BUILDING HEALTHY CITIES

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Proposed Multisector Healthy City Action Plan: Indore

CONTENTS

ACRONYMS

ANM	auxiliary nurse midwife
ASHA	accredited social health activist
AWW	Anganwadi worker
BHC	Building Healthy Cities
CBO	community-based organization
COTPA	Cigarettes and Other Tobacco Products Act
CRS	citizen reporting system
CURE	Centre for Urban and Regional Excellence
HMIS	health management information system
ICCC	Integrated Command and Control Center
ICDS	Integrated Child Development Scheme
ISCDL	Indore Smart City Development Limited
MIS	Management Information System
MPPCB	Madhya Pradesh Pollution Control Board
MPVHA	Madhya Pradesh Voluntary Health Association
NCD	noncommunicable disease
NGO	nongovernmental organization
NHM	National Health Mission
UPHC	urban primary health center
USAID	United States Agency for International Development
WCD	Department of Women and Child Development

INTRODUCTION

Indore, known as central India's commercial capital, is the largest, most populous city in the state of Madhya Pradesh. Indore was one of the first cities in India to be included in the Prime Minister's flagship Smart Cities Mission in 2015. It is a fast-growing urban center with a population of just under 2 million in 2014 and a 10-year growth rate of about 3 percent (Ayyar and Raju 2017). As its population has grown, so has the number of slum dwellers, who are estimated to make up 30 percent of the total city population (KPMG 2017). These factors have made Indore diverse in terms of housing, income level, and health needs. Indore has the good fortune of a citizenry with immense pride in their home. This is an asset to be built up; citizen pride, knowledge, and engagement are powerful tools for positive change.

Food safety is a priority issue in Indore, as the city is known for its delicious street food. Although safe food preparation has been improved, high consumption of calorically dense, nutrient-poor foods contributes to an increase in obesity and lifestyle diseases like diabetes. This overlies an existing burden of micronutrient deficiencies in the city; across urban Indore, 24 percent of women and 21 percent of men are overweight, and 46 percent of women are anemic (International Institute for Population Sciences 2017). Other considerations relevant to healthy lifestyles include inadequate access to antenatal care (61 percent of women had four or more antenatal care visits), stunting of children under age five (39 percent), and low levels of cancer screenings (less than 1 percent) (BHC project 2020; BHC project 2018).

Indore's physical environment is also rapidly changing. In 2021, Indore was recognized as the cleanest city in India for the fifth consecutive year, based on major improvements to waste management and sanitation (*The Indian Express* 2021). In 2021, it was also recognized as the first Water Plus city in India due to improvements in water access, public toilets, and wastewater management (News18 2021). While the city has experienced modest improvements in air, noise, and water pollution, environmental risk factors for diseases remain (Borkhade 2016).

The city has improved its information systems by developing an Integrated Command and Control Centre (ICCC), a central system that consolidates data from multiple sectors and services. The city has also introduced citizen reporting systems such as the Indore 311 app and CM Helpline. However, a lack of collaboration and sharing of data across sectors remains a persistent issue (Assi et al. 2018).

The United States Agency for International Development (USAID) funded Building Healthy Cities Project (BHC) is a 5-year (2017-2022) learning project that is grounded in a systems approach, with a focus on the social and environmental determinants of health, which span areas well beyond the health sector. In Indore, BHC partnered with Indore Smart City Development Limited (ISCDL) to support their goal of making the city healthy and livable for all. As part of this effort, BHC has developed this Action Plan to summarize all findings and recommendations from our research and stakeholder discussions to support sustainable change across the city system.

Purpose of This Proposed Plan

The purpose of this document (the "plan") is to first summarize the evidence, consultations, and collaboratively generated insights facilitated through the BHC project over the course of four years in Indore (2018-2022), as a partner to ISCDL. The second purpose of this document is to put forth a set of recommended actions that respond to the analysis that will serve as the basis for discussion amongst the Multi-Sector Smart Health Working Group members as they develop a five-year Healthy Indore Action Plan to be ratified and implemented by those member sectors.

BHC has supported discussion and revision of this proposed plan through the following timeline. The remaining steps are for the city and its partners to complete, with the hope that this plan becomes a formal city strategy:

Steps Taken to Finalize Action Plan	Date Completed
Convene Multi-Sector Smart Health Working Group (led by ISCDL CEO) to present proposed actions, facilitate initial feedback, identify missing stakeholders and actions.	August 2021
Follow up with any sectors and partners to complete feedback.	August 2021
Break plan down to sector-level responsibilities to help inform FY2022 government workplanning.	September 2021
Complete Kaya Kalp pilot to test acceptability of actions with communities.	January 2022
Work with sectors and donors to develop estimated costs of implementing full package of actions and complete an illustrative monitoring and evaluation framework.	February 2022
BHC presents completed Action Plan (unratified) to District Collector for use in city planning.	March 2022
Ratify Action Plan in agreement with sectors and development partners.	To be done by city
Finalize Monitoring and Evaluation Framework based on final city implementation timeline.	To be done by city

While BHC has handed off this final proposed Action Plan to the city, the project will continue to support match-making with private funders on specific actions that do not have sufficient city or donor support through May 2022.

How This Proposed Plan Was Created

This plan is the cumulative result of a range of primary and secondary research, and a participatory process of stakeholder consultation and co-creation in Indore facilitated by the USAID-funded BHC project. BHC's goal was to test feasible options for healthy urban planning that reflect the following core values:

1. Develop a common understanding across multiple sectors and stakeholders of ways to improve overall health and quality of life in Indore;

2. Strengthen community engagement in municipal decision-making related to urban health-related services; and

3. Support use of urban health-related data for planning and decision-making.

Partnering closely with ISCDL in Indore, BHC has engaged with sectors that contribute, directly or indirectly, to citizens' health and quality of life. This multisector engagement in Indore has included the following sectors:

- Health
- Urban Planning and Development (Indore Municipal Corporation and ISCDL)
- Information and Communications (Integrated Command and Control Center)
- Education
- Waste Management (only involved in interviews during baseline)
- Pollution Control Board
- Women and Child Development
- Food Safety and Drug Administration Department
- Traffic and Road Safety

A selection of the activities BHC has supported in concert with city offices and partners are summarized in Table 1 below. Full details are provided in Annex A.

Table 1. Summary of BHC Indore Activities

Year	Activity	City Offices Involved
2017-18	Noncommunicable disease (NCD) risk factor and environment survey	Department of Health and Family Welfare, Indore Municipal Corporation, Indore Smart City Development Limited
2017-18	Health needs assessment	Department of Health and Family Welfare, Indore Municipal Corporation, Indore Smart City Development Limited
2017-18	Data use and access assessment	Indore Smart City Development Limited
2017-18	Political economy analysis	Indore Municipal Corporation, Indore Smart City Development Limited
2018	Analysis of trends in air pollution in Indore City	Madhya Pradesh Pollution Control Board
2018	Training and capacity building of city officers on Cigarettes and Other Tobacco Products Act (COTPA)	Indore Smart City Development Limited

2018	Hospital management information system support for PC Sethi hospital	Department of Health and Family Welfare, Indore Smart City Development Limited
2018	Assessment report on functionality of urban primary health centers of Indore City	Department of Health and Family Welfare, Indore Smart City Development Limited
2019	Multisector convening ("Smart Health Working Group")	Indore Smart City Development Limited, Department of Health and Family Welfare, Department of Women and Child Development, Madhya Pradesh Pollution Control Board, Department of Education
2019	Assessment of citizen reporting systems in Indore - 311 app and CM helpline	Indore Smart City Development Limited
2019	Sensitization training on food safety and healthy foods	Department of Health and Family Welfare, Indore Municipal Corporation, Indore Smart City Development Limited, Food Safety and Standards Authority of India
2019- 2022	Health promoting schools	Department of Education, Department of Health, Indore Smart City Development Limited
2019- 2022	Participatory research in urban poor communities	Indore Smart City Development Limited
2020-2022	"Increasing community participation in air pollution mitigation in Indore City" study	Madhya Pradesh Pollution Control Board, Indore Smart City Development Limited
2021	Kaya Kalp pilot initiative	Department of Health and Family Welfare, Indore Municipal Corporation, Indore Smart City Development Limited, Madhya Pradesh Pollution Control Board, Department of Education
2021	Capacity building on data integration and use	Indore Smart City Development Limited, Integrated Command and Control Center
2021	Rapid user feedback surveys to understand citizen experiences regarding road safety and food safety	Department of Health and Family Welfare, Indore Smart City Development Limited, Department of Road Traffic and Safety
2021	Assessment of malnutrition in under-5 children and community nutrition support systems	Department of Health and Family Welfare, Department of Women and Child Development

In order to organize and make sense of the enormous amount of information gathered (see Annex A for a full list of research reports) and make this an inclusive and participatory process, BHC convened a series of multi-stakeholder conversations utilizing systems thinking tools and practices to grapple with the complexities and interrelated nature of

urban challenges. These systems-oriented conversations produced visual tools that highlight the patterns and relationships underlying Indore's challenges, and generated insights with greater clarity on how to leverage the city's greatest opportunities while also addressing or mitigating key obstacles (see Figure 1).

Figure 1. Systems Mapping Stages

Theory of Context (2018)	Theory of Change (2019)	Theory of Action (2020)
• Data organisation and analysis • Data Validation Workshop • Theory of context map	• Socialising the map- Community town hall meetings, Multi-sectoral and partners meeting • Leverage Workshop • Theory of change map	• Theory of action workshop • Development of thematic coherent actions
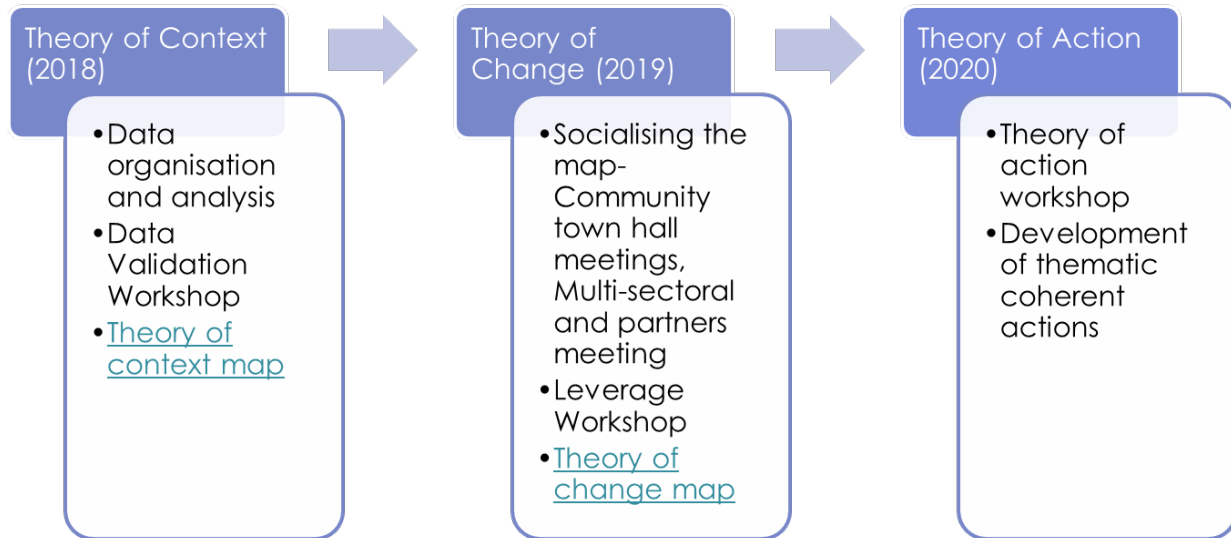
Goal of This Action Plan

A good plan for urban development begins with a clear vision for what a vibrant, healthy urban system would produce for its citizens and environment. The World Health Organization defines a healthy city as one that is continually creating and improving those physical and social environments and expanding those community resources which enable people to mutually support each other in performing all the functions of life and developing to their maximum potential (WHO 1998).

Indore's Smart City goal statement is "Imagining Indore to Inherit, Innovate, Include, Incubate and Invest" for "an ideal world-class smart commercial metropolis that thrives on investment opportunities, incubating business and ideas, rich inheritance and inclusive development." Reframing this goal statement as an aspirational "healthy city system" is what in the BHC systems approach we call the "Guiding Star." This Guiding Star is stating a mutually agreed upon goal, co-developed with Indorean stakeholders, and it is the starting place for developing a common understanding. The mutually agreed upon goal statement for Indore is:

> *"Indore, a healthy and livable Smart City for all, with decreased bad health outcomes, improved air quality, increased equitable access to health care and waste management services."*

BHC has put together this Action Plan as a roadmap for how to achieve this goal. It will provide the **roles and responsibilities** for each action; an estimate of the **costs** of implementing each action; **suggested non-governmental partners** for these actions; and suggested monitoring and evaluation **indicators** for the actions.

BACKGROUND

Defining the Context of a Healthy Indore

BHC engaged some 247 stakeholders to bring out a well-rounded mutual understanding of the context for a healthy Indore (Annex B provides the full list of stakeholders consulted). This number includes the 38 city officials and workers from different government departments such as Health and Family Welfare, ISCDL, Women and Child Development (WCD), Indore Municipal Corporation (IMC), Education, Madhya Pradesh Pollution Control Board (MPPCB), National Health Mission (NHM), etc. Based on the evidence collected by BHC and the feedback from a range of Indore multisector stakeholders, there is a tension at the heart of the Indore context. This tension comes from Indore's great success as a city, which has spurred rapid growth as people from around the country seek opportunities there, and the pressure that this growth creates on municipal systems when population outpaces service delivery capacity. Figure 2 visualizes this tension.

Figure 2. Tension at the Center of Indore's Success
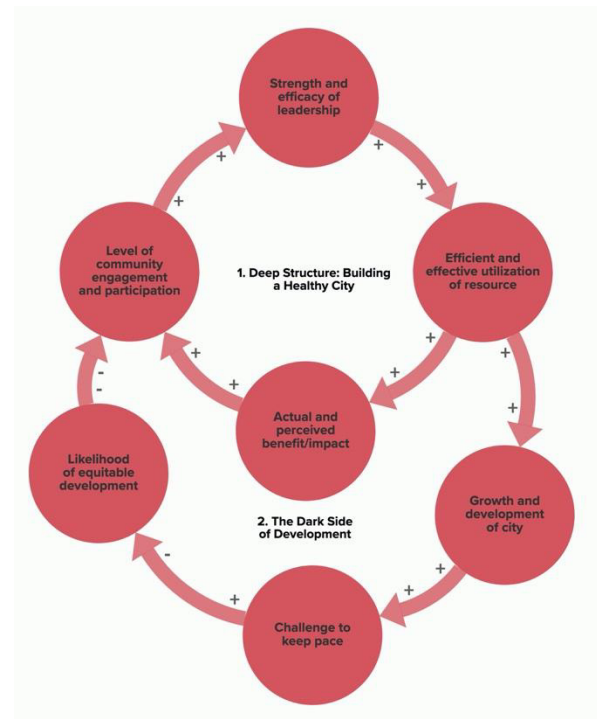
A full Indore Systems Map is available to explore all the context-related evidence used to define this Action Plan. It can be easy enough to say that Indore simply needs to catch up their service provision to the expanding demand and population growth; but Indore is changing as it grows as well, so it is not just about scale. The city is evolving in multiple ways, including new forms of transport, growth of new forms of industry (including those that require new technological infrastructure), changing patterns of resource use and recycling, and a recognition of the need to preserve culture and heritage through urban renewal. All of these changes are happening in the context of interconnecting patterns of behavior, knowledge, and practices that may help or hinder these growth efforts. Some of these key patterns uncovered through BHC's systems mapping process are the following:

- **Leadership, Governance and Financing:** Any new actions to help Indore grow in a healthy way will need to work with the behavior, knowledge, and practices related to accountability and management in the governance structures, which are defining, developing, and enforcing policies, procedures, rules, guidelines, etc., and continually monitoring their proper implementation. It also means efficient use of available resources and accountability over those resources. Without these structures in place and enforced, there is an opportunity for ego,

personal priorities, and fear of social/political consequences to negatively influence the way programs are implemented, evaluated, and funded. Creating opportunities to link sectors, data, and citizen feedback into leadership and governance of projects will increase the ability of programs to achieve their desired impact, and reduces the risk to leaders of programs being poorly received by citizens. Indore has shown tremendous leadership and governance in the successful implementation of Clean India Mission in the city.

- **Information Systems:** Any city, in order to grow in a smart way, needs to have a well-established information system. Information systems are an integrated set of components for collecting, storing, and processing data for providing information. The purpose of these information systems is to use raw data and turn it into useful information that can provide evidence and correct knowledge for decision-making. The most common type of information system used in the government departments is the Management Information System (MIS). Accurately entered, up-to-date, and complete data is one of the major issues which was observed in the system. Factors like the fear of consequences from not meeting goals, staff/equipment capacity, and low expectations for external data reporting all result in a limited access to quality data. Without this data, program planning and resource allocation is not based on accurate and complete information, and the potential for positive impact is decreased. Limited multisector collaboration may affect the ability of the city administration to effectively target resources to the highest need areas. This adds to the strain of growth on the system and limits the potential for whole-city healthy development. A real bright spot in this area is the effort by the city leadership to develop an Integrated Command and Control Center (ICCC) to link and integrate data systems across sectors. Inclusion of health and health care related data systems would be a step forward to assess the effect of various developmental initiatives on the health of the citizens of Indore.

- **Essential Service Delivery and Workforce:** Any forward planning by the city administration needs to ensure that basic needs of the citizens are being planned and provided for in an equitable way for healthy growth and development of Indore City. Essential services are those services which are absolutely necessary for citizens to survive and interruption of which would impact their life, health, and personal safety. These include health services, provision of clean and safe water, food, sanitation, etc. Across many sectors related to health in Indore, but especially within the health sector, we heard that limited or uncertain funding creates an unwillingness to spend on needed staff, training, equipment, and infrastructure improvements. When staff and facilities are not able to operate to their highest potential, the quality of care suffers and both clients and workers may opt to avoid the public sector to seek care or employment in the private sector. In the health sector in particular, this often means care shifts to a focus on acute medical care ("treatment"). This reduces the impact of health promotion and preventive health care efforts and ultimately results in decreased population health. In the waste/sewage sectors, this can mean while short term pick up is addressed, infrastructure issues go unaddressed for too long and communities experience significant negative outcomes from backed up and broken drains, or insufficient drainage that leads to illness, injury, and barriers to safe transport.

- **Community Infrastructure and Education:** Most of the program and policy planning is done by policy makers and does not involve those who are going to be benefitted by it. Citizen engagement is a form of interaction between citizens and the government that can happen at any stage of the development or implementation of a government policy or program. The ability to engage the population in healthy development efforts is recognized as the key to achieving program impact goals and enabling strong leadership. When community members are not able to meet basic needs, access critical programs and information, or are shown that their participation is valuable, their focus remains elsewhere. When programs are not informed by community input, they are unlikely to be successful and, in addition to wasted time and resources, high-risk populations continue to be excluded from the benefits of city development. With some segments of the population unable to achieve good health and productivity, the growth and development of the city as a whole is undermined.

Looking across all these areas and the current context of Indore, the key Obstacles and Opportunities that will need to be addressed by this Action Plan in the next five years to achieve the goal statement of a healthier Indore are described in Table 2 and shown in Figure 3.

Table 2. Main Obstacles to and Opportunities for a Healthier Indore

Obstacles	Opportunities
Accountability, Governance & Financing	
Rapid turnover in key staff positions in government. Multiple roles and responsibilities given to key staff.	Active and dynamic leadership. Effective program implementation and introduction of new programs.
Limited cross sector coordination.	Development of Multi-Sector Smart Health Working Group by BHC and ISCDL.
Financing of activities involving multiple sectors is difficult due to limited flexibility of utilizing funds.	Indore being a focus of the State and receiving investments to support it becoming a model Smart City. Flexible financing model of ISCDL.
Suboptimal supervision in some sectors due to multiple assignments, particularly health, WCD and education, needs more support. They are utilized beyond their scope of work, e.g., during elections and surveys.	Introduction of technology to monitor workforce for e.g., applications with geolocation for attendance of the staff, and momentum towards paperless data management.
The capacity to spend at the sector level is affected by late disbursements and long procurement processes.	When regulations and policy are written, they are usually strong (e.g., tobacco, alcohol, traffic, air quality), but enforcement of them can be derailed by financial/social incentives.

Essential Service Delivery and Workforce	
The essential service delivery centers such as urban primary health centers (UPHCs), Anganwadi centers, and schools located in and around the urban poor communities, have poor infrastructure and inadequate human resources.	New appointment of doctors through NHM and development of health infrastructure through ISCDL.
	Majority of UPHCs are in leased spaces, which gives city flexibility to move those with unsatisfactory facilities, or to where population shifts require. Madhya Pradesh is also testing public-private clinic models that may have lessons for Indore.
Urban poor communities lack the good quality basic services, e.g., health care, piped water supply, access to clean cooking energy, limited access to sewerage system, and concrete pavements in slums.	Tremendous efforts by the city administration in the implementation of Clean India Mission and in management of COVID-19 in the underserved communities.
	Service delivery framework developed to deliver waste management services reaches most informal households, and has been successfully used to add on services such as food distribution during COVID-19 pandemic.
Lack of awareness among teachers regarding school health policies.	Implementation of Health Promoting Schools program which could be implemented in all schools in Indore.
Poor communication between health services personnel and teachers about the design and implementation of health-related curricula. This creates barriers in management of school-supported health campaigns.	
Inadequate number of sports teachers and lack of playgrounds to promote physical well-being at government schools.	
Information Systems	
Multiple national data systems are used by each sector. Limited inter-sector access to quality, timely, and integrated data.	Investment in data integration in ICCC for data management, sharing, and decision-making.
Most of the city's data is being collected by frontline workers - accredited social health activists (ASHAs), Anganwadi workers (AWWs), and auxiliary nurse midwives (ANMs) - and government schoolteachers. Due to existing workload, additional paperwork, and in absence of proper training, the data collected might not be accurate.	Introduction of data collection and sharing apps and websites such as ANMol (for ANMs), ICDS-CAS for AWWs, and Samagra portal for schools.
Health MIS is still largely paper-based, but the city has piloted digital HMIS solutions. Private sector health data will need to be integrated into any cross-city HMIS solution.	

Limited use of citizen reporting systems (CRS) particularly by urban poor communities.	Indore has two CRS in place (Indore 311 and 1081 CM helpline) and is trying to create awareness among citizens about using them.
Limited use of available evidence for various development activities in various sectors. E.g., evidence regarding gaps in infrastructure of health centers and schools, lack of workforce, social environment, etc.	Indore City has created a benchmark among other Smart Cities in India by successfully using technology and real time data in waste management and transport services.
Community Infrastructure and Education	
Suboptimal utilization of essential services such as health services, nutrition services, policies such as Integrated Child Development Scheme (ICDS), Pradhan Mantri Matru Vandana Yojana, Ujjawala, etc. by citizens due to lack of awareness.	The government has formulated various programs and groups to make people more aware about its schemes and policies. Such as Mahila Arogya Samitis, health and nutrition days, and information, education, and communication materials for public awareness. It needs to be further strengthened in all sectors.
Lack of healthy lifestyle among citizens (unhealthy eating habits, lack of physical activity, tobacco use, etc.)	City has gardens and open gyms, and organizes events like raahgiri, marathons to make people aware about healthy lifestyle. Anti-tobacco laws are in place (need to ensure implementation).
Limited understanding among citizens about the impact of social and environmental factors on human health.	City's efforts to generate public awareness regarding the impact of social and environment factors on human health, such as installation of display boards at strategic locations which show real time air quality data, information, education, and communication materials regarding harmful impacts of tobacco and air pollution, etc.
Addiction issue among youth in urban poor communities of Indore.	Implementation of Health Promoting Schools program in government schools. Public awareness drives by nongovernmental organizations (NGOs) and city government.
Limited awareness regarding government maternal and child health services such as supplementary nutrition provided by Anganwadi centers, counselling services for mothers regarding nutrition in the first 1,000 days, etc.	ICDS is already there to address the issues. It needs to be strengthened.
Use of biofuels for cooking by urban poor communities.	Prime Minister's flagship Ujjawala scheme is already there. More awareness around it and enforcement is required.
Lack of green spaces and playgrounds around urban poor communities.	

Figure 3. Summary of Obstacles and Opportunities across the Context Map
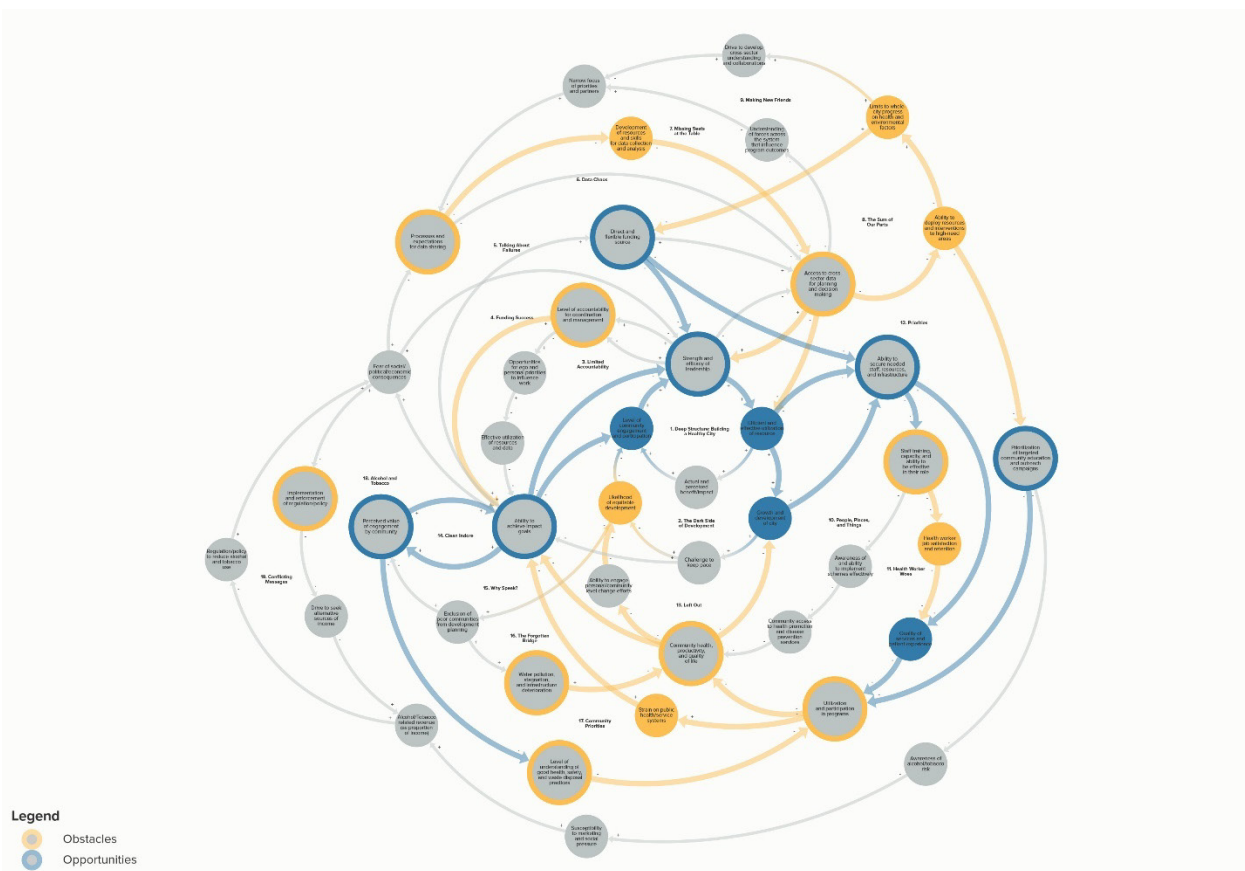
Levers of Change in This Current Context

As part of the systems process, stakeholders were asked to help identify what areas of this context might never change ("frozen" areas), what areas might be ripe for change ("energy" areas), and also what changes might make the biggest impact if they happen ("ripple effect" areas). From this, the feedback and information received from the stakeholders were that the three areas where there was possibility for change and would have the biggest impact ("levers") would be to:

1. Improve data quality, use and integration.

2. Support of accountability to, and enforcement of, policies and regulations.

3. Increase community engagement.

These three levers are integrated into a full Indore Leverage Map. All three of these levers are addressed in each of the actions suggested in this plan. Table 3 provides a description of these levers:

Table 3. Leverage Points in the Indore System

Leverage or big impact areas	Hypothesis/Overview
Improved data quality, use, and integration	If the city improves the mechanisms for cross-sectoral data sharing, increases training and incentives for data collection and management staff, and develops uniform data collection tools and protocol then the anticipated impact will be: higher quality data, improved data utilization, increased impact of policy and program design.
Support of accountability to, and enforcement of policies and regulations	If the city increases structures of accountability for effective coordination and management of programs, and implement enforcement measures in support of policies and regulations, then the level of compliance and participation (within public and private sectors, as well as at the community level) will increase. The anticipated impact of this change in the system is that the level of deterioration and health concerns within existing infrastructure will go down and the likelihood that new development will be designed equitably will increase.
Increase community engagement	If the city design programs based on community need and input (specifically marginalized populations), increase staff resources and training, and demonstrate strong, trustworthy leadership then the anticipated impact will be: increased access and utilization of health promotion/disease prevention programs, improved health and productivity of the population, and a stronger system of care

Framework for Addressing Challenges

These obstacles and opportunities were discussed in the Systems Action Workshop held in Indore in 2020. Using the systems levers and other facilitating techniques, the goal was to develop a set of suggested actions to move Indore toward its goal statement of being "a healthy and livable Smart City for all, with decreased bad health outcomes, improved air quality, increased equitable access to health care and waste management services." Due to COVID-19, BHC was only able to convene consultations with the following sectors:

- Food and Nutrition

- Maternal and Child Health

- Environment, including air pollution

- Urban Planning

- Women and Child Development

The remaining action areas were developed by cross-referencing with the research and evidence that BHC has generated over the last few years. BHC understands the limitations of this, which is why the Action Plan was presented to the Multi-Sector Smart Health Working Group 2021 - 2022 and was updated based on the group's recommendations. Figure 4 shows how these pieces of information fit together into an action framework.

Figure 4. Framework for Developing Indore Healthy City Actions
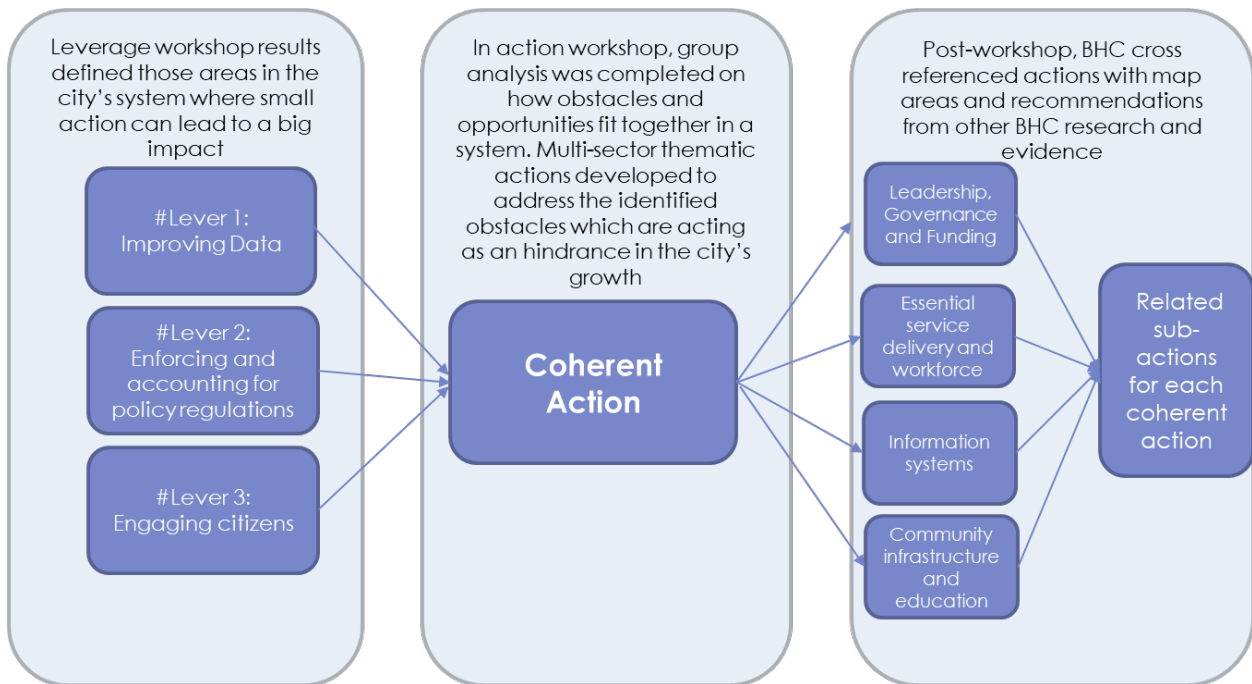
COHERENT ACTIONS FOR A HEALTHY INDORE

Out of this framework, seven coherent action areas have been identified for Indore. The majority of these actions came from the participation of stakeholders in the BHC Systems Action Workshop, and BHC summarized and evaluated their inputs for phases 2 and 3 of the framework. Coherent actions numbers 1-6 were identified by this process, and based on study of previous successful multisector efforts, number 7 was added to ensure continued municipal leadership. Table 4 summarizes these coherent actions.

Table 4. Summary of Coherent Actions

How Might We…	Proposed Coherent Action
Ensure access to healthy food for every Indorean?	#1: Strengthening healthy food systems for all citizens
Ensure awareness about healthy food and hygiene among food handlers and citizens?	
Avoid making air quality worse as Indore grows?	#2: Increasing community participation for better air quality
Make citizens more accountable regarding their surroundings?	
Make citizens aware about the health impacts of air pollution?	
Make it easier to use data to support health in Indore?	#3: Improving maternal and child health through a culture of data
Encourage and build capacity of health care workers to collect and upload real time monitoring data?	
Strengthen the existing data systems?	
Grow a healthier next generation of citizens?	#4: Making Indore a child friendly city
Develop pedestrian and child friendly pathways?	
Encourage children to adopt health promoting behaviors?	
Grow our transport infrastructure capacity while also reducing our risk of noncommunicable diseases?	#5: Creating a more diverse and equitable transport infrastructure
Unclog waterways and drains while also addressing the need for more job opportunities in informal settlements?	#6: Exploring how to link low-income livelihoods to the circular waste economy

Foster meaningful accountability, increase communication and coordination, and make policy decisions and processes more transparent and participatory?	#7: Sustaining municipal leadership for a healthy Indore
Sustain a whole-city healthy Indore effort?	

BHC piloted actions 1-6 in two neighborhoods under Kaya Kalp, which helped to inform any final plans for implementation.

How to Apply These Actions

BHC suggests planners use a healthy equity perspective when evaluating how far and wide to apply these actions in Indore. This means that instead of trying to apply all actions everywhere for "equal" access, resources can be most efficiently deployed by using existing data sources on where health outcomes are the worst in Indore, and then using various combinations of these actions for each area based on need. Figure 5 adapts a common image depicting health equity for this specific example.

Figure 5. Applying Actions with a Data-Driven Health Equity Perspective

Reaching a Minimum Standard of Health for All Citizens

Ward A: High Income & Older
Primary health issues relate to air quality, low exercise, road safety, **Needs Actions #2 & #5**

Ward B: Middle Income & Young Families
Primary health issues relate to air quality, maternal & child health and safe delivery care, road safety, greenspaces, **Needs Actions #2, #3, #4 & #5**

Ward C: Lower Income & Mixed Ages/Castes/Employment
Primary health issues relate to unsafe environment, air quality, food insecurity, maternal and child health, health awareness, road safety, and stable employment **Needs Actions #1-#6**

Created by Gerard Higgins from Noun Project

Action 1: Strengthening Healthy Food System for All Citizens

Summary

The purpose of this action is to strengthen the food systems in Indore to make healthy and standard food available and accessible to all sections of society. This would happen by organizing awareness of citizens through media; building the capacity of city officers dealing with food safety, owners of food establishments, and vendors; and strengthening compliance to the prevailing laws. This would create not just healthier people through decreased malnutrition and food-borne diseases, but also create opportunities to improve livelihoods in the city.

Background

Indore, with a number of food streets, is often labelled a city of food lovers. There are clean street food hubs where food safety and hygiene have been greatly improved, however they continue to sell unhealthy foods that are high in salt, fat, and sugar. There are also many unauthorized hawkers in the city who often fail to maintain the hygiene standards, and/or are selling illegally against zoning laws, and are subject to fines and eviction. A 2021 food safety survey by BHC found that 88% of those who frequented food streets had observed food safety issues (Building Healthy Cities project 2022b). Finally, Indore has a great central fruit and vegetable market that is clean and composts its waste, but due to distance it is not accessible to those outside of the city center.

About 30% of the city is considered informal neighborhoods, and shops serving these areas are of mixed tenancy. BHC and ISCDL conducted a NCD risk factor survey in 2018 that found that residents in non-slum areas had just as many fast food and spicy snacks (namkeen) stores as they did fresh fruit and vegetable sellers to choose from. This differed from slums, where the fast food and namkeen sellers outnumbered healthy stores 3 to 1. In both areas, tobacco sellers were also quite prevalent. Citizens of Indore face a dual burden of malnutrition. Nearly 40% of children under 5 years old are stunted in Indore, and the systems that support child nutrition need to be strengthened, as detailed in the BHC Child Nutrition Systems Brief. Many adolescents suffer from undernutrition and anemia, while over 40% of adult Indoreans are overweight or obese (BHC Health-at-a-Glance Profile 2020; BHC Indore NCD Risk Factor & Environment Survey Fact Sheet).

Proposal

To tackle this issue, BHC's systems mapping consultations with city stakeholders proposed a model which focuses on providing safe and legal hawking spaces, and enforcing food hygiene and junk food sale regulations. The model would include taking community input into account when determining the site for hawking spaces, promoting awareness of the site once set up, and training hawkers on preparing and selling nutritious food. City officials will need to discuss further sub-actions to address the issues relating to child nutrition systems, as these results came out after the costing of this action was completed.

Action 2: Increasing Community Participation for Better Air Quality

Summary

The purpose of this activity is to create better air quality and livability in Indore via citizen participation. This would happen by building the knowledge of the community on causes and consequences of air pollution and involving them (and using their feedback) in environmental planning and management. This model realizes that environmental management is not just the responsibility of the government; individuals, communities, civil societies, organizations, etc. are also responsible.

Background

Indore has a positive track record for engaging their citizens to make positive environmental change. This is particularly true for the Swachh Bharat "Clean India" campaign. The city was able to mobilize citizens at every income level to participate in solid waste management and other clean-up efforts by a) reaching out widely; b) using the feedback effectively; and c) acting quickly to show citizens a clear benefit to participating. It is particularly true that with vulnerable populations/neighborhoods where the struggle to meet basic needs for survival is top priority, any new city effort must be able to demonstrate direct and immediate value. When the value of a program is recognized, community participation accelerates the ability of programs to achieve their impact goals, resulting in greater recognition and success for that initiative, and therefore pride in that community. BHC has documented Indore's efforts in "How Indore Became India's Cleanest City," and how this already has had an impact on air pollution ("Analysis of trends in air pollution in Indore City").

BHC has also documented some continuing air pollution concerns in Indore in its Health Needs Assessment, Policy Brief on Low-Cost Real-Time Sensors for Air Quality Monitoring, and Journey Map on Air Pollution. The average air quality index for Indore in 2019 was in the "satisfactory" category based on PM_{10} (94.57) and $PM_{2.5}$ (49.25) against Indian threshold of 50 and 30 respectively. However, using WHO thresholds of $PM_{2.5}$ (10 μg/ m3 annual mean) and PM_{10} (20 μg/m3 annual mean), these indices were 5 times above the WHO recommended averages. With the population growing at 5% per year, this issue will continue to grow in priority. MPPCB has 6 air pollution stations in the city, but only 2 are located near residential areas. One of the air pollution stations was installed as part of a private sector partnership with IPCA. MPPCB has also installed 6 display screens at strategic points, a positive example of increasing data and citizen awareness through public-private partnerships.

Proposal

To take on air pollution and develop the city in a way that will reduce, not increase this issue as the city grows, BHC's systems mapping consultations with city stakeholders uncovered several ideas that can pull across the strengths of multiple sectors, and capitalize on active citizen's participation in the Clean India Mission. The sub-actions proposed cover citizen-led air quality documentation and mitigation efforts, but also changes to the built environment and transport systems to help mitigate pollution sources city-wide.

Action 3: Improving Maternal and Child Health through a Culture of Data

Summary

The purpose of this activity is to improve the quality, timeliness, and usability of data across sectors and systems relating to maternal and child health. This would include building the capacity of frontline health workers, and use of existing technology and resources such as ANM online (ANMol) app, ICCC, etc. This would create a trained cohort of staff, improve data accuracy, reduce the burden on frontline health workers, and ensure accountability of health workers to complete assigned tasks.

Background

Indore's frontline workers who implement community maternal and child health programs have time-consuming data collection responsibilities for various central and state-run policies and programs. BHC's 2018 Data Use and Access Assessment found that health sector data were spread across at least seven national data systems led by NHM. These information systems were reported to be useful, but were not integrated or interoperable, and many were still paper-based at the facility level (Assi et al. 2018). The central and state governments have launched applications for frontline health workers, such as ANM online (ANMol) and ICDS-Common Application Software (ICDS-CAS), but their use is still limited. Anganwadi Center registers are still largely paper-based and often incomplete (Building Healthy Cities project 2022a). BHC's systems mapping exercise found that due to lack of clear directions/guidelines about data and low expectations for external data sharing, there is little incentive for programs to emphasize generation and reporting of complete, accurate, transparent, and timely data. This leads to low emphasis on and low resource allocation for data management, and lack of efforts to build staff capacity, which is necessary for delivering effective maternal and child health services. BHC's Data Use and Access Assessment also suggested that adequate manpower must be addressed across data generation, analysis, reporting, and ICT support. It also identified the need for establishing a national or state framework or guidelines for data-sharing across sectors (Assi et al. 2018).

The systems mapping exercise also identified available opportunities. Investment in data integration in ICCC for data management, and sharing data for planning and decision-making is a bright spot in the city. This multilayered management structure requires coordination in order to customize the ICCC to city needs. Examples of existing city-level system interoperability include the Integrated Traffic Management System and Vehicle Tracking and Monitoring System (Assi et al. 2018). With ICCC and applications for frontline health workers, there is already a mechanism in place for data collection, analysis, and usability that can be utilized for improving health system data.

Proposal

To tackle these issues, stakeholders proposed to strengthen the quality, timeliness, and usability of data entered into city-level dashboards from frontline workers providing maternal and child health and development services at the community level. Officials dealing with NHM/Integrated Disease Surveillance Program can be resource persons to amplify integrated data systems in the health sector. This coherent action assumes existing technology resources are sufficient to build training around. This does not include additional capital investment.

Action 4: Making Indore a Child Friendly City

Summary

The purpose of this activity is to build Indore into a child friendly city by keeping the focus on health and living environments of children through a bottom-up approach, active community participation, and multisector engagement. This would create a safe, healthy, and livable environment for children coming from all sections of society.

Background

Indore's child health data indicates an urgent need for attention from policy makers. As per the National Family Health Survey (NFHS-4), 39% of children in Indore are stunted due to chronic malnutrition, which is higher than the national and state averages. Only 61% of children in Indore are fully immunized. NHFS-4 also found prevailing anemia among under-5 children, as high as 71% (IIPS and ICF 2017). Annual Health Survey 2011 found that urban Indore's under-5 mortality rate of 43 was higher than the national average (Vital Statistics Division 2012). Data provided by the District Project Management Unit, NHM suggests that 33,956 episodes of diarrhea/dysentery occurred in under-5 children in 2018-19. BHC's NCD survey found few green spaces available for children. Only 69% of non-slums have access to parks and green spaces, while this percentage is only 38% in slums. As per data provided by DPC SSA, only 53% of schools have playgrounds (BHC Project 2020).

BHC's Indore Health Needs Assessment summarizes barriers affecting health of citizens (including children) such as, inadequate built environment and housing, access to primary health centers, knowledge of healthy environment, knowledge of health risks and symptoms of diseases, and compliance to treatment (Pomeroy-Stevens et al. 2018). The qualitative survey results from BHC and CURE's participatory research in 8 urban poor communities in Indore suggest a number of barriers to children's health. These include low resident awareness of ICDS supplementary nutrition schemes, a lack of toilet facilities at most Anganwadi centers, fewer ASHA workers than required, young maternal age, and low awareness of immunization schemes. The city should address these issues to create a better environment for healthy children.

Indore also has many opportunities such as active and dynamic city leadership that has successfully implemented various programs and policies. BHC is implementing a Health Promoting Schools activity in 148 government schools in Indore City through which students will learn about health risks and how to adopt healthy behaviors. BHC's participatory research in 8 urban poor communities will train CBOs and community members to work with vulnerable populations to identify and address health-related issues. ASHAs and AWWs under ICDS will also be actively engaged. These and other opportunities can develop Indore into a healthy, livable and child friendly city.

Proposal

To tackle these issues, stakeholders proposed developing a child friendly city program, focused on creating a safe and healthy environment starting from birth. The program will improve awareness and increase access to health care facilities, good nutrition, immunization, education, and green spaces. This will develop healthy and safe environments for children and will be a helpful strategy in improving child health indicators in the city.

Action 5: Creating a More Diverse and Equitable Transport Infrastructure

Summary

The purpose of this action is to create a diverse and equitable transport infrastructure in the city from which people from all income levels can benefit. This would decrease transport barriers, lower air pollution, increase road safety, and reduce household transport costs.

Background

Road safety and providing clean air are basic rights of citizens of Indore. After the COVID-19 lockdown, there has been a 40% increase in the sale of bicycles in Indore City (Khatri 2020). The reasons are many: fear of using public transport, alternative for fitness due to shutdown of gyms, fitness classes and sport clubs, etc. This increase in popularity is a clear indication that Indore can adopt green transport and citizens might even cycle to work on most days. However, to make this a reality the city has to focus on improving cycle friendly infrastructure as currently there is a dire need of cycle lanes, cycle stands, and better traffic management in the city.

Transport comes up in the Indore context in multiple ways. One is road safety; traffic police mention that they struggle to enforce existing regulations on road, pedestrian, and cycling safety. Another is diversifying transport which we heard recently from ISCDL as they look to increase cycling tracks and pedestrian sidewalks throughout the city.

BHC's rapid cyclist feedback survey revealed that 71% of the cyclists hesitate to adopt cycle as a daily mode of transport due to lack of cycling infrastructure in the city. A second rapid feedback survey also highlighted multiple concerns regarding pedestrian safety. One of the main reasons given among those who do not walk regularly was that walking paths did not exist or were in poor condition, highlighting a key infrastructure constraint to green transport.

Proposal

To tackle these issues, ideas suggested during the workshops and from separate BHC activities were combined to create a proposal for developing a diverse and equitable transport infrastructure for Indore. The program will focus on developing cycling and pedestrian pathways, improved road and transport law enforcement, exploring electric public transport options, and strengthened CRS for reporting traffic, walking and cycling path, and green spaces complaints and violations. This will lead to development of a healthy and safe environment for all citizens.

Action 6: Exploring How to Link Low-Income Livelihoods to the Circular Waste Economy

Summary

The purpose of this action is to build livelihoods while at the same time reducing waste streams and free waste in neighborhoods in Indore. This would build from Indore's strengths in waste management to lift many households out of the lowest level of poverty while also reducing the methane, CO_2 and other climate-changing gases coming from solid waste.

Background

In Indore there is a need for livelihoods development in newer slum areas. During BHC's participatory research in 8 urban poor communities, we heard a lot about women's livelihoods, but also some of the vices that come up when men and youth do not have active livelihoods. Indeed, COVID-19 exacerbated the hardships many households felt – BHC provided some job training to women in these neighborhoods, but we also see an opportunity to tie together the issues of waste and wastewater to issues of livelihoods creation (Pomeroy-Stevens et al. 2020). Indore has become a leader in solid waste management, including green technologies for repurposing waste and its biomethenation plant, and for the informal economy of ragpickers pulling out recyclable or sellable materials.

As Indore looks for ways to further innovate in this area, they have the opportunity to create more circular economies around their waste, particularly to capitalize on plastic and rubber waste, which are some of the most toxic types of waste when burned as trash, or when contaminating open wells and drains. In other cities in India there is an innovative marketplace around creating roads, pavers, and rubber bricks from waste.

By partnering with the private sector to turn waste into usable products, it has the threefold benefit of reducing toxics in the environment, reduces Indore's waste costs, and create livelihood opportunities for citizens. The resulting products can also, at least in the near term, be used to supply the city with needed materials for the sidewalks, bike paths and roads outlined in Action #5.

Proposal

Based on feedback from individual activities and discussions with city officials, we propose exploration of the viability of a circular economy for Indore's reusable waste streams, particularly plastics and rubber, to help build both livelihoods and create a wider network for green transport in the city. Specific components might include engaging public-private partnerships for recyclable materials revenue generation, training slum dwellers and low-income youth for jobs in the circular economy, ensuring 3 R's are taught in primary schools, among others.

Action 7: Sustaining Municipal Leadership for a Healthy Indore

Summary

The purpose of this action is to support a healthy Indore secretariat using the existing Smart Health Working Group. This would provide a sustainable funding support mechanism to continue progress toward a healthier Indore.

Background

Any successful multisector effort requires a sustained and stable structure for leadership, governance, and financing. Evidence suggests that placing leadership under a line ministry or department creates unnecessary rivalries and does not facilitate cross-sector collaboration the way a secretariat could that is placed under a body like the Prime Minister's office, Planning Commission office, or Mayor's office (Lamstein et al. 2016). The funding proposed under this action is specifically only to support the leadership and oversight for the coordination of the healthy Indore effort. All implementation plan funds would stay under their respective sectors.

Indore has the unique opportunity through the innovative Smart City Special Purpose Vehicle to support a healthy Indore secretariat using the existing Smart Health Working Group, which can be expanded or adjusted to suit the needs of those overseeing the implementation, monitoring, and evaluation of this plan. However, those stakeholders in Indore who will be supporting the healthy Indore effort going forward must define the exact details for this structure and where to place it.

Proposal

To address the above-mentioned issues, we propose to define funding support stream for Smart Health Working Group and/or any other municipal level secretariat needed to oversee leadership, governance, and monitoring and evaluation of the Healthy Indore effort. This secretariat will also be responsible for reporting progress to, and soliciting feedback from citizens on a regular basis to ensure efforts are in line with current needs.

Responsibilities for Implementing Healthy Indore Actions

BHC used feedback from the systems mapping stakeholders to create a list of sub-actions for each of these seven areas, and suggest responsible parties. See Annex C for details. While these sub-actions are a record of what was proposed and costed during the time BHC supported this plan, the list is not exhaustive, and is able to be added to or modified based on best evidence and needs at the time of the formal launch of this document.

Costed Action Plan

Between January and February 2022, BHC facilitated a rapid costing of this Action Plan using the list of sub-actions from the previous section as a guide. In the December 16, 2021 session of the ISCDL/BHC Multi-sector Smart Health Working Group, sector representatives and partners volunteered to develop costing information for one or more coherent actions. BHC then held costing workshops, during which government and non-governmental funding partners came together to define the yearly and five-year total cost of implementing this Action Plan. While these costs are approximate and have not been independently verified, they provide a starting point for incorporating these activities into sector and project budgets and workplans. Table 5 below summarizes the costs provided. Full details can be found in Annex D.

Table 5. Costing Exercise Summary

	Sectors/Partners Involved in the Costing	Estimated Yearly Costs	Estimated Total for Five Years (2023-2028)*	Additional Information Needs/Caveats
#1: Strengthening healthy food systems for all citizens	ISCDL, Health, WCD, Education External Partners: MPVHA, Basix	₹ 11,308,000	₹ 23,188,000	
#2: Increasing community participation for better air quality	IMC, MPPCB External Partners: CAC, CII, ISSW, Acropolis	₹ 10,967,000	₹ 22,231,000	Many activity costs are not included as they are already covered under donor projects.
#3: Improving maternal and child health through a culture of data	Health, ISCDL (ICCC) External Partner: Samagra	₹ 3,420,000	₹ 3,420,000	Primarily includes activities covered by an external donor project. Does not include cost of activities under NUHM. Missing costs for some proposed sub-actions relating to new technology, including ANM app and improvements to nutrition data systems.

#4: Making Indore a child friendly city	ISCDL, Health, WCD, Education External Partners: MPVHA, Basix	₹ 33,703,120	₹ 35,023,120	No activities were planned to be done more than once during 5 years; this will need to be reviewed for accuracy. No nutrition data systems activities are costed, but may be required.
#5: Creating a more diverse and equitable transport infrastructure	IMC, ISCDL, Transport, AISTCL External Partner: Acropolis	₹ 7,200,000	₹ 14,200,000	Funds collected from traffic violations can potentially be used for covering these costs.
#6: Exploring how to link low-income livelihoods to the circular waste economy	IMC, NSDC External Partners: Basix, Acropolis	To be finalized	To be finalized	Many of the proposed sub-activities will need inputs from the private sector. They will also generate revenue, so the costing equation may need to be different for this sub-action. Currently only costs for livelihoods and youth training are included here.
#7: Sustaining municipal leadership for a healthy Indore	Uncosted - ISCDL, IMC, Health	To be finalized	To be finalized	Still needs to be costed.**

*No adjustments made for inflation or depreciation. All costs are naïve to currency conversion if foreign donors are providing funds.

**Action #7 needs to be costed in coordination with the national Smart City Mission and the city administration as it spans across the city and requires a policy-level decision. BHC will facilitate this process in the coming months. Some of the BHC strategies are likely to be adopted by the Smart City Mission for the Healthy Cities Initiative including a multisectoral structure for decision-making; using a systems approach in urban planning; integrating data from various sectors and using them for evidence-based planning; and engagement of communities for grievance redressal and reducing inequities.

MONITORING AND EVALUATION

Proposed Targets and Indicators for Plan

BHC completed the list of monitoring indicators in two phases. First, in the costing workshop the participants (BHC partners, government officers, etc.) identified the process indicators for all activities required to implement each coherent action. Second, for outcome/impact indicators BHC used the Smart City Mission for Healthy Cities indicators which were developed through a consultative workshop of experts organized by BHC in January 2022.

The city will need to finalize this framework. In order to use this effectively to track progress toward the Healthy City Goals, they will need to consider the following questions related to process indicators:

- Based on the needs of the communities you are targeting, what is the total or goal amount for this indicator? For instance, the indicator "# additional sub urban health centers set up and functional," does not require a center for every single ward, rather only those that do not have any, or any functional, center already. Set the total/final goal for this indicator first.

- Given the costs that your departments and partners have estimated, how quickly can you reach the goal you have set? How many years will it take? This can be used to define yearly targets to help you meet this end goal by years, 3, 4, or 5.

- Who is responsible for collecting these data, and how will they be reported? Will they be linked to the ICCC? This needs to be defined up front in order to get accurate data.

BHC has suggested a second set of indicators related to the outcome/impact of this plan. While it is harder to track regular progress on these indicators, they are meant to provide a better sense of how this work has impacted overall health and livability in Indore. Considerations for finalizing these are:

- What percent of this indicator is influenced by public sector/donor partners? For example, this plan has not yet tapped into support from the private sector, and since 70 percent of patients in Indore receive their health care from the private sector, that large number of citizens will not see major changes to their care. So if we suggest an impact indicator such as "Improvement in access to primary health care services," we need to either edit this to mean only public sector services, or reduce our ideal percentage change to reflect the amount that the city can control.

- The previous consideration will also help to define the maximum possible change we could expect to have for each indicator. For an area like reduction of food-borne infections, we could set an ambitious target to completely eliminate these

by 2028. But for an area like obesity, it may be more realistic to aim to halt new cases of obesity at their present level.

- Once we have set the amount of total change we want to see, we can then set yearly targets. Remember that the process indicators will change before impact indicators will, so in many cases we may want to assess most of the changes in the later years of the plan, such as years 3, 4, and 5.

- Finally, just as with the process indicators, we need to define who is responsible for collecting these data, how they will be reported, and whether they will be linked to the ICCC.

The Smart City Mission has a very sustainable project implementation and monitoring mechanism which involves timely monitoring at all levels (which includes city, state, and national level entities), is adapted to change, resilient to shocks which can occur due to external as well as internal factors, and uses data at every step to achieve outcomes. The Smart City Mission is considering using a set of healthy city indicators that will reflect steps being taken by the city to improve health of citizens and provision of health care services. This Healthy City Action Plan should be further modified based on gaps identified in the coming years.

Annex E details the suggested monitoring framework.

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ANNEX A: BHC Activities Completed in Support of Healthy Indore

Year	Activity	City Offices Involved
2017-18	**NCD Risk Factor and Environment Survey** The survey provided data ranging from the individual to household level, on a wide variety of health behaviors such as tobacco and alcohol use, dietary practices, and physical activity, among others.	Department of Health and Family Welfare, IMC, ISCDL
2017-18	**Health Needs Assessment** This survey addressed two main objectives: 1) improving understanding of access, barriers, knowledge, and opportunities for healthy living in the city of Indore across a range of stakeholders; and 2) investigating multisectoral activities related to health and urban planning within Indore's Smart City Initiative.	Department of Health and Family Welfare, IMC, ISCDL
2017-18	**Data Use and Access Assessment** The assessment goals were to understand current access to and use of data and information and communications technology in the city. The findings were used to inform BHC's more detailed city workplans relating to data system interoperability and citizen reporting systems.	ISCDL
2017-18	**Political Economy Analysis** This analysis reviewed the political economy of service delivery in Indore, and examines the context within which the Smart City initiative might be leveraged to improve health outcomes across all residents, including those most vulnerable to health shocks.	ISCDL, IMC
2018	**Analysis of Trends in Air Pollution in Indore City** In this study a closer examination of air pollution levels in Indore city was conducted. Annual average concentrations for sulfur dioxide, nitrogen oxides, and particulate matter (PM2.5 and PM10) from three air pollution measuring stations located in Indore's Polo Ground (industrial), Kothari Market (commercial), and Kanodia Road, Vijay Nagar (residential) were analyzed for trends during 2013-2017. For 2017, month-wise data were analyzed for seasonal variations.	MPPCB

2018	**Training and Capacity Building of City Officers on COTPA** BHC worked with ISCDL to train city officers on the harms of tobacco use, initiatives for tobacco control, and provisions under the COTPA, 2003. This training, the first of its kind in Indore, was organized on July 20, 2018.	ISCDL
2018	**Assessment Report on Functionality of Urban Primary Health Centers of Indore City** BHC evaluated the current status of multiple UPHCs in Indore, India in relation to the Indian Public Health Standards. The main purpose of the study was to identify the status and adequacy of infrastructure, equipment, diagnostics, medicines, and health care service delivery of each selected public health care facility to enable ISCDL and the Health Office to address any barriers that limit UPHCs from using resources and functioning at their best.	Department of Health and Family Welfare and ISCDL
2019	**Multi-sector Convening** BHC convened a Multi-sector Smart Health Working Group in Indore in association with the city authorities to review the work being done, address issues, and decide necessary solutions. The group is chaired by CEO ISCDL and co-chaired by Chief Medical & Health Officer, Department of Health and Family Welfare and consists of officials and partners from various other sectors. These meetings were organized every quarter and meeting minutes were maintained and approved by ISCDL.	ISCDL, Department of Health and Family Welfare, WCD, MPPCB, Department of Education
2019	**Assessment of Citizen Reporting Systems in Indore- 311 app and CM Helpline** This study was conducted to assess citizens' attitudes about and use of two CRSs in Indore City, and the CRSs' effectiveness in resolving grievances.	ISCDL
2019	**Sensitization Training on Food Safety and Healthy Foods** With the objective of making Indore a "healthy, livable, Smart City for all," a sensitization training on food safety and healthy foods for members of food handlers' associations in Indore were organized to train them on best practices.	Department of Health and Family Welfare, IMC, ISCDL, Food Safety and Standards Authority of India
2019- 22	**Health Promoting Schools (HPS)** BHC implemented HPS in 148 middle, high and higher secondary government schools of Indore. HPS had two main components - training of teachers using the training manual developed by BHC, and assessment of each school's physical and social environment. The activity was being implemented by BHC local NGO partner MPVHA.	Department of Education, Department of Health, ISCDL

2019- 22	**Participatory Research in Urban Poor Communities** BHC implemented participatory research in 8 urban poor communities (slums and non-slum settlements) to encourage community and NGO participation in the planning, implementation, and monitoring of public programs related to the social determinants of health (e.g., environment, urban planning, water and sanitation, women and child development, education). This activity was implemented by BHC's partner NGO CURE.	ISCDL
2020-22	**Addressing Air Pollution** BHC implemented an activity to increase community participation in air pollution mitigation in Indore City using low-cost air quality monitoring sensors, and training Clean Air Guides. The activity was implemented by Indore School of Social Work with support from BHC consultant Tim Dye.	MPPCB, ISCDL
2021	**Kaya Kalp: A Pilot Initiative** A pilot initiative in the city to demonstrate the feasibility and acceptability of a sustainable, low-cost, multisector, community-led initiative focused on creating a healthy environment, healthy families, and healthy children.	Department of Health and Family Welfare, IMC, ISCDL, MPPCB, Department of Education
2021	**Capacity Building on Data Integration and Use** The main purpose of the training was to enhance capacity of government departments to collect, share, and analyze data, and organize information that will be useful for decision makers, planners, managers, and citizens.	ISCDL, ICCC
2021	**Rapid User Feedback Surveys to Understand Citizen Experiences** BHC conducted three rapid feedback surveys to understand citizens' experiences and feedback towards existing infrastructure supporting road safety, pedestrian safety, and food safety.	Department of Health and Family Welfare, ISCDL, Department of Road traffic and Safety
2021	**Assessment of Children Nutrition and Community Nutrition Support Systems** BHC collected primary data on Anganwadi centers and secondary data on the nutrition system in Indore, to identify practical system-wide changes the city can make to improve child nutrition.	Department of Health and Family Welfare, WCD

ANNEX B: List of Stakeholders Consulted During Systems Mapping Process

Note that this table does not include all those interviewed for the individual reports and research studies listed in Annex A, just those who attended the systems mapping workshops and town halls.

S.No.	Name	Designation/Position	Department/ Organization
Government Officials and Workers			
1	Rohan Saxena	CEO	ISCDL/IMC
2	Dr. H.N. Nayak	CMHO	Health & Family Welfare
3	Dr. Pravid Jadia	CMHO (post 2018)	Health & Family Welfare
4	Dr. Madhav Hasani	In-charge P.C Sethi Hospital	Health & Family Welfare
5	Vijay Bhargava	DPM	NHM
6	Dr. S. Siroliya	District Health Officer	NHM
7	Sunil Verma	O/o CMHO	Health & Family Welfare
8	Maneesha Pandit	MEIO, O/o CMHO	Health & Family Welfare
9	Sunil Sahu	O/o CMHO	Health & Family Welfare
10	Devika Devda	APM, O/o CMHO	Health & Family Welfare
11	P.S. Meena	Additional Superintendent	Traffic Police
12	R.P. Choubey	Deputy Superintendent	Traffic Police
13	Sunil Sharma	Deputy Superintendent	Traffic Police
14	Basant Kaul	Deputy Superintendent	Traffic Police
15	Rajendra Kumar Manduloi	District Project Officer	Women & Child Development
16	C.L. Passi	District Project Officer (Post 2018)	Women & Child Development
17	Mohd Shahin	Consultant	Women & Child Development
18	Shreeraj Manampadi	CDPO- ICDS	Women & Child Development
19	Dr. Anita Joshi	CDPO- ICDS	Women & Child Development
20	Satish Ganguta	CDPO- ICDS	Women & Child Development
21	B.S. Sirole	CDPO- ICDS	Women & Child Development
22	Ravi Sharma	CDPO- ICDS	Women & Child Development
23	Veena Shrivastava	Supervisor	Women & Child Development
24	Akshay Singh Rathore	District Education Officer	Education Department
25	Narendra Jain	ADPC RMSA	Education Department
26	Bhaskar Mayade	Zonal Officer	Indore Municipal Corporation

27	Vaibhav	Zonal Officer	Indore Municipal Corporation
28	Umesh Pandya	Zonal Officer	Indore Municipal Corporation
29	Nagendra Singh	Zonal Officer	Indore Municipal Corporation
30	G.S Sutar	Zonal Officer	Indore Municipal Corporation
31	Shantilal Yadav	Zonal Officer	Indore Municipal Corporation
32	A. K Jain	Zonal Officer	Indore Municipal Corporation
33	Pragya Choudhary	Sr. IT Consultant & GIS Expert	Indore Municipal Corporation
34	Ankit Shukla	Technical Engineer	ISCDL
35	Dr. D K Waghela	Lab Head	Madhya Pradesh Pollution Control Board
36	Dr. Gunwant Joshi	Ex- Regional Head	Madhya Pradesh Pollution Control Board
37	Dr. Ram Ghulim Razdan	Medical Superintendent	Government Mental Hospital
38	Anjali Kulkarni	Principal	Government High School, Sangam Nagar
Practitioner and Public Health Specialists			
1	Dr. B.M Shrivastava	Ex-Dean	Government Dental College
2	Dr. Ashok Lali	Dentist	-
3	Bala Lali	Ex. Principal	Government Nursing College
4	Dr. Neeta Rao	Senior Health Specialist	USAID
5	Dr. Ritvik Amarchand	Senior Research Officer	AIIMS
6	Dr. Monica Biradavolu	CEO	QualAnalytics
7	Dr. Sanjay Dixit	Professor & Head	MGM Medical College
8	Dr. Satish Saroshe	Associate Professor	MGM Medical College
9	Dr. Rahul Rokade	CD-Principal Investigator	MGM Medical College
10	Dr. Ishan Sanodiya	PG Resident	MGM Medical College
11	Dr. Priyanka Bhaskar	PG Resident	MGM Medical College
12	Dr. Akansha Kalra	PG Resident	MGM Medical College
13	Dr. Yogesh Chouhan	PG Resident	MGM Medical College
14	Shiva Vajpai	RSO	MGM Medical College
15	Man Singh Chaudhary	Sr. Radiographer	MGM Medical College
16	Dr. RK Sharma	Associate Professor	Indore School of Social Work
17	Dr. Minakshi Kar	Asst. Professor	Indore School of Social Work
18	Mukesh Kumar Sinha	Executive Director	MPVHA
19	Bakul Sharma	Project Manager	MPVHA
20	Ashish Daniel	Project Officer	MPVHA
21	Satyendra	Program Officer	MPVHA

22	Trupti Sharma	Manager Programs	TCIHC/PSI
23	Virendra Jain	Program Coordinator	TCIHC/PSI
24	Shanu Sanwaija	Program Coordinator	TCIHC/PSI
25	Zameer Anwar	Program Officer	Save the Children
26	Aditya Awasthi	Program Officer	Secondary Cities, Acropolis
27	Bhawna Sharma	Program Officer	CURE
28	Samya Rakshit	Program Officer	CURE
29	Sayan Malik	Project Coordinator	CURE
30	Rakesh Lakhena	Manager	KPMG
31	Om Hari Dangi	Team Leader	KPMG
32	R.K Shukla	Team lead	EPTISA
33	S. Vaishali	Program Officer	EPTISA
34	Dr. Sonam Rathore	-	Larsen & Toubro
35	R. G Swamy	-	Larsen & Toubro
36	D. Mudgal	-	Larsen & Toubro
37	H. Desa	-	Larsen & Toubro
38	Aniket Modke	Project Manager	HPE
39	Amitava Mukherjee	Sr. Solution Architect	HPE
40	Debjyoti Ray	Data Scientist	Trinity
41	Sagar Ahake	MSW	GACC College
42	Manish Sethiya	MSW	GACC College
43	Ajay Kumar Gupta	MSW	Indore School of Social Work
44	Hema Jagota	Director-Marketing	Optum
45	Abhishek Nirmal	Sr. Business Analyst	Optum
46	Rajesh Taduri	Assistant Director	Optum
Community Town Halls			
1	Community Town Hall – Youth/University Students	28 participants	Drawn from Acropolis University
2	Community Town Hall – Sanitary Workers	50 participants	-
3	Community Town Hall – Women's Group	45 participants	Drawn from both slum and non-slums residents in Indore
4	Community Town Hall – Frontline Workers	44 participants	Drawn from public sector

ANNEX C: Sub-Actions and Responsible Parties

Area	Lever	Sub-Actions	Primary Sector Responsible for Implementation	Secondary Sectors
#1: Strengthening healthy food systems for all citizens				
Essential Service Delivery and Workforce	**Engaging Citizens**	Providing a safe, green and legalized hawking space to local hawkers who can sell safe, healthy/organic and staple food to the citizens.	Indore Municipal Corporation	Indore Smart City Development Limited
	Increasing Accountability & Enforcement	Vendor licensing of tobacco sellers in the city for better accountability and enforcement.	Indore Municipal Corporation	Department of Health, MPVHA
Leadership, Governance & Financing	**Increasing Accountability & Enforcement**	Better enforcement of regulations on hygiene as well as on sale of tobacco, alcohol and illegal junk food sellers	Indore Municipal Corporation	Indore Smart City Development Limited, Department of Health, FSSAI
Community Infrastructure and Education	**Engaging Citizens**	3. Taking feedback from citizens in underserved neighborhoods on locations for healthy food hawking and the type of support needed to allow those who want to start such businesses. Promoting awareness among citizens on healthy eating in the neighborhoods where these legal hawking areas are set up.	Indore Municipal Corporation	Indore Smart City Development Limited, Community Based Organizations
	Engaging Citizens	4. training of hawkers by the city administration on preparing and selling nutritious food.	Indianeers Food Safety Management (NGO working with FSSAI)	IMC, MGM Medical College, Acropolis University

Information Systems	Engaging Citizens	Verified healthy food rating on food delivery companies like Zomato and Swiggy can be introduced in Indore. Celebration of Healthy Food Day monthly.	Indianeers Food Safety Management (NGO working with FSSAI)	ISCDL
#2: Increasing community participation for better air quality				
Essential Service Delivery and Workforce	Increasing Accountability & Enforcement	Making the citizens aware about traffic norms and its impact on their city's environment so that they themselves support the city by complying to regulations e.g. Citizens getting their vehicles checked every 3 months to ensure that emissions are within permissible levels.	Department of Road safety and transport	Department of Education, Indore Municipal Corporation, NGOs
Leadership, Governance & Financing	Improving Data	Creating pathways for quality data sharing which could be used for surveillance, management and development of policies.	Integrated Command and Control Centre	Indore Smart City Development Limited
	Increasing Accountability & Enforcement	generating awareness in the community about green transport, 3- storied plantation, traffic norms, PUC measurement etc.	Department of Road safety and transport	Indore Smart City Development Limited, Indore Municipal Corporation
Community Infrastructure and Education	Engaging Citizens	Promoting three storied plantations, roof top gardens, hanging gardens etc. This can also be linked with the Indore Municipal Corporation's effort of building a green city[1][2].	Indore Smart City Development Limited	Indore Municipal Corporation, Residence Welfare Associations
	Engaging Citizens	encouraging green/sustainable transport in the city. This could be done at individual level (walking, cycling) as well as community level (carpooling, using CNG vehicles etc.)	Indore Smart City Development Limited/AICTSL	Department of Road safety and transport

	Engaging Citizens	Creating green schools by training the students and teachers about the impacts of air pollution on human health and how they can support to improve the air they breathe. Training community workers as clean air guides to measure air pollution, identify sources of emissions, explore mitigation efforts and make citizens aware of the effect of air pollution on their health.	Department of Education	Indore Smart City Development Limited, Department of Health, NGO partners
Information Systems	**Engaging Citizens**	Generating community level data. Installing Low cost sensors among the community and building their capacity for data collection, so that they are aware of the increase in air pollution level, the impact it can have on their health and what precautions they should take to reduce exposure to air pollutants. The collected data would be linked to ICCC for multi sector data access.	Indore Smart City Development Limited	Department of Health and Family Welfare, Integrated Command and Control Centre, Regional Madhya Pradesh Pollution Control Board, CII under Clean Air Better Health
	Improving Data	Conduct a study which compares electric vehicles v/s CNGs based on sustainability, durability, efficacy and impact on the environment	ISCDL/AICTSL	WRI and allied organizations
#3: Improving maternal and child health through a culture of data				
Essential Service Delivery and Workforce	**Improving Data**	Supportive Supervision: Training and capacity building of the staff on data collection, analysis and application use by MGM college and Nursing College student volunteers.	Department of Health and Family Welfare and Department of Women and Child Development	MGM Medical College, Nursing College

Leadership, Governance & Financing	Increasing Accountability & Enforcement	Meetings between stakeholders to come to a mutual agreement on the software/data backbone to allow data integration.	Indore Smart City Development Limited	All departments
	Increasing Accountability & Enforcement	National/State level decision to allow data integration into ICCC	Indore Smart City Development Limited	Integrated Command and Control Centre
	Improving Data	Appointing a Nodal officer in the city to facilitate data sharing between sectors until it is not integrated with ICCC	Department of Health and Family Welfare	Indore Smart City Development Limited
Information Systems	Increasing Accountability & Enforcement	Uses existing technology/user-led design to improve technology to fit health workers' needs.	Integrated Command and Control Centre	Department of Health and Family Welfare, CBOs
	Increasing Accountability & Enforcement	Strengthen data privacy guidelines to safeguard individual privacy	Integrated Command and Control Centre	Indore Smart City Development Limited
	Improving Data	Training on data integration for ICCC.	Integrated Command and Control Centre	Indore Smart City Development Limited
#4: Making Indore a child friendly city				
Essential Service Delivery and Workforce	Increasing Accountability & Enforcement	Training and capacity building of 3 As (ASHA, Anganwadi workers and ANM) to bridge the gap in program implementation through supportive supervision. This will create a better coordination across departments regarding safe deliveries, better nutrition, immunization and basic healthcare services.	Department of Health and Family Welfare	Department of Women and Child Development, and Academia (MGM medical college, Nursing college, Acropolis)
	Increasing Accountability & Enforcement	Creating safe and green spaces around communities, playground facilities in schools and pedestrian access around schools for growing children.	Indore Municipal Corporation	Department of Education

Community Infrastructure and Education	Engaging Citizens	Improving citizen engagement and participation through awareness sessions with the community groups by FLWs and CBOs regarding institutional births, importance of immunization, nutrition in first 1000 days of birth, identification of health risks, importance of sanitation and hygiene and government services and programs on immunization, Integrated Child Development Services (ICDS), Nutrition Rehabilitation Centres (NRC), Right to Education act (RTE) etc.	Department of Women and Child Development	Department of Health and Family Welfare, CBOs
	Increasing Accountability & Enforcement	Promotion of non-motorized transport in the city.	AICTSL	Department of Road safety and transport, Indore Municipal Corporation
Leadership, Governance & Financing	Engaging Citizens	implementing the Health Promoting Schools programs by department of education in the remaining schools of Indore.	Department of Education	Department of Women and Child Development. Department of Health and Family Welfare , Local NGOs such as MPVHA
#5: Creating a more diverse and equitable transport infrastructure				
Essential Service Delivery and Workforce	Increasing Accountability & Enforcement	Developing cycling and pedestrian infrastructure between key points in the city where a diverse income range of citizens can use them as a viable alternative to motor vehicles	Indore Municipal Corporation	Indore Smart City Development Limited
	Engaging Citizens	Linking waste mgmt. to pathways, to keep clean and usable	Indore Municipal Corporation	Private sector contractor

	Increasing Accountability & Enforcement	Develop commercial areas into no vehicle zone. Old city area can be taken up as a pilot.	Indore Smart City Development Limited	Indore Municipal Corporation, Private sector contractor
Leadership, Governance & Financing	**Increasing Accountability & Enforcement**	Developing viable network of rental bikes and prams to be used on these paths	Private sector partner	Indore Municipal Corporation, Indore Smart City Development Limited
	Improving Data	Consider smart sensors for lights to reduce power usage when paths not used	Indore Smart City Development Limited	Indore Municipal Corporation
	Increasing Accountability & Enforcement	Enforcement of rules relating to motor vehicles staying off sidewalks and cycling tracks, and other public safety enforcement especially to ensure women feel safe walking – could engage RWAs or CBOs in policing/fines(Traffic Police, RWAs/CBOs)	Traffic Police	RWAs/CBOs
Community Infrastructure and Education	**Engaging Citizens**	Cyclothon and 1/5k campaigns to increase recreational use and solicit citizen user feedback	Indore Smart City Development Limited	Department of Health and Family Welfare
	Increasing Accountability & Enforcement	Inclusion of pedestrian and cycle safety information in road license tests as a pilot in Indore city	Regional Transport Authority	Indore Smart City Development Limited
	Increasing Accountability & Enforcement	Enforcement of traffic rules for motor vehicles, staying off sidewalks and cycling tracks, and other public safety enforcement specially to ensure safety of women and children.	Department of Road safety and traffic/AICTSL	CBOs

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Information Systems	**Increasing Accountability & Enforcement**	Mount effective response to CRS complaints regarding street lights, public safety, and blocked paths via ICCC	Integrated Command and Control Centre	Indore Smart City Development Limited, AICTSL, Department of Road and Traffic Safety
#6:Exploring how to link low-income livelihoods to the circular waste economy				
Essential Service Delivery and Workforce	**Increasing Accountability & Enforcement**	Create PPP for revenue generation around recyclable plastics, cements and rubbers which can be used to create mobile pavers (IMC, Private Partner, with possible donor support from WasteAid).	Indore Municipal Corporation	Private sector partner
	Engaging Citizens	Train slum dwellers interested in this work to create the pavers as well	National Skill Development Corporation (NSDC)	NGOs working with NSDC
	Increasing Accountability & Enforcement	Pavers will make up new sidewalks across city, and can be moved and re-laid as needed when construction plans uproot a sidewalk (IMC).	Indore Municipal Corporation	Private contractor
Leadership, Governance & Financing	**Increasing Accountability & Enforcement**	Possibly add microfinance or bank account creation support for those newly entering workforce to help them enter formal economy	Indore Municipal Corporation	National Skill Development Corporation (NSDC)
Community Infrastructure and Education	**Engaging Citizens**	Providing other jobs training to prepare low income youth for jobs in the circular economy, including composting, bio-methanation, etc. capitalizing on Indore's leadership in this area	ISCDL	NGOs working with NSDC
	Engaging Citizens	Ensure 3rs and other key recycling messaging is getting taught in primary schools across the city	Department of Education	Department of environment, forest and climate change

Information Systems	Improving Data	Start tracking jobs created data in the circular economy/recycling sector to provide proof of concept.	Integrated Command and Control Centre	National Skill Development Corporation
#7: Sustaining municipal leadership for a healthy Indore				
Essential Service Delivery and Workforce	**Increasing Accountability & Enforcement**	Provide training to IAS and senior city officials on systems thinking	Smart City Mission	USAID partners
Leadership, Governance & Financing	**Increasing Accountability & Enforcement**	Define funding support stream for smart health working group and any other municipal level secretariat needed to oversee M&E and leadership of Healthy Indore effort	ISCDL	USAID partners
	Improving Data	Defining, approving and using a M&E framework for a Health Indore	ISCDL	Department of Health and Family Welfare
	Engaging Citizens	Reporting on the progress to citizens on a regular basis	ISCDL	Department of Health and Family Welfare
Community Infrastructure and Education	**Increasing Accountability & Enforcement**	Create a Ward level multi-sector coordination committee to support the implementation of the plan	ISCDL, IMC	CSOs
	Improving Data	Via committee, support equity indicator review to ensure each ward is getting the right interventions	ISCDL, IMC	CSOs
	Engaging Citizens	Provide forum for citizens in each ward to share priority needs, each workplanning cycle	ISCDL, IMC	CSOs

Information Systems	Improving Data	Work on data integration into ICCC of all key indicators from Smart Health Working group sectors	Integrated Command and Control Centre	KPMG
	Increasing Accountability & Enforcement	Create regular review meeting for Healthy City Indicators against targets, at least once a year	Integrated Command and Control Centre	Smart Health Working Group
	Engaging Citizens	Share progress on indicators on Indore Smart City Website	ISCDL, ICCC	KPMG

ANNEX D: Costing Workbook and Costing Actions

Guidelines for Costing

This sheet provides details on how to calculate costs for each activity. Please write down any differences in calculations you may need to make so that we can understand how to compare costs between sectors.

General Instructions

BHC suggests using an "ingredients" approach to costing each activity. Within the costing field, the term "ingredients" refers to the resources needed to implement a program. The approach to cost analysis that focuses on identifying and then valuing those ingredients is known as the "Ingredients Method" (Levin, McEwan, Belfield, Bowden, & Shand, 2018).

Paraphrasing Institute of Education Sciences (2020), the general steps to follow are:

Phase 1: Identify Program Ingredients

A. Clarify the model for the activity - scope, timeframe, et.
B. Choose the perspective(s) - who is accruing the costs? In this case we want to know what this will cost the government.
C. Describe key ingredients - this means personnel, facilities, equipment, supplies or other inputs - and then describe them in characteristics and quantity.

Phase 2: Price the Ingredients
A. Identify or estimate a price for each ingredient - value each program resource by estimating or determining their prices for the period.
B. Adjust costs for your context.

Phase 3: Create and Use the Cost Estimate
C. Calculate total costs

Costing Summary

	Sectors/Partners Involved in the Costing	Estimated Yearly Costs	Estimated Total for Five Years (2023-2028)*	Additional Information Needs/Caveats
#1: Strengthening healthy food systems for all citizens	ISCDL, Health, WCD, Education External Partners: MPVHA, Acropolis	₹ 11,308,000	₹ 23,188,000	
#2: Increasing community participation for better air quality	IMC, MPPCB External Partners: CAC, CII, ISSW, Acropolis	₹ 10,967,000	₹ 22,231,000	Many activity costs are not included as they are already covered under donor projects.
#3: Improving maternal and child health through a culture of data	Health, ISCDL (ICCC) External Partner: Samagra	₹ 3,420,000	₹ 3,420,000	Primarily includes activities covered by an external donor project. Does not include cost of activities under NUHM. Missing costs for some proposed sub-actions relating to new technology, including ANM app and improvements to nutrition data systems.
#4: Making Indore a child friendly city	ISCDL, Health, WCD, Education External Partners: MPVHA, Basix	₹ 33,703,120	₹ 35,023,120	No activities were planned to be done more than once during 5 years; this will need to be reviewed for accuracy. No nutrition data systems activities are costed, but may be required.

#5: Creating a more diverse and equitable transport infrastructure	IMC, ISCDL External Partner: Acropolis	₹ 7,200,000	₹ 14,200,000	Funds collected from traffic violations can potentially be used for covering these costs.
#6: Exploring how to link low-income livelihoods to the circular waste economy	IMC External Partners: Basix, Acropolis	₹ 1,683,000	₹ 8,415,000	Many of the proposed sub-activities will need inputs from the private sector. They will also generate revenue, so the costing equation may need to be different for this sub-action. Currently only costs for livelihoods and youth training are included here.
#7: Sustaining municipal leadership for a healthy Indore	Uncosted - ISCDL, IMC, Health			Still needs to be costed.

*No adjustments made for inflation or depreciation. All costs are naïve to currency conversion if foreign donors are providing funds.

Costing of Action #1: Strengthening healthy food systems for all citizens

Responsible Departments: Health, ISCDL; Partners: Acropolis, MPVHA

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
				A	B	C	D	E	F	G	H	I	
1	Providing a safe, green and legalized hawking space to local hawkers who can sell safe, healthy/organic and staple food to the citizens.	Identifying hawking spaces	# hawking spaces allotted		1	18	1	18	50,000	5,000	990,000	990,000	
2	Taking feedback from citizens in underserved neighborhoods on locations for healthy food hawking and the type of support needed to allow those who want to start such businesses. Promoting awareness among citizens on healthy eating in the neighborhoods where these legal hawking areas are set up.							0					No cost
3	Training of hawkers on food safety and preparing and selling nutritious food.	Developing simple training module	Training module developed & printed					0	100	10	0	0	

#	Description	Activity	Indicator	Resources									Notes
		Training of hawkers on food safety and healthy food options	# hawkers trained		50	10	1	500	400	40	220,000	220,000	
		Organizing Healthy Food Day monthly	# Healthy food days organized					0		0	0	0	No cost
4	Verified healthy food rating on food delivery companies like Zomato and Swiggy can be introduced in Indore.							0		0	0	0	No cost
5	NABL Testing and Certification for all hawkers, restaurants and street vendors	GIS Mapping and NABL Testing + Certification	# certified food units		5	80	1	400	1,500	150	660,000	660,000	
6	Sanitation and hygiene audit of all vendors (Shubhankar Foundation, Eat Right Campaign)	Sanitation and Hygiene Audit, based on secondary GIS Data (Smart City)	# vendors audited	Volunteers, Data Collection Application	5	80	1	400	1,500	150	660,000	660,000	
7	Making Indore COTPA Compliant (4,5,6a,6b)	GIS Mapping of all COTPA vendors	Map of vendors in Indore Urban, Heat Map, Distance from Educational Institute (School, College, Coaching)	GIS Mapping Application Volunteers (400)	5	80	1	400	12,000	1,200	5,280,000	5,280,000	

		Awareness drive and Smart Stickers	Cover 16000 POIs (Cinema Halls, Restaurants etc.), conduct awareness drive with Educational Institutions	Smart Signages Printing, Volunteers (400)	200	80	1	16,000	30	3	528,000	528,000	
8	Vendor licensing of tobacco sellers in the city for better accountability and enforcement.	Licensing of tobacco sellers	# Tobacco sellers given license to sell			1	18	5	18	50,000	5,000	990,000	4,950,000	18 Zones of the city
9	Public awareness on harms of tobacco using multi-media	Genra; awareness and No-tobacco day celebration	Coverage in e-media, organizing mid-media in each zone			1	18	5	18	100,000	10,000	1,980,000	9,900,000	18 Zones of the city
	Total Estimated Costs											11,308,000	₹ 23,188,000	

Costing of Action #2: Increasing community participation for better air quality

Responsible Departments: IMC, MPPCB; Partners: CAC, CII, ISSW, Acropolis

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
				A	B	C	D	E	F	G	H	I	
1	Making the citizens aware about traffic norms and its impact on their city's environment so that they themselves support the city by complying to regulations e.g. Citizens getting their vehicles checked every 3 months to ensure that emissions are within permissible levels.	Public Awareness through multimedia (Marathon, Human Chain, Street play, Hoardings, Radio messages, Integrate it with 311 App)	Reduction in violations of traffic rules and regulations (percentage)	Organizing marathon/ street play through volunteers/NGOs during road safety week.	1	18	5	18	20,000	2,000	396,000	1,980,000	Zone-wise
				hoardings at strategic locations in the city	1	1	1	1	60,000	6,000	66,000	66,000	The city administration can decide proportion of penalties/PUC to go into IEC, capacity building
				development of message for hoardings and radio messages regarding reducing vehicular pollution, regular PUC etc. (10 jingles)	10	1	1	10	20,000	2,000	220,000	220,000	citywise

		Enforcement of traffic rules and regulations by traffic police	Increase in number of vehicles getting PUC.	Orientation of traffic police on enforcement		1	1	1	1	50,000	5,000	55,000	55,000 citywise
2	Creating pathways for quality data sharing which could be used for surveillance, management and development of policies.	Create an open data platform to make data on pollution and sources accessible.	A city based open data platform created and used by the city	City based application which gets data from all sensors and MPPCB monitoring stations		1	1	1	1	500,000	50,000	550,000	550,000 citywise
		Capacity building for/by government officials and local scientists on source attribution methods, air quality, and health.	1. # of people trained, educated on tools, approaches, and/or methods for improving air quality and identifying air pollution-climate connections because of USG assistance 2. # of USG-funded events designed to build support for air quality actions among key actors in air quality			1	2	2	2	200,000	20,000	440,000	880,000 citywise

3	Generating awareness in the community about green transport, tree plantation, roof top gardens, hanging gardens etc. This can also be linked with the Indore Municipal Corporation's effort of building a green city though various schemes including subsidies on IMC fees for green building concept.	Tree plantation campaign on roads, academic institutions, government buildings and communities. Including plants as gift, reward and recognition to "ward level green committees".	Number of trees planted per year of activity implemen-tation	Plant saplings, mesh, tankers for watering, manure, gardener		500	84	2	42,000	200	20	9,240,000	18,480,000	wardwise
4	encouraging green/sustainable transport in the city. This could be done at individual level (walking, cycling) as well as community level (carpooling, using CNG vehicles etc.)	car pooling, bus for shopkeepers. Subsidy to EV owners on registration, taxes etc.		Radio, public consultation		All the wards		1						

5	Creating green schools by training the students and teachers about the impacts of air pollution on human health and how they can support to improve the air they breathe.	MAP-AQ will host Source Focus Workshops and summer school sessions for local students, researchers & partners	5.1. # of people trained, educated on tools, approaches, and/or methods for improving air quality and identifying air pollution-climate connections because of USG assistance	ward wise facilitators, school level trainers, ward level environment committee		All the wards	3							To be done by CAC
			5.2. # of USG-funded events designed to build support for air quality actions among key actors in air quality											
6	Training and engaging community workers as clean air guides to measure air pollution, identify sources of emissions, explore mitigation efforts and make citizens aware of the effect of air pollution on their health.	Organizing training in batches of 25. total 50 Clean Air Guides	50 trained Clean Air Guides	Training workshop, resource person, training material, venue, refreshment		2		1							

		Engaging Clean Air Guides for source identification and mitigation	50 CAGs engaged	Stipend			2						
7	Generating community level data. Installing Low cost sensors among the community and building their capacity for data collection, so that they are aware of the increase in air pollution level, the impact it can have on their health and what precautions they should take to reduce exposure to air pollutants. The collected data would be linked to ICCC for multi sector data access.	Conduct source apportionment study in Indore and immersion inventories			5 locations, for manual monitoring & 3 locations for real time monitoring, survey for emission inventory	All the wards	3						LCS already installed by BHC and CII. Cost not added. This amount was added under CAC
8	Conduct a study which compares electric vehicles v/s CNGs based on sustainability, durability, efficacy and impact on the environment					All the wards	1						

9	Enhanced stakeholder knowledge of high-impact actions to address root causes of main air pollution sources.	Build up knowledge of local scientists					All the wards	1						
		Engage with health, climate, gender sector					All the wards	1						Activities covered under CAC hence budget not reflected
		Enhanced awareness within the climate sector of key sources of air pollution and associated climate impacts	More widely shared awareness of top pollution sources among key allies in pilot cities.				All the wards	1						Activities covered under CAC hence budget not reflected
		Identify root causes of sources					All the wards	1						Activities covered under CAC hence budget not reflected
		Identify interventions					All the wards	1						Activities covered under CAC hence budget not reflected
10	Promote strategic, sustainable multi-sector coalitions to advance adoption of the high-impact clean air action plan.	Identify the coalition: key decision-makers who, collectively, can enact the intervention.					All the wards	1						Activities covered under CAC hence budget not reflected

		Create coalition training materials.				All the wards	1								Activities covered under CAC hence budget not reflected
		Engage and influence the targeted individuals in the Coalition.				All the wards	1								Activities covered under CAC hence budget not reflected
11	Climate co-benefits and opportunities leveraged.	Integrate climate considerations across the Catalyst model.				All the wards	1								Activities covered under CAC hence budget not reflected
12	Women empowered as clean air catalysts.	Providing women clean air champions with trainings and opportunities to be involved in decision-making processes.	# of women participating in decision-making processes relating to air quality management and advancement of clean air solutions as a result of Clean Air Catalyst activities			All the wards	On-going								Activities covered under CAC hence budget not reflected
	Total Estimated Costs													**10,967,000**	**₹ 22,231,000**

Does not include cost of some activities under CAC project

Costing of Action #3: Improving maternal and child health through a culture of data

Responsible Departments: Health, ISCDL (ICCC); Partner: Samagra

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
					A	B	C	D	E	F	G	H	I	
1	Supportive Supervision & Referral Mechanism: Training and capacity building of the staff on data collection, analysis and application use by MGM college and Nursing College student volunteers.	Development of module of training on supportive supervision and Referral Mechanism	Training Modules (2)	Module				1	2	75,000		150,000	150,000	All these activities will be completed in year 1
		Software development on Referral Mechanism	Application Software	Software development				1	1	1,000,000		1,000,000	1,000,000	
		Training of Medical Officers	60 Medical Officers trained	Batch (30 each)				1	3	30,000		90,000	90,000	
		Training of ANMs and Staff Nurses	270 ANMs, Staff Nurses trained	Batch (30 each)				1	9	30,000		270,000	270,000	
		Training of ASHAs	900 ASHAs trained	Batch (30 each)				1	30	20,000		600,000	600,000	

		Monthly Review meeting All Nodal Officers and Medical Officers of UPHCs for progress update on Supportive Supervision and Referral Mechanism	12 Monthly Meetings					1	12	10,000		120,000	120,000
		Meeting of ANM, AWW and ASHA	12 Monthly Meetings	Batch (45 each)				1	9	10,000		90,000	90,000
2	Meetings between stakeholders to come to a mutual agreement on the software/data backbone to allow data integration.	Monthly meeting of ICDS and Health FLWs for sharing of data	12 Monthly Meetings					1	12	5,000		60,000	60,000
3	National/State level decision to allow data integration into ICCC	Liaison with state and national level authorities	Consensus on indicators					1	1	100,000		100,000	100,000
		Sharing the set of indicators of various department with the state and national level authorities which are to be integrated with ICCC											

		Ensure issuance the letter of permission from the state and national authorities to city authorities												
4	Appointing a Nodal officer in the city to facilitate data sharing between sectors until it is not integrated with ICCC	Sharing the concept with the multi sector steering committee for the in-principal approval	Nodal Officer appointed											No additional cost
		Steering committee will nominate the nodal officer which would be responsible for sharing the data with the central data dashboard												No additional cost
5	Assessment of Dashboard	Identification of gaps in the existing dashboard from the FLWs and the department data handlers	Gap Analysis											Cost to be borne by ISCDL
		Submit recommendations with the state and national authorities for modification	Report											

6	Strengthen data privacy guidelines to safeguard individual privacy	Study the existing privacy guidelines and the gaps for appropriate actions from the state or national authorities	Report										
7	Training on data integration for ICCC.	Sharing the concept with state and national authorities for approval	Training Module developed and trainings organized				1	1	100,000		100,000	100,000	Activity will be completed in year 1
		Identification of data handlers and set of indicators to be integrated with the ICCC											
		development of module of training											
		Identification of resource persons and the nodal agency for the training											
		follow up and refresher trainings											
8	Establishment of new UPHCs as per 15th Finance Commission	60 New UPHCs to be established in Indore	60 UPHCs set up										Funds under NUHM will be utilized

		Establishment of sub health center at population of 10,000	Additional; sub health centers set up	Policy decision required for the establishment of Sub Health center, Similar to Basti Dawa Khana 3.								
		Study tour to Odisha, Telangana, Surat & Pune	4 Study Tours conducted	Study Tour of Nodal Officers & select Medical Officers				4	200,000		800,000	800,000	
9	Urban Health Common Coordination Committee	Interdepartmental Coordination among Health and all key departments on a quarterly basis	4 Quarterly Meetings					4	10,000		40,000	40,000	

Total Estimated Costs										**3,420,000**	**₹ 3,420,000**

Does not include cost of activities under NUHM

Costing of Action #4: Making Indore a child friendly city

Responsible Departments: ISCDL, Health, WCD, Education; Partner: MPVHA, Basix

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
					A	B	C	D	E	F	G	H	I	
1	Refresher Training and capacity building of 3 As (ASHA, Anganwadi workers and ANM, Primary School Teachers) to bridge the gap in program implementation through supportive supervision. This will create a better coordination across departments regarding safe deliveries, better nutrition, immunization and basic healthcare services.	Training of ASHA	Number of ASHA trained out of 650	Training and capacity building sessions using existing module	650		1	1	650	800	80	572,000	572,000	Citywise
		Training of Anganwadi worker	Number of AWW trained out of 774	Training and capacity building sessions using existing module	774		1	1	774	800	80	681,120	681,120	Citywise
		Training of ANM	Number of ANM trained out of 250	Training and capacity building sessions using existing module	250		1	1	250	800	80	220,000	220,000	Citywise

2	Infrastructure development of Anganwadi in Indore City	Painting of Anganwadi Centers	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building	Painting	4	40	1	160	15,000	1,500	2,640,000	2,640,000	
		Recreational Activities (jhula, fisalpatt, sea saw etc.)	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building	Jhula, Fisalpatti, sea saw etc.	4	40	1	160	10,000	1,000	1,760,000	1,760,000	
		Installing of Solar Panels	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building	Solar Panel	4	40	1	160	20,000	2,000	3,520,000	3,520,000	
		Installing of Fan & Lights	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building	Fan & Lights	4	40	1	160	2,000	200	352,000	352,000	

		Installation of Water Purifier	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building	Water purifier	4	40	1	160	3,000	300	2,508,000	2,508,000	
		Furniture	Number of Anganwadis with improved infrastructure out of 160 government owned AWC building		4	40	1	160	10,000	1,000	1,760,000	1,760,000	
3	Creating safe and green spaces around communities, playground facilities in schools and pedestrian access around schools for growing children.	Identifying feasible unused government owned spaces to develop for child friendly greenspaces/parks/playgrounds	Number of parks/green spaces developed	Based on assessment	3	18	1	54	300,000	30,000	17,820,000	17,820,000	Zone-wise, estimates based on Kaya Kalp

#	Activity												Remarks
4	Improving citizen engagement and participation through awareness sessions with the community groups by FLWs and CBOs regarding institutional births, importance of immunization, nutrition in first 1000 days of birth, identification of health risks, importance of sanitation and hygiene and government services and programs on immunization, Integrated Child Development Services (ICDS), Nutrition Rehabilitation Centers (NRC), Right to Education act (RTE) etc.	Nutritional Support to the Malnourished Children	200 severely malnourished children	Trainers, meals for participants Audio-visual aids, grant to family to compen-sate for wage loss, supplemen-tary food	5	40	3	200	3,000	300	660,000	1,980,000	Citywise, Estimates are based on 2021-2022 SAM number in the city. This may need to be repeated ever year and denominator to change accordingly
5	Promotion of non-motorized transport in the city.							-					Covered in Transport action
6	implementing the Health Promoting Schools programs by department of education in the remaining schools of Indore.	Training & Capacity Building of Primary Teachers of government school	Number of teachers trained	Training Place, Meals & Refreshment, Resource Material, Audio-Visual aids etc.	1	500	1	500	1,000	100	550,000	550,000	

	Printing of Training Manual	Number of manuals distributed in primary schools	Training Manual	1	500	1	500	200	20	110,000	110,000	
	First Aid Kit	Number of First Aid Kits distributed	First Aid Kit	1	500	1	500	1,000	100	550,000	550,000	
Total Estimated Costs										**33,703,120**	**₹ 35,023,120**	

Costing of Action #5: Creating a more diverse and equitable transport infrastructure

Responsible Departments: IMC, ISCDL, Transport, AISTCL; Partner: Acropolis

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
				A	B	C	D	E	F	G	H	I	
1	Developing cycling and pedestrian infrastructure between key points in the city where a diverse income range of citizens can use them as a viable alternative to motor vehicles		Additional km. of cycling and pedestrian pathway added in the city	Engagement of agency for construction of pathways			3	10 km	200,000		2,000,000	6,000,000	
2	Linking waste management to pathways, to keep them clean and usable		Additional km. of concrete narrow streets in slums	Engagement of agency for construction of streets			3	20 streets	50,000		1,000,000	3,000,000	
3	Develop commercial areas into no vehicle zone. Old city area can be taken up as a pilot.		Additional parking sites developed in commercial areas	Engagement of agency for developing parking sites				2 parking slots	100,000		200,000	200,000	
4	Developing viable network of rental bikes and prams to be used on these paths		# sites added for rented bikes	Engaging agencies for rented bikes				5 sites	500,000		2,500,000	2,500,000	

#	Activity	Strategy	Output/Indicator	Resources										
5	Installation of smart sensors for lights to reduce power usage when paths not used	Research and Development, Prototyping	Installation of 10 smart path lights for reduced power consumption	Smart sensors and agency for installation					10 sites	50,000		500,000	500,000	
6	Enforcement of rules relating to motor vehicles staying off sidewalks and cycling tracks, and other public safety enforcement especially to ensure women feel safe walking	Engaging CBOs / Enforcement by traffic police	# sites cleared of encroach-ment						10 sites	20,000		200,000	200,000	
7	Cyclothon and 1/5k campaigns to increase recreational use and solicit citizen user feedback		Annual Cyclothon organized	Coordination agency, volunteers, message placards					5	100,000		500,000	500,000	
8	Inclusion of pedestrian and cycle safety information in road license tests as a pilot in Indore city		Pedestrian and cycle safety information prepared and used	Information sheets					5,000	10		50,000	50,000	
9	Mount effective response to CRS complaints regarding street lights, public safety, and blocked paths via ICCC		# complaints relating to street lights/public safety registered/ resolved										0	No costs
10	Red Light, Engine Off Campaign with student volunteers, "Thanks for saving the environment"	20 major circles covered	20000 stickers/ badges	Coordination agency, volunteers, message placards				5	20	5,000		100,000	500,000	

11	Health and safety of traffic personnel	Health checkups	Annual Health Checkup of traffic police organized	Identify and equip hospitals/ health centers for annual check-up of traffic police			5	500	200		100,000	500,000	
		Safety kits and information brochure distributed	# Safety kits and information brochure distributed	Safety kits, information brochure			5	500	100		50,000	250,000	
		Rotational Duty (based on low AQI zone mapping)	Order and raster of duties by traffic police									0	No costs
	Total Estimated Costs										7,200,000	₹ 14,200,000	

Funds collected on violation of traffic used can be used

Costing of Action #6: Exploring how to link low-income livelihoods to the circular waste economy

Responsible Departments: IMC, NSDC; Partners involved: Basix,

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
				A	B	C	D	E	F	G	H	I	
1	Create PPP for revenue generation around recyclable plastics, cements and rubbers which can be used to create mobile pavers	Costing Pending						-		-	-	-	
2	Train slum dwellers interested in this work to create the pavers as well	Costing Pending											
3	Pavers will make up new sidewalks across city, and can be moved and re-laid as needed when construction plans uproot a sidewalk	Costing Pending											
4	Possibly add microfinance or bank account creation support for those newly entering workforce to help them enter formal economy	Costing Pending											

5	Providing other jobs training to prepare low income youth for jobs in the circular economy, including composting, bio-methanation, etc. capitalizing on Indore's leadership in this area.	Volunteering Drive, Establishing hyperlocal collection, segregation, treatment innovations	Incubating 10 startups in CWE, Training workshop for 500 local youth	5 trainers, training venue, incubation lab and co-working space, mentorship	16	16	5	256	5,000	500	1,408,000	7,040,000	
6	Training of women from urban poor communities on income generation activities	Stitching of sustainable cotton cloth bags which can be used as shopping bags, carry bags in place of plastic and paper bags.	Number of women who received livelihood training	trainers, venue/community space, cotton cloth material, sewing machine, thread, needle, scissors, cloth chains and other supplies	1	5	5	25	50,000	5,000	275,000	1,375,000	
7	Ensure 3rs and other key recycling messaging is getting taught in primary schools across the city												
	Total Estimated Costs										1,683,000	8,415,000	

Costing is covered under child friendly city HPS.

Costing of Action #7: Sustaining municipal leadership

No	Goal	Activities required	Output	Ingredients	Quantity per ward/zone/city	SCOPE: In how many wards/zone/city will this be needed?	TIMELINE: How many years is this needed?	Total Units Per Year (Multiply BxC)	Cost per unit (Rs.)	Overhead cost (Management and Admin) (@ 10%)	COST PER YEAR (E*(F+G)) (INR)	TOTAL COSTS (Multiply DxH) INR	Remarks
				A	B	C	D	E	F	G	H	I	
1	Provide training to IAS and senior city officials on systems thinking	Costing Pending						0		0	0	0	
2	Define funding support stream for smart health working group and any other municipal level secretariat needed to oversee M&E and leadership of Healthy Indore effort	Costing Pending											
3	Defining, approving and using a M&E framework for a Health Indore												
4	Reporting on the progress to citizens on a regular basis												
5	Create a Ward level multi-sector coordination committee to support the implementation of the plan												
6	Via committee, support equity indicator review to ensure each ward is getting the right interventions												
7	Provide forum for citizens in each ward to share priority needs, each workplanning cycle												
8	Work on data integration into ICCC of all key indicators from Smart Health Working group sectors												
9	Create regular review meeting for Healthy City Indicators against targets, at least once a year												
10	Share progress on indicators on Indore Smart City Website												
	Total Estimated Costs										0	0	

ANNEX E: Monitoring Indicators

No.	Coherent Action	Process and output indicators	Total/end goal for this indicator	Yearly target needed to reach this goal in 5 years	Data sources for these indicators	Impact indicators	What percent of this indicator is influenced by public sector/donor partners?	What is the maximum possible change we could expect to have for this indicator?	Yearly target needed to reach the expected amount of change in 5 years	Data sources for these indicators
1	Strengthening healthy food systems for all citizens	# Hawking spaces allotted for food vendors				Reduction in food borne infections				
		# Hawkers trained on food safety and hygiene								
		# Healthy food days organized in a year				Reduction in overweight/obese persons				
		# Audit and certified food units following FSSAI guidelines								
		# Tobacco sellers given license to sell				Reduction in prevalence of tobacco use				
2	Increasing community participation for better air quality	# Violations of traffic rules and regulations in the year				Improvement in air quality (reduction in PM 2.5)				
		# Vehicles getting check-up for PUC				Increase in number of days with good/satisfactory air quality				
		# Trees planted in the year								
		# Community volunteers trained as clean air guides				Reduction in asthma and childhood pneumonia				
3	Improving maternal and child health through a culture of data	# Medical officers, ANMs, ASHAs, AWWs trained on data management				Improvement in ANC, institutional delivery, and primary immunization coverage				
		# Monthly review meetings held in a year								
		# Additional UPHCs set up and functional								
		# Additional sub health centers set up and functional				Improvement in access to primary healthcare services (population covered, distance traveled)				

4	Making Indore a child friendly city	# ANMs, ASHAs, AWWs received refresher training on child care				Reduction in under 5 malnutrition				
		# Anganwadis with improved infrastructure in government owned AWC								
		# Additional parks/green spaces developed								
		# Severely malnourished children followed up								
		# Teachers in primary schools trained on health promotion				Improvement in sanitation, personal hygiene, and health of school going children				
		# First Aid Kits distributed in primary schools								
5	Creating a more diverse and equitable transport infrastructure	Additional km. of cycling and pedestrian pathway added in the city				Increase in physical activity of citizens				
		Additional km. of concrete narrow streets made in slums								
		Additional parking sites developed in commercial areas								
		# Sites added for rented bikes								
		# Smart path lights installed				Reduction in traffic injuries				
		# Sites cleared of encroachment								
		Annual Cyclothon organized								
		# Complaints relating to street lights/public safety registered/resolved								
		# Traffic police who got annual health check-up done				Reduction in incidence of respiratory diseases among traffic police				
		# Safety kits and information brochures distributed to traffic police								

6	Exploring how to link low-income livelihoods to the circular waste economy	*** *Should try to align with Swachh Bharat process indicators where possible*				Reduction (in tons) of total waste sent to landfills in Indore				
		# Citizens enrolled in livelihoods training programs relating to sustainable waste economy/re-use, recycling, composting, or waste reduction								
		# Indore schools teaching 3Rs concepts				Recycling rate of municipal waste				
		# Pavers used for sidewalks that are from recycled materials								
		# Microloans provided to start up sustainable waste reduction small businesses				Total yearly greenhouse gas emissions				
						% of unemployed re-trained for green employment				

BUILDING HEALTHY CITIES