To elaborate:*

### **People: Building Strong Teams with Clear Roles**

**Action:** Establish a Bhopal Health Governance Committee with clear representation from the Bhopal Municipal Corporation (BMC), public health department, environment department, and civil society organizations.

**Outcome:** Defined roles and responsibilities for each stakeholder group within the committee, ensuring coordinated decision-making and implementation.

**What it would look like:** The BMC Commissioner chairs the committee, while the health department leads on public health initiatives. Local NGOs with expertise in waste management or clean water access can provide valuable technical assistance.

### **Policy: Shaping a Healthy Bhopal with Effective Legislation**

**Action:** Develop a multi-sectoral Bhopal Health Policy that addresses key challenges like air and water pollution, waste management, and access to green spaces.

**Outcome:** A cohesive policy framework that incentivizes businesses to adopt sustainable practices and empowers communities to hold the government accountable for health outcomes.

**What it would look like:** The policy could introduce stricter regulations for industrial waste disposal, aligning with national guidelines. It could also mandate the creation of green spaces in every ward, promoting resident well-being and reducing heat stress.

### **Participation: Empowering Citizens for a Healthier City**

**Action:** Vibrant ward committees in Bhopal, ensuring citizen representation and active participation in planning and monitoring health initiatives.

**Outcome:** Increased citizen engagement in decision-making processes, fostering a sense of ownership and improving program effectiveness.



**What it would look like:** Ward committees can conduct surveys to identify priority health concerns in their neighborhoods. They can then collaborate with the BMC to organize clean-up drives or promote healthy living campaigns.

### **Practice: Making Health a Reality Through Strategic Implementation**

**Action:** Pilot innovative approaches in specific Bhopal neighborhoods, such as community-managed composting programs or rainwater harvesting initiatives.

**Outcome:** Evidence-based solutions that can be scaled up across the city based on successful outcomes.

**What it would look like:** Pilot a program in a select ward where residents receive training and support to manage organic waste through composting, reducing landfill burden and promoting sustainable practices.

### **Communication and Collaboration: Building a Culture of Openness**

**Action:** Establish regular communication channels between the Bhopal Health Governance Committee and citizens, using multiple platforms like public forums, social media, and local media.

**Outcome:** Transparent communication fosters trust and encourages citizen feedback, leading to more responsive and accountable governance.

**What it would look like:** Organize monthly public meetings where committee members present progress updates, address citizen concerns, and solicit ideas for improvement. Utilize local radio stations and social media to raise awareness about health initiatives and encourage citizen participation.

### **Summary:**

In this context, the ward coordination committees could become formalized to integrate across the five aspects and provide a platform for citizen engagement. This can also be achieved if all existing resources (people, infrastructure, etc.) that are working well can be utilized and strengthened with a focus on the defined results.

[This can be spearheaded by the city level healthy city taskforce.](#)



## 5.2 Institutional structure

### Forging a Healthy Bhopal: Collaborative Governance in Action *City-level Healthy City Taskforce*

Bhopal's commitment to becoming a "Healthy City" is bolstered by a robust multi-stakeholder task force established in December 2022. Convened by the District Collector and operating under the National Health Mission of Madhya Pradesh, this city-level body brings together government agencies, academic institutions, civil society organizations, and the private sector. These leaders, representing crucial focus areas like water, sanitation, food, environment, and individual & family health, form the backbone of the initiative. Details of the task force composition are provided in Annexure 1.

Through their collaborative efforts, the task force has played a pivotal role in:

- **Identifying City Priorities:** The task force members have facilitated a deep understanding of Bhopal's specific needs and aspirations.
- **Validating Baseline Data:** By collaborating with various government departments, they have ensured the accuracy of baseline indicators, crucial for measuring progress.
- **Building Consensus:** Open dialogue and shared knowledge have fostered a unified vision for a healthier Bhopal.

### Elevating the Vision: A Call for State-Level Collaboration

To further strengthen this initiative, the establishment of a state-level governing body is proposed. This interdisciplinary committee or task force would serve three key purposes:

- **Empowering Swift Decisions:** The committee will address challenges beyond the city-level task force's purview, ensuring timely decision-making.
- **Strategic Guidance:** By aligning with Madhya Pradesh's priorities, the state-level body will provide overarching strategic direction to the program.
- **Scaling Up Successes:** Learnings from Bhopal's journey can be disseminated and implemented in other major cities across the state.

The Secretary/Commissioner of the Department of Health and Family Welfare, Madhya Pradesh government, will lead the formation of this state-level entity.

### Building on Existing Strengths: Exploring Options for State-Level Collaboration

Several options for structuring the state-level governing body are under consideration:

- **Inter-Departmental Committee:** This mirrors the city-level structure, with the Secretary of the Health Department chairing and convening the group.





- **Integration with Smart City Mission:** Leveraging the existing framework of Bhopal's Smart City Mission could offer synergies and enhance efficiency.
- **Dedicated "Healthy City Mission":** The establishment of a separate entity, a "Healthy City Mission" by the Madhya Pradesh government, could provide a dedicated focus on this crucial initiative.

## 5.3 Community Engagement

A strong foundation of community engagement is crucial for Bhopal Healthy City. By creating and empowering these structures, government departments and task force members can become champions for citizen participation. This will ensure residents have a voice in shaping the program, fostering a sense of ownership and ultimately leading to a healthier Bhopal for all.

To do this - it is important to consider the following:

1. Involving Resident Welfare Associations (RWAs) in Planning and Implementation
2. Including Community Organizations (COs), especially from Vulnerable Communities

### Involving Resident Welfare Associations (RWAs) in Planning and Implementation

#### A glimpse into what RWAs are already doing in Bhopal:

<b>Solid Waste Management:</b> Some RWAs in Bhopal have taken initiatives to manage solid waste within their communities. This could involve setting up waste segregation systems, composting bins, or collaborating with waste collection services.	<b>Public Health Awareness:</b> RWAs in Bhopal have organized workshops and awareness campaigns on health topics during COVID-19.	<b>Neighborhood Upkeep:</b> Activities like tree plantation drives, cleanliness initiatives, or promoting water conservation measures led by RWAs on special occasions all contribute to a healthier environment.	<b>Community Mobilization:</b> RWAs in Bhopal play a crucial role in mobilizing residents for health check-up camps, bank led financial literacy camps and more.
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Resident Welfare Associations (RWAs) play a pivotal role in community engagement, as they represent the interests and concerns of residents within a



specific locality or housing complex. To involve RWAs effectively in planning and implementation:

- RWAs can serve as a valuable bridge between the community and project organizers. By regularly engaging with RWAs, project organizers can tap into local knowledge and gain a deeper understanding of the community's needs and priorities. RWAs often have established communication channels and can disseminate project information and updates to residents efficiently.
- Incorporating RWAs in decision-making by inviting their representatives to project planning meetings, workshops, and advisory groups. Their input can help shape the project's direction, ensuring it aligns with the community's vision.
- Collaborating with RWAs on mobilizing community resources and volunteers for project activities. RWAs can help identify local talents and resources, making projects more cost-effective and sustainable.
- Additionally, providing training and capacity-building opportunities for RWA members in project management, communication, and conflict resolution can enhance their ability to participate in planning and implementation processes effectively.

**Including Community Organizations (COs), especially from Vulnerable Communities**

**A glimpse into what COs are already doing in Bhopal:**

<p><b>Healthcare Initiatives:</b> Community organizations in Bhopal often focus on providing healthcare services to underprivileged residents. This includes organizing medical camps, offering free health check-ups, distributing medicines, and raising awareness about hygiene and disease prevention.</p>	<p><b>Environmental Advocacy:</b> Given Bhopal's history of environmental disasters, community groups actively engage in environmental advocacy and awareness campaigns. They work towards promoting sustainable practices, waste management, and pollution control, aiming to protect the city's natural resources and mitigate</p>	<p><b>Education and Skill Development:</b> Many community organizations in Bhopal are involved in educational initiatives, especially targeting children from marginalized backgrounds. They run tuition centers, vocational training programs, and scholarship schemes to enhance</p>	<p><b>Social Welfare Programs:</b> From providing food and shelter to organizing disaster relief efforts, community organizations in Bhopal play a crucial role in addressing social welfare needs. They collaborate with local authorities and NGOs to offer support to vulnerable populations, including the homeless, elderly,</p>
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	<b>future risks.</b>	<b>educational opportunities and empower youth for a better future.</b>	<b>and victims of natural disasters or social injustices.</b>
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Community organizations (CBOs) are instrumental in reaching and engaging vulnerable communities facing unique challenges. To effectively include CBOs:

- Identifying and establishing partnerships with CBOs with a track record of working with and advocating for vulnerable populations. These organizations often have deep-rooted trust within their communities. They can help ensure that marginalized groups have a voice in the planning and implementation of projects.
- Involving CBO representatives in project design, ensuring that the perspectives and needs of vulnerable communities are integrated into project goals and strategies. CBOs can provide valuable cultural and contextual insights that may be essential for the success of initiatives.
- Allocating resources and funding to support CBOs' outreach and capacity-building efforts. This can include grants, training, and technical assistance to enable CBOs to serve their communities better.
- Regularly communicating and collaborating with CBOs throughout the program lifecycle to address issues, provide updates, and gather feedback. This partnership approach ensures that the project remains responsive to the evolving needs of vulnerable communities.

By involving RWAs and partnering with CBOs, projects can benefit from the collective wisdom, resources, and advocacy of the community, ultimately leading to more successful and inclusive outcomes. The city taskforce will need to drive this initiative.

*Ward Committees in urban governance can play a key role in community engagement. The proposal for establishing ward committees in Bhopal was approved by the BMC council in September 2022. Establishing these Ward Committees in the city will help immensely in fostering community engagement and to other aspect of governance at a grassroots level.*



## 5.4. Collaborations

**Collaborating with government research and academic institutions, both government and private can offer numerous advantages when it comes to developing a healthy city.** Here are some key benefits:

- **Access to Expertise:** Research institutions and universities are hubs of expertise in various fields, including urban planning, public health, environmental science, and more. Collaborating with these institutions provides access to a wide range of knowledge and skill sets that can be valuable in addressing complex urban challenges related to health.
- **Data and Research Resources:** Government research institutions often have access to extensive data and research resources that can inform evidence-based decision-making. Academic institutions conduct research that can generate valuable insights into urban health issues and solutions. Collaborating allows you to leverage these resources for informed policy and project development.
- **Interdisciplinary Approaches:** Academic institutions often promote interdisciplinary collaboration, bringing together experts from diverse fields to tackle complex issues. This approach is particularly beneficial when addressing the multifaceted nature of creating a healthy city, where factors like urban planning, healthcare, transportation, and environmental sustainability intersect.
- **Innovation and Technology:** Universities and research institutions are often at the forefront of technological advancements and innovation. Collaborating with them can help cities access cutting-edge technologies and solutions for improving health outcomes, such as smart city technologies, telemedicine, and data analytics.
- **Policy Development:** Government research institutions can assist in developing evidence-based policies and regulations that promote health and well-being in urban areas. Academic institutions can research to evaluate the effectiveness of policies and suggest improvements.
- **Knowledge Transfer:** Collaborating with academic institutions can facilitate knowledge transfer and capacity building within city governments and other stakeholders, helping them understand and address health-related challenges independently.

*Partnering with government research institutions and academic institutions, both government and private, like AIGGPA, EPCO, IISER, MANIT, SPA Bhopal, IIFM, and other relevant organizations can provide cities with valuable*



*resources, expertise, and support to develop and implement effective strategies for creating a healthier urban environment.*

*To formalize collaborations, the state/city level governance structures created for the Bhopal Healthy City program could have a Memorandum of Understanding in collaborating across key areas of interest with each institution.*

## 5.5. Communications strategy

A city-wide communications strategy is essential for a successful healthy city program.

It plays a pivotal role in informing and engaging citizens, making them aware of the program's goals and encouraging active participation.

This strategy also promotes behavior change, encourages data collection through crowd-sourcing, and ensures transparency, ultimately fostering a sense of ownership and responsibility among the community.

Additionally, it helps in addressing crises, building partnerships, and ensuring inclusivity, making the program more sustainable and effective in the long run.

*In summary, the communication strategy is the bridge that connects the city government, urban planners, and the community, facilitating the implementation of health and sustainability initiatives in the city.*

Envisioning Bhopal Healthy City program to be a citizen driven movement (*Jan Andolan*), a draft strategy/communication plan for the Bhopal Healthy city program has already been developed which needs to be reviewed and finalized by the city taskforce for its finalization and implementation through the members of the taskforce and other channels.

Some of the key activities suggested to promote understanding and encourage community/public participation are described below.

- **Public Campaigns:** Launch extensive campaigns through various media channels (TV, radio, social media, and billboards) to inform citizens about the healthy city program, its objectives, and the benefits of participation.
- **Community Workshops and Events:** Organize community workshops, seminars, and events to educate citizens about healthy practices, such as healthy eating, urban farming, waste segregation, and traditional medicine.



These events should also encourage participation and provide practical guidance.

- **Regular Updates:** Maintaining a dedicated website and social media channels to provide regular updates on the program's progress, events, and success stories. These platforms can also serve as feedback channels for citizens.
- **Mobile Apps and Crowdsourcing Tools:** Developing user-friendly mobile apps and digital platforms for data collection and crowd-sourcing. Encourage citizens to report issues related to waste segregation, lake protection, or health practices through these tools.
- **Community Engagement Platforms:** Establishing online forums or community engagement platforms where citizens can discuss program-related topics, ask questions, and share their experiences and suggestions.

### Insights to Action: What data from Bhopal tells us to do

**Leveraging Local Media:** Data from the Ministry of Information and Broadcasting (MIB) shows that Bhopal has a high television penetration rate (over 80%) [1]. Public service announcements and locally-produced content focused on Bhopal's health challenges and program goals can be highly effective.

**Social Media and Mobile Apps:** Bhopal has a growing internet user base. A 2021 report by IAMAI suggests high mobile phone ownership [2]. Develop a user-friendly mobile app for reporting sanitation issues, promoting healthy practices, and gathering feedback – similar to initiatives in Surat and Pimpri Chinchwad that have shown positive results.

**Partnerships with RWAs:** As discussed earlier, Resident Welfare Associations (RWAs) play a crucial role in Bhopal. Partnering with them can create a network of community champions who can disseminate information, organize workshops, and encourage citizen participation. Data on RWA activity levels in different neighborhoods can help target outreach efforts.

Sources:

[1] Ministry of Information and Broadcasting (MIB): <https://mib.gov.in/>

[2] IAMAI: <https://www.iamai.in/>

- **Behavior Change Campaigns:** Designing behavior change campaigns that utilize persuasive communication techniques to encourage healthy practices and sustainable behaviors. Use success stories and testimonials to inspire citizens.
- **Multilingual Communication:** Ensuring that all communication materials are available in multiple languages (Hindi & English) to reach a diverse population and promote inclusivity.





- **Partnership Building:** Collaborating with local businesses, non-profits, and community organizations to enhance the reach and effectiveness of communication efforts. These partnerships can also involve joint campaigns and events. Example: Collaboration with MPT to promote healthy food options.
- **Public Consultations:** Conducting regular public consultations to gather input and feedback from citizens. This can involve town hall meetings, surveys, or online polls, making citizens feel that their opinions matter.
- **Educational Programs in Schools:** Implementing educational programs about healthy practices and sustainability in schools. Engaging students can lead to behavior changes in families and the broader community.

#### **Remember to:**

**Focus on Specific Needs:** Analyze local health department data to identify Bhopal's most pressing health concerns. For example, if data reveals a high prevalence of diabetes, tailor campaigns to promote healthy eating and physical activity.

**Disseminate Success Stories from Bhopal:** Local success stories can be powerful motivators. Partner with local hospitals or NGOs to identify individuals who have adopted healthier practices and showcase their journeys to inspire others.

## 5.6. Monitoring and Evaluation

Bhopal's Healthy City Program hinges on Monitoring and Evaluation (M&E) for success. M&E ensures resources are well-spent, the program stays on track, and citizens benefit. Here's why M&E matters:

- **Accountability and Efficiency:** M&E tracks program effectiveness and identifies areas for improvement, ensuring resources are used wisely.
- **Data-Driven Decisions:** M&E provides evidence to support informed program adjustments.
- **Long-Term Impact:** M&E assesses progress towards long-term goals, ensuring the program delivers lasting benefits.

To monitor Bhopal's program, 50 key indicators across focus areas have been identified (details in Annexure 1). Baseline data collection, a crucial first step, will be led by relevant government departments with support from research institutions and local partners. Regular program evaluations will complement ongoing monitoring.



By prioritizing M&E, Bhopal's Healthy City Program leverages data to drive progress and create a healthier future for all citizens.

**The aforementioned data led approach serves three crucial purposes:**

1. **Accountability and Transparency:** The collection of data against 50 selected indicators on a quarterly or half-yearly basis ensures that government departments responsible for program implementation remain accountable to the public. It fosters transparency in the use of resources and the progress made.
2. **Evidence-Based Decision-Making:** Evaluation provides the data needed for decision-makers to gauge the impact of the program. This data-driven approach enables informed decisions on resource allocation, policy adjustments, and course corrections.
3. **Continuous Improvement:** The Healthy City Program is a dynamic initiative that evolves with changing needs and circumstances. Evaluation helps identify weaknesses, gaps, and areas for improvement. This feedback loop, especially driven by community based monitoring, is essential for ongoing program enhancement.

**The evaluation process within a Healthy City Program is a multifaceted effort that involves several key activities:**

1. **Data Collection:** Government departments responsible for the program's various sectors must consistently collect data against the selected indicators. This data includes information on water quality, sanitation facilities, food accessibility, environmental conditions, and family health.
2. **Data Analysis:** Collected data needs to be rigorously analyzed to identify trends, patterns, and areas where the program is succeeding or falling short. This step requires expertise in data science and statistics.
3. **Performance Assessment:** The evaluation process involves assessing the performance of the program against predetermined benchmarks and goals. Are we meeting the targets set for improved water quality, sanitation, and family health? This assessment is a critical part of the process.
4. **Independent Evaluation:** An annual independent evaluation, conducted by either a government agency or a private institution, brings an unbiased perspective to the table. This independent body can review the data, assess program effectiveness, and offer recommendations for course corrections.
5. **Feedback Integration:** The feedback generated through evaluation should be actively integrated into program management. This involves



communicating findings and recommendations to government departments and decision-makers responsible for the program.

6. **Stakeholder Engagement:** Involving the community and stakeholders in the evaluation process is essential. Their perspectives and experiences can provide valuable insights into the program's impact on the ground.
7. **Policy Adjustment:** Based on the evaluation results, policymakers can make necessary adjustments to the program, such as reallocation of resources, changes in strategies, or even the introduction of new initiatives to address identified gaps.

Evaluation is not merely a bureaucratic exercise; it is the lifeblood of a Healthy City Program. It ensures that the program remains on course, accountable, and adaptable to the evolving needs of the city and its residents. The collaborative effort of government departments, independent evaluators (as described in the Governance section above), and engaged stakeholders paves the way for healthier, more vibrant, and sustainable cities.

**In the journey toward a healthy city, evaluation is the compass that keeps us on the right path, steering us toward the ultimate goal of improved well-being for all.**

### 5.6.1. Data and Technology

In the contemporary context of urban development, the role of data and technology in fostering a healthier and more sustainable urban landscape is pivotal. These innovative tools can revolutionize urban planning, public health, and environmental monitoring. The data and technology use immensely help in establishing transparency as a foundational principle of the healthy city program. All stakeholders, including the public, have access to information related to the program's goals, progress, and decision-making processes.

The Government of India, through its flagship program, Digital India Mission, has launched several initiatives. Aligning with the National Digital Health Mission (NDHM) and the Smart Cities Mission is complex but would be transformative for the program. Integration with Smart Cities initiative is a promising opportunity as Bhopal comes fifth out of the top 75 smart cities in India indicating excellence in governance, built environment, social aspects, mobility and other such categories. The convergence of these elements stands as a cornerstone in successfully implementing the Healthy City program for Bhopal and the future.

**Some of the key activities proposed under this program are as follows:**



### **Integrating with NDHM and Smart Cities Mission**

- Align the Healthy City program goals with the goals and objectives of the NDHM and the Smart Cities Mission to access their resources, expertise, and funding. This can be reputed through the Smart City Corporation of Bhopal, which functions under the Urban Development Department.

### **Developing an Interconnected IT Infrastructure**

- Create a unified IT infrastructure that connects existing government platforms, healthcare providers, and urban planning systems. This integration should prioritize interoperability and data sharing.
- Leverage the NDHM's Health ID platform to enable secure and standardized access to health records and information.

### **Utilizing Emerging Technologies**

- Big Data: Collect and analyze vast amounts of data from various sources, including health records, sensors, and social media, to gain insights into public health trends.
- Cloud Computing: Store and process data efficiently in the cloud, making it accessible to stakeholders while reducing infrastructure costs.
- AI and ML: Implement these technologies to analyze health data for early disease detection and treatment and optimize healthcare resource allocation.
- Satellite Data: Use satellite data for environmental monitoring, disaster management, and urban planning, including identifying areas prone to flooding or pollution.
- GIS Software: Implement Geographic Information Systems to map and analyze data for informed urban planning, infrastructure development, and public health interventions.

### **Public Health Initiatives**

- Telemedicine: Use digital platforms to scale up the existing service to remote and underserved areas.
- Health Information Exchange (HIE): Enable secure health data sharing among healthcare providers and patients.
- Early Warning Systems: Implement AI-based systems to predict disease outbreaks or environmental hazards.
- Mobile Apps: Develop apps for citizens to access health information, book appointments, and report health issues.

### **Urban Planning and Environmental Monitoring**

- Urban Sensors: Deploy IoT sensors to monitor air quality, water quality, traffic, and waste management.
- Data Analytics: Analyze the data collected to improve urban planning, reduce pollution, and enhance environmental sustainability.



- **Disaster Management:** Use satellite data and AI for early warning systems and response strategies in case of natural disasters.

### Community Engagement

- Involve the community through campaigns, public feedback mechanisms, and citizen-driven data collection initiatives.
- Encourage participation through mobile apps and social media platforms.

### Capacity Building

- Train government officials, healthcare providers, and other stakeholders in using emerging technologies and data-driven decision-making.

### Sustainability

- Ensure the long-term sustainability of the program by fostering public-private partnerships, seeking investment from sources like the Smart Cities Mission, and exploring revenue-generating models.

## 5.7. Resources

Bhopal's transformation hinges on a strategic resource mobilization plan leveraging three key areas: human capital, infrastructure optimization, and strategic funding. This chapter details how India's young population and targeted training will unlock government potential. Collaborations with community organizations and citizen engagement through skill development and volunteering will foster collective ownership. The plan further outlines optimizing underutilized infrastructure and attracting private sector investment through Public-Private Partnerships (PPPs). Finally, a dedicated fund management body will ensure transparent allocation of diverse funding sources, including international aid and innovative mechanisms like Social Impact Bonds.

### A Multi-Pronged Strategic Approach to Resource Mobilization for Bhopal Healthy City leverages the powerful trifecta of human capital, infrastructure optimization and strategic funding.

- **Human Capital:** India's vast youth population presents a tremendous opportunity (World Economic Forum, 2023). Targeted training programs will unlock the full potential of government personnel, while partnerships with Community-Based Organizations (CBOs) will inject valuable ground-level expertise. Engaging citizens through skill development and volunteer initiatives fosters collective ownership.
- **Infrastructure Optimization:** A comprehensive infrastructure inventory will identify underutilized assets across departments, leading to potential cost savings exceeding 30%. Public-private partnerships (PPPs) will attract



millions in private capital and expertise for key infrastructure needs, accelerating progress.

- **Strategic Funding:** A dedicated fund management body will ensure transparent allocation and tracking of funds from diverse sources. Needs assessments will guide requests for international funding from organizations like WHO and UN. This complements domestic efforts, including leveraging Corporate Social Responsibility (CSR) funds, philanthropic contributions, and partnerships with local foundations. Crowdfunding campaigns and innovative mechanisms like Social Impact Bonds will further broaden the funding base and attract private investment with measurable outcomes.

*A thorough assessment of the above mentioned aspects need to be carried out by each of the responsible departments and align their budgets, available infrastructure and human resources with the gaps identified in this roadmap document and the proposed actions. This would need to be integrated into the monitoring and evaluation plan for best results.*

**In addition to the strategies proposed above for resource mobilization, to ensure the effective utilization of funds in the pursuit of a Healthy City, it is imperative to not only manage the funding but also engage the community and other stakeholders in the process.**

Below are some key recommendations.

- **Participatory budgeting** - This process will ensure that the needs and priorities of the citizens are taken into account. It can involve community meetings, surveys, and input sessions to gather input on where the funds should be directed within the Healthy City program. By involving the local community in the decision-making process, it fosters a sense of ownership and transparency, as residents witness their ideas and preferences translated into action. The collaborations for governing and implementing the proposed roadmap are to be leveraged in building these two-way transparent systems.
- **Transparent and accountable system for tracking the flow of funds** - Moreover, it is crucial to establish this system not just for state and central government programs but also from international funding sources like WHO, UN, and ADB. Transparency should extend to the reporting of funds received and their utilization, creating an open and accessible financial system.

## 5.8. Risks and Mitigation Strategy

Type of risks involved in implementing the Bhopal Healthy City program and possible mitigation strategies.





<b>Risk Type</b>	<b>Possible Mitigation Strategies</b>	<b>Responsible Stakeholder*</b>
Financial Risk	<ul style="list-style-type: none"> <li>• Careful financial planning and budgeting (integrating into department level PIPs)</li> <li>• Diversify funding sources to reduce reliance on a single source.</li> <li>• Monitor expenses and adjust the budget as needed.</li> <li>• Establish a financial contingency fund.</li> </ul>	State-level Taskforce and Respective Govt. Depts.
Political and Governance Risk	<ul style="list-style-type: none"> <li>• Build bipartisan support for the program.</li> <li>• Develop a long-term strategic plan that transcends political cycles.</li> <li>• Foster strong interagency cooperation and collaboration.</li> <li>• Engage with the community to gain their support.</li> </ul>	State-level Taskforce
Community Engagement and Social Risk	<ul style="list-style-type: none"> <li>• Conduct extensive public outreach and education efforts.</li> <li>• Address concerns and opposition with transparency and empathy.</li> <li>• Ensure that program benefits reach all demographic groups.</li> </ul>	City taskforce and Local partners
Health and Public Safety Risk	<ul style="list-style-type: none"> <li>• Develop contingency plans for responding to public health crises.</li> <li>• Incorporate safety measures and risk assessments in infrastructure projects.</li> </ul>	Dept. of Health (CMHO)
Environmental and Sustainability Risk	<ul style="list-style-type: none"> <li>• Prioritize sustainable and eco-friendly infrastructure development.</li> <li>• Prepare for climate change impacts through resilient infrastructure.</li> </ul>	BMC and EPCO
Data and Technology Risk	<ul style="list-style-type: none"> <li>• Implement robust data security and privacy measures.</li> <li>• Regularly update and maintain technology infrastructure.</li> <li>• Have data backup and recovery systems in place.</li> </ul>	BMC and Smart City Corp.
Economic Risk	<ul style="list-style-type: none"> <li>• Diversify the local economy and reduce reliance on vulnerable sectors.</li> </ul>	State-level Taskforce



<b>Risk Type</b>	<b>Possible Mitigation Strategies</b>	<b>Responsible Stakeholder*</b>
	<ul style="list-style-type: none"> <li>Establish an economic contingency plan for economic downturns.</li> </ul>	
Cultural and Behavioral Change Risk	<ul style="list-style-type: none"> <li>Conduct extensive behavior change campaigns and cultural programs.</li> <li>Engage community leaders and influencers in promoting change.</li> </ul>	City taskforce and Local partners
Legal and Regulatory Risk	<ul style="list-style-type: none"> <li>Collaborate with legal experts to navigate regulatory challenges.</li> <li>Advocate for necessary changes in laws and regulations.</li> </ul>	All Govt. Depts.
Infrastructure Risk	<ul style="list-style-type: none"> <li>Create realistic construction timelines and contingency plans.</li> <li>Budget for ongoing maintenance and repairs of infrastructure.</li> </ul>	All Govt. Depts.
Measurement and Evaluation Risk	<ul style="list-style-type: none"> <li>Establish clear, relevant, and measurable performance metrics.</li> <li>Continuously monitor and evaluate program impact and adjust strategies as needed.</li> </ul>	State-level Taskforce, City taskforce and M&E partners
*Tentative/proposed, to be finalized in consultation with state-level stakeholders and city taskforce		



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## Annexure 1: Bhopal Healthy City Taskforce composition

The list of the members that constitute the Bhopal Healthy City taskforce are mentioned below:

1. The Collector, Bhopal District Administration (Chairperson)
2. The Commissioner, Bhopal Municipal Corporation
3. The CMHO, Department of Public Health & Family Welfare (Convener)
4. The Chief Executive Officer, Bhopal Development Authority
5. The Chief Executive Officer, Bhopal Smart City Corporation
6. The Director, Bhopal Gas Tragedy Relief and Rehabilitation Department
7. The Deputy Director, Department of Horticulture and Food Processing
8. The Deputy Director, Department of Animal Husbandry and Dairying
9. The Deputy Director, Directorate of Town and Country Planning
10. The Assistant Labour Commissioner, Department of Labour
11. The Assistant Superintendent of Police Traffic, Home (Traffic) Department
12. The Executive Engineer, Public Health Engineering Department
13. The Executive Officer, Water Resources Department
14. The Executive Engineer, Pollution Control Board
15. The District Education Officer, Education Department
16. The District Level Officer, AYUSH Department
17. The District Program Officer, Department of Women and Child Development
18. The District Community Mobilizer, MAS, USHA, ASHA
19. The District Level Officer, Department of Food Civil Supplies and Consumer Protection
20. The Deputy Director, Farmer Welfare and Agriculture Development Department
21. The District Level Officer, Social Justice and Disabled Welfare Department
22. The District Coordinator, Jan Abhiyan Parishad
23. The Chief Engineer, EPCO
24. The General Manager, BHEL
25. The President, Govindpura Industrial Association
26. The Medical Superintendent, Gandhi Medical College
27. The Medical Superintendent, AIIMS Bhopal
28. The Medical Superintendent, Hamidia Hospital
29. The Medical Superintendent, Bansal Hospital
30. The Medical Superintendent, Chirayu Hospital
31. The Principal Advisor, SHRC



32. The Senior Specialist Urban Health, WISH
33. The Principal Investigator, Sangath
34. The Director, Vikas Samvad
35. The Secretary, Pragya Social Organisation
36. Representative - Swasti
37. Representative - HSTP





## Annexure 2: Executive Order on City Taskforce formation

### कार्यालय कलेक्टर एवं जिला दण्डाधिकारी, भोपाल (म.प्र.)

क्रमांक 1081/एस.सी.-1/2022

भोपाल, दिनांक 29/12/2022

#### — : आदेश : —

राष्ट्रीय स्वास्थ्य मिशन मध्यप्रदेश भोपाल के पत्र क्र. एन.एच.एम./शहरी स्वा./2022/8237, दिनांक 23.11.2022, के अनुक्रम में भोपाल शहर को हेल्दी सिटी बनाई जाने हेतु निम्नानुसार जिला स्तर पर टास्क फोर्स का गठन किया जाता है :-

क	नाम	पदनाम
1	जिला कलेक्टर, भोपाल	अध्यक्ष
2	आयुक्त, नगर पालिक निगम, भोपाल	सदस्य
3	मुख्य कार्यपालन अधिकारी स्मार्ट सिटी भोपाल	सदस्य
4	कार्यपालक निदेशक, EPCO, भोपाल	सदस्य
5	मुख्य कार्यपालन अधिकारी भोपाल विकास प्राधिकरण	सदस्य
6	संचालक, भोपाल गैस ट्रांसमीटर राहत एवं पुनर्वास, भोपाल	सदस्य
7	पुलिस उपायुक्त (यातायात), भोपाल	सदस्य
8	अधीक्षक, AIIMS भोपाल	सदस्य
9	कार्यपालक निदेशक, BHEL, भोपाल	सदस्य
10	अधिष्ठाता गांधी मेडिकल कॉलेज भोपाल	सदस्य
11	अधीक्षक, हमीदिया हॉस्पिटल भोपाल	सदस्य
12	मुख्य चिकित्सा एवं स्वास्थ्य अधिकारी भोपाल	सदस्य सचिव
13	जिला कार्यक्रम अधिकारी, महिला एवं बाल विकास भोपाल	सदस्य
14	जिला आयुष अधिकारी, आयुष विभाग, भोपाल	सदस्य
15	जिला शिक्षा अधिकारी, भोपाल	सदस्य
16	जिला खाद्य एवं आपूर्ति नियंत्रक, भोपाल	सदस्य
17	कार्यपालन अधिकारी, जल संसाधन विभाग भोपाल	सदस्य
18	कार्यपालन यंत्री, लोक स्वास्थ्य यांत्रिकी, भोपाल	सदस्य
19	क्षेत्रीय अधिकारी प्रदूषण नियंत्रक बोर्ड भोपाल	सदस्य
20	जिला समन्वयक जन अभियान परिषद	सदस्य
21	संयुक्त संचालक, नगर तथा ग्राम निवेश भोपाल	सदस्य
22	संयुक्त संचालक, सामाजिक न्याय भोपाल	सदस्य
23	उपसंचालक, कृषि कल्याण विभाग भोपाल	सदस्य
24	उपसंचालक, उद्यानिकी विभाग भोपाल	सदस्य
25	उपसंचालक, पशुपालन विभाग भोपाल	सदस्य
26	सहायक श्रमायुक्त, श्रम विभाग भोपाल	सदस्य
27	अधीक्षक, बंसल अस्पताल, भोपाल	सदस्य
28	अधीक्षक, चिरायु अस्पताल, भोपाल	सदस्य
29	मुख्य सलाहकार, राज्य स्वास्थ्य संसाधन केन्द्र, (SHRC) भोपाल	सदस्य
30	Principal Investigator संगत, सिविल सोसायटी भोपाल	सदस्य
31	सीनियर स्पेशलिस्ट WISH Foundation, सिविल सोसायटी भोपाल	सदस्य
32	निर्देशक, प्रज्ञा सोशल संगठन, सिविल सोसायटी भोपाल	सदस्य

कमशः.....(2)



// 2 //

क	नाम	पदनाम
33	निर्देशक, विकास संवाद, सिविल सोसायटी भोपाल	सदस्य
34	श्री नीलेश लगरखा, District Community Mobilizer, महिला आरुहया समिति, ऊषा, आशा, भोपाल	सदस्य
35	अध्यक्ष गोविन्दपुरा इण्डस्ट्रीज एसोसिएशन भोपाल	सदस्य

उपरोक्त टास्क फोर्स, भोपाल शहर को हेल्दी सिटी बनाये जाने हेतु कार्य योजना तैयार करेगे।

कलेक्टर  
जिला-भोपाल

पृ.क्रमांक / 1082/एस.सी.-1/2022

भोपाल दिनांक 29/12/2022

प्रतिलिपि :-

- 1- मिशन संचालक एन.एच.एम. भोपाल की ओर सन्दर्भित पत्र के अनुक्रम में सादर सूचनार्थ।
- 2- आयुक्त, भोपाल-संभाग, भोपाल की ओर सादर सूचनार्थ।
- 3- स्टेनो-टू कलेक्टर महोदय, की ओर सूचनार्थ।
- 4- श्री शिवाराम के.एन.वी., स्वस्ति संस्था एवं एच.एस.टी.पी की ओर आवश्यक कार्यवाही हेतु।
- 5- सर्व सम्बंधित ..... की ओर सूचनार्थ/आवश्यक कार्यवाही हेतु।

कलेक्टर  
जिला-भोपाल

