CITIES INSIGHTS REPORT
An Insight on Smart Cities Approach towards Inclusive Urban Development
May 2020
Cities Insights Report

An Insight on Smart Cities Approach towards Inclusive Urban Development

Implemented By:
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MESSAGE

India’s urban narrative in the past decades is filled with stories of progress and prosperity. A key ingredient in that narrative has been the constant endeavour to improve the quality of life for all. As India grows, so does its cities, and so are the million dreams that reside in them. As such, it is imperative that the urban agenda for cities of today and tomorrow should unequivocally focus on embracing the principles of inclusion in all walks of life. To realize the target of a five trillion dollar economy it will be quintessential to create environments and systems in our cities that harness the innate potential of every individual, irrespective of their differences and abilities.

Smart Cities across India have set forth admirable examples in built environment, digital infrastructures, and innovative practices that are testament of inclusive development for all. Some of these standout initiatives have been identified by the National Institute of Urban Affairs in this study. The report investigates the economic and social inequity faced by persons with disabilities and other marginalized communities living in cities by comparing and contrasting global and national strategies that have prioritized universal access to urban services and infrastructure. The report also identifies pathways that lead to bridging the development divide and addressing the barriers faced by persons with disabilities (irrespective of age, gender and ability). More importantly, the report advocates for an integrated, participatory, and collaborative approach for city stakeholders, and proposes various mechanism i.e. city-wide audit of infrastructures services, leverage data and IT solutions, strengthen local partnerships, and develop robust evaluation platforms to monitor the progress of inclusive interventions at city level.

This report was made possible by the efforts of the team working on the Building Accessible Safe Inclusive Indian Cities program at NIUA. I would like to especially acknowledge the efforts of Sh. Hitesh Vaidya, Director, NIUA for conceptualizing this pertinent study and focussing on the issues of the marginalized esp. persons with disabilities.

I hope that this report and its findings will prove useful to city administrators, leaders, researchers, and their entire ecosystem of stakeholders in the urban sector in mainstreaming the dialogue on inclusion and building cities for all.

(Durga Shanker Mishra)

New Delhi
16 June, 2021
FOREWORD

Global estimates predict that nearly 15% of the world population has some form of physical disability. These estimates increase substantially if you account for transient disabilities or disabilities related to age, to nearly 25%. It is a fact that persons with disabilities face widespread lack of accessibility to basic services and infrastructure across all walks of life. The informational, cultural and attitudinal barriers further deepen these problems and contribute to the exclusion and marginalization of persons with disabilities in urban environments.

Future cities need to ensure that basic urban infrastructures and services are accessible, user-friendly and inclusive of all people’s needs irrespective of age, ability and gender. There is a need to view accessibility as an investment as a public good that contributes towards the larger goal of ensuring resilient, sustainable and inclusive urban development.

The transformative actions being taken under Building Accessible Safe Inclusive Indian Cities (BASIIC) Programme at National Institute of Urban Affairs (NIUA) aims to bring catalytic changes towards the perception of Disability Inclusive and Accessible Urban Development (DIAUD). The technical assistance component of the programme in partnership with smart cities focuses on bringing policy/project level interventions to improve the access to basic services and urban infrastructure while improving the overall standard and quality of life in urban environments.

I am grateful to the smart cities for actively participating in the mapping exercise conducted by the BASIIC Programme. The key findings of the exercise and the efforts undertaken by the smart cities highlight the need to bring grass root level changes to improve the accessibility, safety and inclusivity aspects of an urban environment. The ongoing endeavours would also play a critical role in building the capacities of the city’s stakeholders and leveraging technical assistance for replicating the innovative and inclusive interventions at city wide scale. I believe the collaborative efforts of the Smart Cities Mission and BASIIC Programme would succeed in bringing the actionable changes from learning to implementation scale.

Date : 15.06.2021
Place : New Delhi
Urbanization is one of the most important global trends of the 21st century, which also brings immense opportunities to rethink the agenda for urban development. One-fifth of the total global population i.e. between 110 million and 190 million people experience significant disabilities. Persons with Disabilities (PwDs) continue to face challenges due to a widespread lack of access to services and infrastructure leading to spatial, economic and social exclusion. These barriers not only disproportionately impact the rates of poverty, deprivation and exclusion faced by PwDs, but also affects the development of the communities as a whole. According to a research by International Labor Organization (ILO), the cost of excluding PwDs leads to loss of nearly 7% of the national GDP. This highlights the need to invest on building accessible urban environment and services. Urban infrastructure and services if designed and built following the norms of accessibility or inclusivity from inception to implementation of the project; bear nearly negligible additional cost as compared to rebuilding, renovating or redesigning the existing infrastructure. There is a need to promote this strategy to curb the existing barriers; build inclusive cities and promote active participation of PwDs in all aspects of an urban environment.

The Building Accessible Safe Inclusive Indian Cities (BASIIC) programme at National Institute of Urban Affairs (NIUA) supported by the Department for International Development (DFID), focusses on the need to redesign urban policies and projects with respect to the barriers faced by persons with disability (irrespective of age, ability and gender). The programme aims to achieve this through specific policy level interventions, pilot demonstration of innovative solutions, build capacities of the stakeholders and sustaining the process through application of robust monitoring and evaluation mechanism.

The Cities Insights Report is an effort towards bringing the attention of smart cities to focus on disability inclusive urban development. It highlights the existing urbanization trend, its unintended consequences of rising barriers towards PwDs. The deep dives on the efforts of thirteen participating smart cities in developing accessible, safe and inclusive cities. The methodological assessment has led to formulate a list of recommendations for the cities to adopt disability inclusive approach for urban development. The report aims to support the programme partner cities in implementing similar interventions/activities in collaboration with BASIIC programme.

We hope that readers of this report will find it to be a vital resource to explore various urban innovative interventions and adopt the recommendations/approaches towards creating a sustainable and inclusive urban environment. This report has been made possible due to the hard work of the BASIIC team, but most of all is an outcome of efforts undertaken by Ms. Prabha Roy, which has been instrumental in analysing the data from the cities, drawing insights, framing of recommendations to adopt the approach of disability inclusive urban development and curating the noteworthy contents of the report.

Date : May 2020
Place : New Delhi

Mr. Hitesh Vaidya
Director, NIUA
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<td>AIC</td>
<td>Accessible Indian Campaign</td>
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<tr>
<td>AMRUT</td>
<td>Atal Mission for Rejuvenation and Urban Transformation</td>
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<tr>
<td>BASIIC</td>
<td>Building Accessible, Safe and Inclusive Indian Cities</td>
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<tr>
<td>CDP</td>
<td>City Development Plan</td>
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<td>CMP</td>
<td>Comprehensive Mobility Plan</td>
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<td>CSP</td>
<td>City Sanitation Plan</td>
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<tr>
<td>DEPwD</td>
<td>Department of Empowerment of Persons with Disabilities</td>
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<td>DFID</td>
<td>Department for International Development</td>
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<td>DID</td>
<td>Disability Inclusive Infrastructure</td>
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<td>DMP</td>
<td>Disaster Management Plan</td>
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<td>DPO</td>
<td>Disabled Peoples Organization</td>
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<td>GOI</td>
<td>Government of India</td>
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<td>HMP</td>
<td>Heritage Management Plan</td>
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<td>ICCC</td>
<td>Integrated Command Control Centre</td>
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<td>MoHUA</td>
<td>Ministry of Housing &amp; Urban Affairs</td>
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<td>MoSJE</td>
<td>Ministry of Social Justice &amp; Empowerment</td>
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<td>Persons with Disabilities</td>
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<td>Right of Persons with Disabilities</td>
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<td>SCM</td>
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<td>SRP</td>
<td>Slum Redevelopment Plan</td>
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<td>TASU</td>
<td>Technical Assistance &amp; Support Unit</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UNCRPD</td>
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<td>VDA</td>
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<td>VNN</td>
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According to the United Nations Convention on the Rights of Persons with Disabilities (CRPD), ‘disability’ results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others. An impairment on its own would not lead to a disability should there be a completely inclusive and comprehensively accessible environment. Currently, persons with disabilities and elderly persons comprise over 25 per cent of the total global population. By 2050, this number is estimated to grow over 2 billion worldwide. Considering persons with disabilities as one of the largest minority groups in the world, it is estimated to represent over 15 per cent (approximately 1.5 billion people) of the world’s population. As an individual or as communities, they are more likely to experience adverse socioeconomic outcomes than persons without disabilities. Physical, Behavioral, Attitudinal and Informational Barriers pose significant difficulties in claiming rights, equal access to opportunities and urban services (access to education, health care services, employment, and social protection).

Lack of data and research-based evidence creates a significant barrier for policy and decision-makers, which in turn influence the ability of persons with disabilities to access equal rights to basic urban services. Lack of participation and engagement of such communities within the urban program/project cycle as well as in decision-making process demonstrate a significant challenge and thus the initiatives do not necessary caters to the barriers and challenges faced by them. There is a need to fill the gap between existing policies and practices through adopting evidence-based inclusive planning approach and making urban environment more accessible, connected, healthy, resilient, safe and secure for all irrespective of age, gender and ability. Improved access to the urban environment can facilitate the participation of persons with disabilities in economic, social and political aspects and enhance their participation in the decision making process thus mainstreaming the accessibility and inclusivity features since the project inception phase.

Since 2006, with the ratification of the UNCRPD along with the adoption of the Sustainable Development Goals (SDGs) countries across the globe are committed to promote inclusive development policies and programs and engage the active participation of persons with disabilities on an equal basis with others. Over the past few decades, theorists, policymakers, urban practitioners, urban planners, are trying to decode the strategy for designing and planning cities which is equitable for everyone. Several multilateral agencies like World Bank, ADB, USAID, DFID, etc. have been investing to identify and develop a strategy to bridge the gap in the policies and practices embraced for inclusive development. There is a clear indication of lack of on-ground technical knowledge, sensitization among city decision-makers/city leaders, etc. to adopt and effectively implement such strategies. This challenge is compounded by significant gaps in the lack of disaggregated data sets to make informed implementation decisions.

There is a need to ensure that cities are planned and designed based on an inclusive approach to provide universal access for urban services and infrastructure and bridge the development divide so that ‘No One is Left Behind’. ‘Disability-Inclusive Development’ (DID) approach should be adopted across all stages (planning, designing and implementation) of infrastructure programs and services for creating an inclusive and accessible environment for all.

Building Accessible Safe Inclusive Indian Cities (BASIC) Program’s objective is to focus on four different verticals namely policy formulation, city-level pilot demonstrations, capacity building and knowledge management as well as creating a knowledge network of the experts, institutions, civil societies and NGOs working across various facets of disability. It anticipates to identify the shortcomings and bridge the gap between existing policies and implementation practices adopted across national, state and city level in the Indian context of urban development. The program intends to actively engage with key stakeholders working on the disability sector on a common platform.
and demonstrate innovative solutions – technologies service delivery models in the realm of universal accessibility, safety and inclusive development. It also aims to work with two partner cities and provide technical assistance for on-ground implementation of innovative interventions at pilot scale. The learnings can be disseminated across other smart cities through adopting cross-learning approach. The program would also envision to build the capacities of city officials/authorities on the technical know-how of adopting inclusive planning and design approach for building Disability-Inclusive Infrastructure.

Cities Insights Report interlinks the drift of global urbanization and the need for adopting inclusive planning and designing approach by the cities. It bestows the economic and social case of urban inequity by highlighting the global and national scenario with approaches adopted at the global level to design cities to address the barriers faced by persons with disabilities irrespective of age, gender and ability. The report also edifies the City Assessment Framework developed to identify and shortlist smart cities for collaboration with BASIIC Program. The framework acknowledges the diversity of cities based on various indicators such as size, classification, characteristics, demographics, geographical location, intent under various ongoing schemes/mission. Based on the assessment framework, the pool of cities /UTs have been shortlisted. Efforts of these smart cities have been carefully analysed based on certain parameters to understand their initiatives focussing on disability-inclusive development and identify synergies with objectives of BASIIC Program for collaboration. Rather than adopting the concept of ‘one-size fits all’ City Specific Pilot Intervention strategy has been developed to identify synergies with program objectives. As per city-specific scenario, need-driven technical assistance would be provided to the partner cities.

Under the city-specific strategy, Technical Assistance & Support Unit (TASU) of BASIIC Program, intends to provide recommendations, prioritise projects for facilitating technical support and actions for on-ground implementation, building capacities of city stakeholders to adopt inclusive planning and design approach by the cities. The intervention strategy for partner cities aims to assist the city decision-makers/leaders in structuring inclusive policies/programs, enforcing evidence-based inclusive planning mechanism, enhancing active participation of persons with disabilities within the project cycle as well as in the decision making process, integrating accessibility, inclusivity and safety aspects across urban programs/projects. The proposed way forward for collaborating with partner cities highlights the involvement and cooperation of multi-stakeholder partnerships, conduct city-wide assessment, generation of disaggregated data to assist in the informed decision-making process, enable local partnerships, involve DPOs and develop a learning and evaluation platform to monitor the progress of defined activities and interventions.
Urbanization has been one of the most significant driving forces of recent global development. Current urbanization patterns are largely unsustainable in performance and hence, there is a need to re-define the social, economic and environmental fabric of our cities. Cities hold around 55% of the global population and currently account for approximately 80% of GDP generation worldwide. Cities represent the centre for innovation, economic growth, opportunities. Cities need to be sustainable, citizen-centric, economically vibrant, accessible, resilient and responsive to ensure that persons with disabilities irrespective of age ability and gender have equal access to basic services with meaningful participation in cities. City decision-makers/leaders need to make concerted efforts to address the need for inclusive urban transformation which would cater to all sections of the society, irrespective of their physical, social and economic status. Recognizing the current trends and opportunities in urban transformation, cities around the world must decide how to adapt their structures and services to be inclusive and accessible for all.

1.1 Barriers to Inclusive Development

Around 110-190 million (15% of the total global population) persons have been estimated suffering from some form of disability across urban areas, lending an urgency to the UN’s declaration that poor accessibility “presents a major challenge”. The barriers in the physical environment cause challenges while accessing urban services and infrastructure for persons with disabilities. It can range from blocked wheelchair ramps, buildings without lifts, inaccessible toilets, shops without step-free access, lack of access to services and education, etc. But the barriers are not limited only to the physical environment and can be broadly divided into the following three major categories.

- **Physical barriers**: Physical impairments, age-related disorders, chronic illness and visual impairments all significantly impact users’ ability to physically access services and infrastructure. Urban environment and infrastructure services, therefore, need to integrate Universal Design Elements such as dropped curbs, grab rails, ramps, allocated seating, appropriate signages & wayfinding, ramps and appropriate slopes, tactile urbanism, street furniture, etc to facilitate independent movement for such users.

- **Behavioural and Attitudinal barriers**: These are perhaps the most significant culturally accepted barriers which lead to discrimination, rise in stigma and marginalizing those with disabilities face. Whilst

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1. Global Urbanization

Figure 1: Global Footprint - 30 Most Populated Urban Agglomerations

Source: Dept. of Economic & Social Affairs: World Urbanization Prospects – 2014
many countries have adopted policies or legislation that protects or promotes the rights of persons with disabilities often such legislation does not translate into practice. Negative social and cultural attitudes towards persons with disabilities limit opportunities – this might include limited access to basic services and restricted exposure or limited engagement with social support and community networks.

- **Informational barriers**: Lack of access to information on services can prevent users from engaging with the urban environment or accessing urban services independently. Improving access to information and communication technology (ICT) can have huge impacts enabling users to make informed decisions when choosing services, advocating for better service provision, managing household budgeting, and avoiding fraudulent overbilling seen routinely in vulnerable households. Technology-based solutions could act as an instrument to bridge the digital and development divide in any urban environment.

To solve these barriers, there are four main models to approach the disability which can be defined namely as Charity model, Medical model, Social model and Human rights model. These models describe the approach to understand and solve the issues around disability. The first three focus on the source of the problem, whilst the last focuses on finding solutions and creating an enabling environment for all.

The BASIIC program intends to adopt the human rights approach towards disability, which promotes the understanding that persons with disabilities have the right to participate in all aspects of the society but may require adaptations to be made to ensure accessibility and inclusion. The policy-makers, urban planners, designers, economists, sociologists and other stakeholders must take responsibility for understanding the prevalent barriers exist and implement measures to address them. Physical design solutions alone are not enough to ensure inclusivity. Interventions need to be designed with the user perspective in mind, grounded in an understanding of the country’s legislative and policy environment; including its cultural, social and economic context. City decision-makers/leaders have the opportunity to adopt innovative urban solutions and enforcing global accessibility standards across urban policies and practices to embrace Disability-Inclusive development.

**1.2 Urbanization and Inclusive Development - Indian Context**

By the year 2041, 50 percent of India’s population will reside in urban areas and by 2050, it will comprise around 58 percent of the total global population. In India, around 3 crore persons are ‘disabled’ which is 2.21 percent of the total population. India should focus to achieve global targets and should imbibe the concept of inclusion in every aspect of development. The current trend necessitates developing sustainable and inclusive cities with a focus on providing equal access to services and amenities for all. The lack of adequate infrastructure and services has been recognized as one of the most important roadblocks on the path to rapid, equitable and sustainable growth in Indian cities.

Urbanization provides opportunities for social inclusion, equitable access to services and livelihood, engaging and mobilizing vulnerable population. It also provides an opportunity to design an enabling environment that facilitates independent access to urban services and infrastructure. Building cities and societies for human diversity, social inclusion, and equality should be considered as a niche area for city decision-makers/city leaders.
Local and national governments in India are exploring mechanisms to accelerate infrastructure development and services delivery process to cope with the growing needs resulting from the current urbanization trend. To align with the Sustainable Development Goals (SDGs), the Ministry of Housing and Urban Affairs (MoHUA) has also initiated its efforts by implementing various flagship missions and program (indicated in the below figure). The mentioned graph depicts the progress of ‘urban India’ which has undergone substantial evolution since the Inception of India’s First Five Year Plan.

With a vision and motivation to build green, sustainable, accessible, safe, technology-driven and digitally accessible cities; missions/schemes are committed to focusing on achieving inclusive and sustainable urban development.

Figure 2: Urban Development Initiatives in India

Source: Smart Cities Framework, CSTEP Report- 2015
Inclusive urban development is defined as an integrated approach encompassing sustainable, resilient, accessible, and affordable solutions to mitigate the challenges faced by vulnerable groups. It focuses on enhancing access to urban services and infrastructure through targeted investments for building Disability-Inclusive Infrastructure.

The role of the right-based model is to develop inclusive urban solutions that can act as a key innovation tool for adopting inclusive planning and design approach for cities and should address the barriers to inclusion that persons with disabilities experience. The World Bank defines ‘inclusion’ as a web of multiple spatial, social and economic factors.

- **Spatial inclusion:** Access to basic services e.g.: housing, water and sanitation.
- **Social Inclusion:** Access to rights and equal participation of the vulnerable groups.
- **Economic Inclusion:** Access to jobs and livelihood opportunities.

Poor planning, city design and unregulated urban development reinforce the need for co-designing programs, policies, and places by adopting inclusive planning and design principles in shaping the cities to be accessible for all. There is a need to focus on inclusive development to ensure that future cities provide opportunities and better living conditions for all as well as responses to the barriers experienced by persons with disabilities including elderly persons, women and children. Cultural and behavioural factors, which influence social norms around disability have significant impacts on the effectiveness of infrastructure and urban service provision.

There is a need to build awareness and sensitivity toward the barriers experienced by persons with disabilities as well as capturing appropriate data specific to the demographic structure (the type of disabilities, age-group, employment and livelihood opportunities, etc.) and to focus on evidence-based planning process. This would be a useful initiative to understand the economic and social loss incurred by non-participation of such communities across decision making and planning process of development. Policies pertaining to providing access to education, employment, and urban services for all are still in their nascent stage in most of the developing countries. Hence, it is important to draw on the learning experience of progressive nations to create a barrier-free environment to enable participation and tap the productive contribution of persons with disabilities for a city’s economic growth.

The approach to Disability-Inclusive development is based on the following factors:

- **Policy and Legislation:** A country’s policies and legislative framework may offer entry points to support early integration of inclusive approach to urban development. It may also help to understand underlying and persistent structural barriers to disability inclusion.
- **Regulatory Environment:** Where the policy environment supports disability inclusion, weak enforcement of regulations can be a reason for not translating into practice. To ensure enforcement of standards it is critical to understand the bottlenecks or opportunities in the regulatory environment, governance structures at national and municipal levels, and to build institutional capacity for effective implementation.
- **Design solutions & the built environment:** In order to be accessible, usable, and convenient; cities need to ensure that its constituent elements i.e. built environment, open spaces, recreational spaces, streets, etc. are accessible and inclusive for all. Universal design elements, assistive technologies, inclusive planning and design principles need to be made an integral part of the urban interventions which could address the diverse needs and abilities of the users.
- **Information and Data:** ICT and technology-driven solutions would play a significant part in the effective delivery of urban services and access to inclusive infrastructure. Improving information around service provision can have huge impacts on enabling users to make informed decisions when choosing services, and advocating for better service provisions. Appropriate and disaggregated baseline data is critical to determine actual challenges faced by persons with disabilities. Awareness campaigns can also build trust and partnership...
between programmes and beneficiaries, as well as supporting supervision, monitoring and long-term maintenance plans.

- **Cultural and Behavioural Factors:** These factors influence social norms around how disability is viewed and treated in society and have significant impacts on the effectiveness of infrastructure and urban service provision. The social and cultural stigma associated with impairments limit the opportunities to access basic services, prohibits active participation of persons with disabilities in community engagement.

- **Financial Resources/Investment:** Provision for adequate programme finance since initial analysis and assessments stage to sustain universal design elements, consultation processes, data collection and monitoring, would play a major role to achieve the targets and is critical for facilitating disability inclusions at each stage of design and delivery process.

### 2.1 Role of Global Agenda/Policies/Acts/ towards Inclusive Development

The 2030 Agenda for Sustainable Development has given the nations across the world a very ambitious framework with the underlying theme of 'Leave No One Behind'. Recognizing that the dignity of the human being is fundamental, the SDGs wish to see the Goals and targets met for all nations and segments of society and to endeavour to reach the furthest behind first. Article 36 of the 'New Urban Agenda' mentions to commit and promote appropriate measures in cities and human settlements that facilitate access for persons with disabilities, on an equal basis with others.

UN Convention on the Persons with disabilities (2006), Biwako Millennium Framework for Action and Biwako Plus Five is focussed towards achieving the goal of Inclusive, Barrier-free and Rights-based Society for Persons with Disabilities in Asia and the Pacific. Sendai Framework for Disaster Risk Reduction aims to focus on Disability-Inclusive disaster risk reduction and mitigation measures.

Disability Act of 1995 mandates provision of accessibility for persons with disabilities. India is a signatory to the 'Declaration on the Full Participation and Equality of persons with disabilities' in the Asia Pacific Region (2000), the 'Biwako Millennium Framework (2002)' and has also ratified the 'UNCRPD (2008)'. Under the National Policy for Persons with Disabilities (2006), India has recognized that Persons with Disabilities are a valuable human resource for the country and seeks to create an enabling environment that provides equal opportunities and focus on the protection of their rights. Rights of Persons with Disability (RPwD) Act, 2016 has reframed the definition of disability and has specified around 21 types of disabilities based on physical, visual, hearing and cognitive impairments. It mandates the Government bodies to consider the rights and entitlements, access to education, skill development and employment, social security, health, rehabilitation and recreation, enforcement to make existing public buildings accessible, duties and responsibilities of appropriate governments, setting up of central and state advisory boards/district level committee on disability for the enforcement of the Act.

Numerous norms and standards for designing spaces specific to the barrier-free environment have been prepared periodically and enforced under the supervision of many government bodies and allied agencies. NBC Building Code (NBC 2016) contains regulations (a set of minimum provisions) to design an accessible built environment to be enacted for use by various departments, municipal administrations and public bodies. Harmonised Guidelines (2016) has been prepared through a participatory approach in consultation with relevant Ministries and incorporate sections on Universal Design Elements to make built environment accessible for all. Model Building Byelaws (2016) has also incorporated the provisions for Differently abled, Elderly and Children. Urban and Regional Development Plans & Formulation (URDPFI) Guidelines (2015) has been formulated keeping in view the emerging scenario in the planned development of cities and towns and broadly highlights the importance of planning and designing barrier-free infrastructure for an urban environment. Apart from these, there are other pertaining guidelines owned by various government agencies/civil societies leading to duplicity and discrepancy which is reflected in the poor implementation of the provisions.

India particularly lacks data on disability and therefore, requires redefining the disability statistics in the country. The estimated figures of the disabled population are likely to be much higher in comparison to numbers specified in the Census, 2011. It is estimated that around 25% of India’s population need universal accessibility to live independently and with dignity. Therefore, it is imperative to emphasize on 'Disability Inclusion' across policy and urban development practices.

In the Indian context, even though, the mandates of recent missions and ongoing programs of Ministry of Housing & Urban Affairs e.g. Swachh Bharat Mission (SBM-U), Pradhan Mantri Awas Yojana- Urban (PMAY-U), Smart Cities Mission (SCM), Atal Mission for Rejuvenation and Urban Transformation (AMRUT), National Heritage City Development and Augmentation Yojana (HRIDAY) ensure enforcement of accessibility and inclusivity practices in the development process, the disparity can be seen on the on-ground implementation practices. The gap between programs objectives and achievement process necessitates to clearly define the extent of an inclusive approach to ensure stringent implementation. Design and implementation of policies and programs across scales and level should consider the needs, rights, involvement and encouraging participation of persons with disabilities followed by stringed monitoring mechanisms.
### Table 1: Universal Design India Principles with Description and Guideline for Practice

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Principles</th>
<th>Description</th>
<th>Guidelines</th>
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</thead>
</table>
| 1      | Equitable/ Saman | The design is fair and non-discriminating to diverse users in Indian context | • Avoid prejudices against people of all ages, gender, disability, sizes, caste, class and religion.  
• Consider different capabilities of users and build in many levels of engagement.  
• Provide choices in access and use thru flexibility and customization.  
• Allow personalization through inclusion of adjustable and adaptable options.  
• Provide equality in challenge, opportunity and energy requirement. |
| 2      | Usable/ Sahaj    | The design is operable by all users in Indian context                       | • Provide independence, comfort, safety and support during use.  
• Facilitate access, operation and convenience by diverse users.  
• Include adaptations for those experiencing difficulty in use.  
• Provide clarity in use, operation and maintenance to minimize instruction and avoid confusion and error.  
• Adopt simple means to overcome complex operation.  
• Follow cultural norms to address user expectations.  
• Offer multi-sensory feedback to point in the right direction.  
• Build in intuitive operation and innate understanding of problem.  
• Allow easy adaptation to facilitate use by people with diverse abilities.  
• Prevent costly mistakes and untended consequence from misuse. |
| 3      | Cultural/ Sanskritik | The design respects the cultural past and the changing present assist all users in Indian context | • Maintain social and traditional qualities in design.  
• Include Indian idioms to make historic and social connection.  
• Present in many languages for inclusive comprehension.  
• For all castes and society levels.  
• Respond to local context and conditions.  
• Employ appropriate technology to match user expectations. |
| 4      | Economy/ Sasta   | The design respects affordability and cost considerations for diverse users in Indian context | • Ensure affordability, durability and maintainability.  
• Use local materials for energy savings and cost effectiveness.  
• Focus on low unit cost through wide distribution.  
• Adopt modular approach to offer choice in features and price range. |
| 5      | Aesthetics/ Sundar | The design employs aesthetic to promote social integration among users in Indian context | • Employ aesthetic to enhance universal appeal and use.  
• Allow personalizing aesthetics through flexibility, adaptability and modularity of colour, form, texture and interaction.  
• Employ appearance to inform use and safety.  
• Bridge wide range of meaning and comprehension gaps. |

Source: http://accessability.co.in/overview

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**Figure 3: Approach towards DI Cities**
2.2 Disability- Inclusive Cities
Accessible Infrastructure and access to services are pillars for building Disability-Inclusive cities. Inclusive design and universal accessibility would act as a people-centred strategy creating an accessible, barrier-free environment through planning/design innovation which aims to cater to the right of persons with disabilities irrespective of age, gender and ability. It emphasizes on building cities based on equal access for urban services and infrastructure. This approach is an opportunity to enhance social inclusion, equitable access to services and livelihoods, engaging and mobilizing vulnerable population at risk of exclusion. Non-discriminating approach, inclusive policies & programs along with a participatory approach would play a major role to achieve the targets of Disability-Inclusive Cities.

2.3 Universal Design Principles
‘Universal design’ is the design and composition of an environment which can be accessed and used by all regardless of their age, size or disability. There are several relating terms e.g. inclusive design, barrier-free design, human-centred design, design-first, person-first design, and universal access. By considering the diverse challenges and abilities throughout the design process, universal design creates products, services and environments that meet peoples’ needs. Universal design India Principles (UDIP) have been developed by an interdisciplinary team of Indian experts to address the needs of a diverse population in the Indian context. The team have acknowledged the seven principles of Universal Design (USA) and have contextualized the principles build on their social and equitable agenda to address the cultural values of Indian people

2.4 Technology Driven Solutions
Technology is continuously evolving, providing cities with numerous ways to be more connected, efficient, transparent, and interactive. As per the recent surveys on technology, Smart Cities, disability and inclusion show disturbing trends of cities not being accessible for all. With a growing digital interface for urban services and infrastructure, there is a need to make technology interventions within reach. While countries across the world have varied programs on accessibility and large investments are being made in Smart Cities, there is a need for specific focus to promote digital inclusion for all. Global technological service providers are doing its part as a leader in enforcing accessibility through empowering civic leaders to ensure that citizens with disabilities are included in reaping the benefits of Smart Cities. Microsoft has created the ‘Smart Cities for All’ initiative with G3ict and World Enabled to define the state of accessible technology in cities worldwide with a focus on closing the digital divide for persons with disabilities and elderly persons. While technology can help improve life in cities for them, there is a risk that without adequate oversight and appropriate mechanism, it could widen inequality. Creating more inclusive digital communities is essential for reducing this digital divide - by not only boosting affordability and public access, but also by increasing digital skills and awareness. Greater digital inclusion can also improve access to public services and enhance public participation.

2.5 Assistive Technology
According to the market research assessment report of 2019, global assistive technology market will reach $26 billion by 2024. This indicates the increasing demand and opportunity for the global companies to undertake research and development in scaling accessible technology sector. There is a need to develop such technologies to solve accessibility-related issues around the urban context. Cities need to develop community-wide solutions to automate city services which is accessible to all. Few of the reference examples can be in the form of Accessible Street Map for Wheel Chair Users, New Beacon based Navigation system for visually impaired people, interactive signages, city sensors and monitors that measure data metrics to drive better decision making process for city planning aspects by the city stakeholders, etc.
Introduction to BASIIC Program

National Institute of Urban Affairs (NIUA) in collaboration with Ministry of Housing and Urban Affairs (MoHUA) and support from the Department for International Development (DFID) of the UK Government is implementing the program “Building Accessible, Safe & Inclusive Indian Cities (BASIIC)” through a Technical Assistance Support Unit (TASU) established at NIUA. It endeavours to promulgate the tenets of accessibility, safety and inclusivity in the ethos of urban planning and design. This will be achieved through focused policy-level interventions, pilot demonstration of innovative solutions, capacity building and sustaining the above through application of robust monitoring and evaluation mechanism.

The key objectives of the program are:
- Consolidation of definitions, concepts, policies, provisions, and practice w.r.t. persons with disabilities in India.
- Mapping the major areas of opportunity in implementation of policies and provisions at the city level.
- Technical assistance to implement and replicate interventions at pilot scale for cities to be accessible, safe and inclusive for persons with disabilities.
- Develop a monitoring and evaluation framework for partner cities to assess and improve their standards of universal access and inclusivity.

3.1 Aim of the Cities Insights Report

The report aims to highlight the existing urbanization trend which fails to create provisions for Persons with Disabilities including Elderly Persons, Children and Women. The current development trend is inequitable and inaccessible in terms of promoting an inclusive approach to provide universal access for urban services and infrastructure while bridging the development divide. It also gives an insight into the various approach towards achieving inclusive development which can be incorporated at the policy or implementation level guidelines both at macro and micro level development. The approach towards creating inclusive and accessible urban environment have been furthered narrowed down to understand the initiatives of Indian Smart Cities across its ongoing missions/schemes/programs by apprehending the intent of smart cities towards developing disabled inclusive infrastructure while addressing the barriers to inclusion.

The report captures the initiatives being considered by the thirteen smart cities (shortlisted as per city assessment framework of BASIIC program) to develop urban centres as accessible, safe and inclusive for all. The report also assesses other initiatives being implemented in those cities under several ongoing mission/schemes (AMRUT, SCM, AIC) and identify scope for sectoral and financial convergence. Various
factors such as funding pattern, the progress of the projects as well as outcomes from the efforts aiding the project beneficiaries have been collated. As an outcome of this report, inferences have been drawn to understand the efforts and aptness of the approach adopted by cities to design urban areas focusing on the barriers and challenges faced by persons with disabilities. Based on the analysis, a list of sector-specific pilot interventions have been identified based on “universal design/inclusive planning and design principles” for transforming cities in alignment with BASIIC tenets. At the end of the report, strategy to collaborate with smart cities and provide technical assistance for implementation of identified pilot interventions under BASIIC Program have been outlined.

3.2 Methodology and Framework Adopted
The insights report intends to assess the efforts undertaken by the smart cities based on specific parameters towards building accessible, safe and inclusive cities. The list of identified parameters are as follows:

The list of identified parameters are as follows:
- City Disabled Population
- Characteristics of the city
- Type of Interventions
- Scale of the interventions
- Area of Interventions
- Investment and Funding Pattern
- Project Progress
- Project Beneficiaries
- Project Outcomes
- Scope for Convergence with other schemes/missions

The assessment has assisted in measuring the efforts undertaken in the shortlisted smart cities to pertinently cater to the barriers and challenges faced by persons with disabilities. It aims to highlight the importance of policy-level implementation, institutional level changes, adoption of urban tools and techniques, ease of procurement policies related to assistive technologies and focusing on adopting them at an urban scale, nurturing innovative solutions, safeguarding funds, etc. for effective implementation of building disabled-friendly infrastructure.
Collaboration with Smart Cities – Implementing Pilot Interventions

One of the program objectives is to implement innovative pilot solutions focusing on accessibility, safety and inclusivity aspects in selected partner smart cities. The strategy is to provide technical assistance to partner cities in implementing targeted interventions under the tenets of BASIIC Program. To enhance the learning and replication model across other smart cities, the program also intends to document the experiences and learning process of implementing pilot interventions and develop city-specific implementation framework for knowledge dissemination purpose.

4.1 Alignment with Ongoing GoI Missions

As per the city collaboration approach, the selected partner cities have been strategically shortlisted based on their alignment with ongoing national missions/schemes and have a vision towards achieving inclusive urban development. This approach creates avenues and scope to implement interventions under BASIIC Program in convergence/dovetailing with the ongoing missions/schemes.

The flowchart gives a landscape of the alignment of BASIIC program with ongoing mission/scheme of GoI as well as with the Sustainable Development Goals.
4.2 Accessible India Campaign
Accessible India Campaign (Sugamya Bharat Abhiyan) is a nation-wide campaign launched by Department of Empowerment of Persons with Disabilities (DEPwD) of the Ministry of Social Justice & Empowerment (MoSJE). It aims at creating a barrier-free environment and to provide universal accessibility for persons with disabilities under the following sectors:

- Built Environment
- Public Transport
- ICT Ecosystem

The mission's focus is on transforming major public and govt buildings across Indian cities as accessible along with airports/railways stations/other transportation facilities to be transformed as disabled-friendly. It also aims at enhancing the proportion of accessible usable public documents/websites/sign language interpreters/television programs that meet internationally recognized accessibility standards.

4.3 Smart Cities Mission
A smart city is built upon the concept of “people-centric” development which focuses on the inclusive approach, incorporates technology to make cities accessible for all. With Smart cities would be the future of urban development, Smart City Mission (SCM) focuses on redefining urban development initiatives that make cities more liveable, inclusive and centres of economic growth. The mission objective is also to ensure the inclusion and participation of every citizen irrespective of age, ability and gender in urban development aspects to create an inclusive urban landscape that promotes access to utilities & infrastructure, accessible mobility solutions, active public safety and citizen engagement platforms.

As urban population rises exponentially, many cities are turning to technology and smart city solutions to build liveable urban environment and improve the delivery of public services. These initiatives have the potential to expand access to city services, improve public engagement, and spur economic growth. However, smart city design and implementation shortcomings, coupled with the digital divide between different population segments, might unintentionally leave some communities behind.

Almost 590 million people will be living in Indian cities by 2030, making this mission even more relevant considering the existing state of poor infrastructure and services in the majority of cities. Currently, the capacity of urban infrastructure is often overwhelmed by the cascading effects of rapid urbanization, sprawl, and demographic shifts. The Smart City 2.0 would aim at moving beyond just connected infrastructure and smarter things, the smart cities of tomorrow need to engage governments, citizens, visitors, and businesses in an intelligent, connected ecosystem. The greater challenge is also to explain the accessibility in its entirety, beyond the built infrastructure and also to extend inclusion across ICT and IT-enabled services.

4.3.1 City intent under Smart Cities Mission
Smart cities are already implementing projects to transform urban centres around the concept of accessibility, safety and inclusivity. In order to understand the focus area of 100 smart cities, a review of ongoing/proposed projects/schemes has been done to understand the alignment with the thematic areas of BASiC Program. Around 22 Smart Cities intend to implement projects which have well-defined alignment with the program objectives. Few of these cities have cohesion and convergence with the other schemes e.g. AIC, AMRUT, HRIDAY, etc. The table indicates a brief understanding of the city-wise sector-specific projects focusing on various aspects to promote inclusive development focusing on the barriers associated with inclusion and disability.
## Table 2: Project Inferences from 22 Smart Cities

<table>
<thead>
<tr>
<th>List of Cities</th>
<th>Built Environment (Physical Infrastructure)</th>
<th>Social Infrastructure</th>
<th>Open/Green &amp; Recreational Spaces</th>
<th>Mobility</th>
<th>Inclusive tourism</th>
<th>ICT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmedabad</td>
<td>• Smart toilets</td>
<td>• Accessible door to door service delivery</td>
<td>• Place making Riverfront Community Ghat</td>
<td>• Smart Road on River Front West Bank • Intermodal Transport Hub near Ranip</td>
<td>• Revamping of heritage structure • Heritage plaza</td>
<td>• Accessible ICT enabled app</td>
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<td></td>
<td>• Parking spaces accompanied by appropriate signage</td>
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<tr>
<td>Ajmer</td>
<td>• Accessible toilets</td>
<td>• Smart Classes in public institutes/schools</td>
<td>• Mega Amusement Park • Anasagar Escape Channel Cover (Developed for Pedestrian access) • Open Air Amphitheatre, Promenades/plaza, Parks, open spaces. • Theme based parks for children/elderly persons</td>
<td>• Pedestrian friendly walkways connecting dargah area to railway station</td>
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<tr>
<td></td>
<td>• Holistic, inclusive, and transformative area-based development through retrofitting of the Anasagar Lakefront area to the Ajmer Railway Station.</td>
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<tr>
<td>Amritsar</td>
<td>• Plaza at Saheedian Sahib</td>
<td>• Barrier free universally accessible open spaces, pedestrian paths &amp; crossings with special focus on accessibility to differently-abled.</td>
<td>• Bus Rapid Transit System with disabled friendly buses</td>
<td></td>
<td></td>
<td>• ICT enabled Smart Roads/Streets</td>
</tr>
<tr>
<td>Bhopal</td>
<td>• Accessible market place/commercial areas</td>
<td>• Unique Smart Addressing Solution for Urban Properties/Safe City Project</td>
<td>• Tactical urbanism and Place making Landscaping and site Grading of ABD Area</td>
<td>• Intelligent transport system (Intelligent street pole) • Smart road</td>
<td>• Heritage Development of Sadar Manzil</td>
<td>• ICT Applications in ABD area development • Smart integrated navigational services with variable message signage</td>
</tr>
<tr>
<td>List of Cities</td>
<td>Built Environment (Physical Infrastructure)</td>
<td>Social Infrastructure</td>
<td>Open/Green &amp; Recreational Spaces</td>
<td>Mobility</td>
<td>Inclusive tourism</td>
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<tr>
<td>Bhubaneswar</td>
<td>• Social Equity Centres</td>
<td>• Integrated Public Service Centre at Bapuji Nagar</td>
<td>• Child-friendly city providing accessible, safe, inclusive and vibrant public places. • Barrier-free access points in public spaces</td>
<td>• Integration of public and privately owned (publicly accessible) parking availability on a common platform. • auditory signals and ergonomically designed bus queue shelters, allowing universal access.</td>
<td>• Museum of Urban History</td>
<td>• Parking Guidance Mobile App</td>
</tr>
<tr>
<td>Chandigarh</td>
<td>• Smart Toilets</td>
<td>• Accessible public service delivery mechanism</td>
<td>• Accessible Public Plaza</td>
<td>• Sidewalks and plazas to be barrier free</td>
<td>• Accessible tourist sites</td>
<td>• G2C and G2B services made available on a single integrated online portal (myChandigarh.gov.in) • Access to Internet, mobile app, Centralized Service Centres, kiosks, e-sampark, smart desks</td>
</tr>
<tr>
<td>Chennai</td>
<td>• Accessible Public/government buildings</td>
<td>• Smart classrooms</td>
<td>• Retrofitting of Green spaces • Sensory park</td>
<td>• Accessible foot path/Pedestrian Plaza • Pedestrianised streets • Smart street</td>
<td>• Public transport system using smart technology to make the city inclusive</td>
<td></td>
</tr>
<tr>
<td>Delhi</td>
<td>• Smart Toilets</td>
<td>• Pedestrian Safety • Skill/ Livelihood opportunities</td>
<td>• Redevelopment of Nehru Park • Development of Rose Garden-II at Shanti Path in Chanakyapuri</td>
<td>• Smart Roads • Pedestrianisation of Connaught Place • Different-ly-abled friendly infrastructure at Metro Station</td>
<td>• Accessible Heritage Sites</td>
<td></td>
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<tr>
<td>Kakinada</td>
<td>• Smart e-Toilets</td>
<td>• Skill development centre</td>
<td>• Accessible Waterfronts • Redevelopment of Parks</td>
<td>• Smart Bus Shelters • Smart Streets</td>
<td>• ICT enabled streets</td>
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<tr>
<td>List of Cities</td>
<td>Sector Specific Projects</td>
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</tbody>
</table>
| **Kalyan-Dombivali** | - Kalyan Station Precinct Improvement  
- Smart Governance  
- Accessible Water front  
- Lake rejuvenation and precinct development  
- Intelligent traffic management system |
| **Kochi** | - Smart solutions for revival of identity of the Fort Kochi/Mattancherry  
- Central city area  
- Development of open spaces/playgrounds  
- Accessible Walkways and Public space  
- Accessible Footpaths  
- Pedestrian facilities with Street furniture, Boulevards and urban greenery  
- Intelligent traffic system |
| **Kanpur** | - Accessible Market area  
- Skill Development and Economic Commercial Business Centre  
- e-pathshala/ Promote digital learning  
- Accessible parks & open spaces  
- Integrated Traffic Management System  
- Improvement of citizen trust by developing ITECCS cell for real time monitoring of data  
- Smart Applications, including Accessible Infrastructure for differently-abled |
| **Kota** | - Accessible institutions/major public places  
- Accessible places for a safe and inclusive street  
- Active citizen engagement platform  
- ICT enabled traffic management system |
| **Lucknow** | - Accessible institutions/major public places  
- Safe City Project  
- Gomti River Front Development  
- Universally Accessible Barrier free park  
- Smart Bus shelters  
- Lucknow Smart City Management System/Portal  
- Accessible heritage sites  
- ICT enabled traffic management system |
| **Namchi** | - Accessible Toilets  
- Accessible, safe and multi-use public spaces and buildings including shopping areas, wholesale market / trading hub, handicraft bazaar, sports complex, high-end hotels  
- Adequate facilities for a safe and inclusive street  
- Active citizen engagement platform  
- Public Spaces / Public Art / Sports / Parks /Open Gym-Yoga Spaces Street Improvement Plan  
- Accessible Footpaths, Pedestrian Infrastructure  
- ICT enabled traffic management system |
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<tr>
<th>List of Cities</th>
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<td>Built Environment (Physical Infrastructure)</td>
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<td>Inclusive tourism</td>
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<td>ICT</td>
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<tr>
<td>Panaji</td>
<td>• Beautification and Upgradation of Azad Maidan Square</td>
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<td></td>
<td>• Accessible city infrastructure</td>
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<td></td>
<td>• Livelihood and economic opportunities for PwDs</td>
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<td>• Caranzalem Children’s Park</td>
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<td>• Beautification of the Beach front Promenade at Miramar</td>
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<td>• Development of Open Spaces Opposite Old IPHB Complex</td>
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<td>• Accessible Waterfront</td>
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<td></td>
<td>• Accessible pedestrianised streets</td>
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<td>• Accessible Heritage/ tourist sites</td>
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<td></td>
<td>• Master System Integrator for Goa Intelligent City Management System - Panaji City</td>
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<td></td>
<td>• Intelligent Transport System</td>
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<td>Pune</td>
<td>• Inclusive neighbourhood</td>
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<td></td>
<td>• Governance and citizen engagement platforms</td>
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<td></td>
<td>• Accessible Riverfront development</td>
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<td>• Placemaking/. accessible open spaces</td>
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<td>• Adaptive Traffic Management System</td>
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<td>• Accessible pedestrianised streets</td>
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<td>• Smart city infrastructure</td>
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<tr>
<td>Ranchi</td>
<td>• Accessible Stadium/ Accessible Market area</td>
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<td>• e- literacy project</td>
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<td></td>
<td>• Accessible Riverfront development/ Parks/lakes</td>
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<td></td>
<td>• Barrier free pedestrian Footpaths</td>
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<td>• Smart Road Infrastructure</td>
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<td>• Accessible learning mechanism</td>
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<td>Shivamoga</td>
<td>• Smart library</td>
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<td></td>
<td>• Access to e-education</td>
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<td>• Riverfront Development/ canal Beautification</td>
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<td>• Integrated Bus Terminal project</td>
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<td>• Smart Road Infrastructure</td>
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<td>• Pedestrian friendly pathways</td>
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<td>• ICT related interventions for traffic management</td>
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<td>• Inclusive Digital infrastructure</td>
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<td>Thane</td>
<td>• Accessible Restrooms</td>
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<td>• Accessible suburban stations</td>
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<td>• Accessible lakefront waterfront</td>
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<td>• Multi-modal transit hub at existing railway station</td>
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<td>• Inteligent Transport System</td>
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<td>• Wheelchair accessible Footpaths</td>
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<td>• Accessible Tourism/ Heritage Sites</td>
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<tr>
<td>Varanasi</td>
<td>• Accessible Stadium Infrastructure</td>
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<td></td>
<td>• e-Governance Services for select departments under e-District Platform</td>
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<td></td>
<td>• Accessible market and ghat area</td>
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<td></td>
<td>• Accessible parks/open spaces</td>
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<td>• Accessible footpaths</td>
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<td></td>
<td>• Smart Bus stops</td>
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<td></td>
<td>• Accessible Tourism Spots</td>
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<td>Vishakapatnam</td>
<td>• Smart toilets</td>
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<td></td>
<td>• Accessible Public/ Government Buildings</td>
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<td></td>
<td>• Access to Education</td>
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<td></td>
<td>• Accessible open spaces</td>
</tr>
<tr>
<td></td>
<td>• All Abilities Park</td>
</tr>
<tr>
<td></td>
<td>• Accessible beach/ waterfront</td>
</tr>
<tr>
<td></td>
<td>• Accessible Footpaths</td>
</tr>
<tr>
<td></td>
<td>• Smart Roads</td>
</tr>
<tr>
<td></td>
<td>• Smart Roads and Junction improvement Project</td>
</tr>
<tr>
<td></td>
<td>• Accessible Tourism Spots</td>
</tr>
<tr>
<td></td>
<td>• Access to Digital information (display, installing smart signalling, traffic surveillance)</td>
</tr>
</tbody>
</table>
The major focus area of the above listed smart cities is to develop disabled-friendly infrastructure in order to tackle the issues of inaccessibility across the urban environment. Cities are adopting new initiatives and implementing innovative projects such as Sensory Park, All Abilities Park, ICT enabled infrastructure, Tactical urbanism and Placemaking initiatives for urban centres, etc. These sector specific projects are designed to tackle the barriers and challenges faced by Persons with Disabilities/Children/Women/Elderly Persons. The scale of implementation is either based within Area Based Development (ABD) area of the city or is being implemented at a pilot scale which can act as an innovative example for other smart cities to learn, adapt and replicate.
Cities Assessment Framework of BASIIC Program

The program mandates to collaborate with two partner smart cities for the implementation of innovative pilot solutions. A city assessment framework (Annexure: I) has been developed to shortlist the cities by acknowledging the contextual, spatial variations existing in the Indian Smart Cities along with the ongoing efforts under various schemes/missions of GoI which focuses on achieving inclusive and sustainable development.

The following criteria/indicators have been taken into consideration as a part of the assessment framework:

- **Ongoing Policies & Program** (convergence between missions such as Smart Cities Missions/Accessible India campaign/AMRUT).
- **Data Relevance** (Tier Classification for Cities, City and State wise disabled population, characteristics of cities).
- **City Intent** (Similar Interventions across ongoing schemes/missions, stage of implementation, the scope for convergence/dovetailing with ongoing projects, source of funds, etc.)
- **NIUA/DFID Intervention Cities** (leveraging the existing partnerships established at the cities, amplifying the impact of the project through collaborative efforts, learnings from the city-specific issue/challenges).

The below flowchart gives a brief overview of city assessment framework.

Based on the above-mentioned determining factors and the methodology developed, a pool of Cities and UTs had been shortlisted. These are namely Kanpur, Varanasi, Lucknow, Pune, Vishakhapatnam, Bhopal, Bhubaneshwar, Chennai, Ahmedabad, Ranchi including Delhi and Chandigarh.

In order to understand the smart cities efforts focusing on inclusive urban development, an online-based project template (Annexure-II) had been developed in consultation with SCM – MoHUA and DFID. The components of the template aimed to capture the details and progress of similar interventions being implemented in each of the cities. The thorough analysis of cities wide responses had assisted in understanding the approach towards inclusive development as well as decoding technical, financial and implementation related issues faced by the cities for transforming their urban centres as inclusive for all.
Cities Responses – Template Based Information

TASU with the support from SCM - MoHUA had requested project details from all the 100 Smart Cities through an online template hosted on Smartnet - NIUA. The responses from the cities draw a clear indication of alignment with the thematic areas of the BASIIC Program. Information from the template-based project details (key objectives, alignment with the tenets of BASIIC Program, beneficiaries, budget, timeline, source of funding, etc.) had been collated to understand the ongoing city level efforts and to shortlist the cities for collaboration with BASIIC program.

6.1 Insights from 13 Cities
Thirteen cities had responded with the details of projects that have an alignment with BASIIC program tenets. These are namely Belagavi, Bhagalpur, Chandigarh, Chennai, Davanagere, Guwahati, Kakinada, Kanpur, Jaipur, Madurai, Nashik, Sagar and Varanasi. The details of city specific responses have been collated to understand the cities in terms of its ongoing efforts.

Figure 8: Location Map of 13 Smart Cities
intent to address the barriers of accessibility as well as identifying avenues for collaboration.

Based on certain identified parameters, the responses have been assessed in order to understand the efforts and initiatives of smart cities mission to promote inclusive development across cities.

**I. Population of persons with disabilities**

The graph demonstrates the city-wise comparison of persons with disabilities. Chennai has the highest share followed by Kanpur, Jaipur and Varanasi. Nearly 50% of the persons with disabilities belong to one of the five states: Uttar Pradesh (15.5%), Maharashtra (11.05%), Bihar (8.69%), Andhra Pradesh (8.45%), and West Bengal (7.52%). In order to focus on inclusive development, these cities are taking considerable efforts through integrating the concept of accessibility across sector-specific urban initiatives.

There is a need for the cities to capture data specific to the demographic structure of persons with disabilities (the type of disabilities, age-group, employment and livelihood opportunities, etc.) and plan and design any urban initiative to tackle the barriers and challenges faced by them. Enumerating the baseline data and the demographic structure is critical to determine actual challenges and to focus on disability inclusion at the grass root level.

**II. Project Distribution across 13 Cities**

Details of around 33 sector specific projects have been shared by the cities. The referred projects have clear alignment with the smart city proposals as well as with...
vision to achieve overall urban development under SCM. Chandigarh, Chennai, Jaipur have taken numerous initiatives and are implementing a maximum number of projects focusing on disability inclusion development. Whereas Varanasi, Guwahati and Madurai are investing to promote inclusivity across sectors with a focus on inclusive tourism and building disabled-friendly infrastructure. Other cities are as well on the process of adopting such inclusive development practices within the ongoing project activities. The shared projects are of different scale, categories, different stages of implementation and meant to tackle the barriers of accessibility for Persons with Disabilities as well as other vulnerable sections of the society.

III. Area of Intervention

Majority of the cities are focusing on improving access to the built environment and physical infrastructure by incorporating inclusive design and planning principles, universal features, etc. Cities such as Chennai, Jaipur, Varanasi, Guwahati are implementing projects to promote inclusive tourism and enhance the scope for sustainable mobility which is accessible for all irrespective of age, ability and gender. ICT related interventions are also being imbibed across projects to achieve digital inclusivity. Innovative projects such as Sensory Park have also been widely explored by the cities. Chennai has already implemented one of its kind and the others are also on the verge to replicate in their cities.

![Sector Specific Projects across 13 Cities](image)

Few of the major observations towards the approach adopted by the cities to plan, design and implement inclusive interventions are as follows:

- When compared to the broad list of urban sectors (elaborated in Section 8.2 of the report), the focus of the smart cities is majorly concentrated towards the accessibility of the built environment, accessible public toilets, pedestrianization of streets, etc.
- Piecemeal approach e.g. making open space accessible, enforcing certain stretch of road for pedestrian movement, making school premises accessible, etc. does not serve the overall purpose of Disability-Inclusive approach of urban development.
- The interventions are not planned in a holistic manner and hence lack integration of barrier-free elements/inclusive design and planning principles across urban sectors necessary to make the overall urban environment accessible, safe and inclusive for all.
- The interventions are generic in nature (irrespective of age, gender and ability) and are not planned or designed to cater to any particular type of impairment.
- The barrier-free elements in the interventions are only limited to tackle the barriers faced by persons with disabilities who suffer from physical impairment or age-related disorders.
- The ICT interventions are limited to the formation of ICCC in the smart cities. However, other aspects e.g. Public services, apps, websites, etc. are still not accessible to all (especially people with visual/cognitive impairments) which would facilitate the users to access the equal rights and participation towards urban services and infrastructure.
IV. Scale of Projects
Around 80% of the projects are being implemented within defined ABD zones while rest are envisaged to be replicated across PAN City. Majority of the Pan-City smart solutions are aimed at benefiting the entire city through the application of ICT, resulting in improvement in local governance, access to social infrastructure as well as easing the delivery of public services.

V. Type of Innovative Projects
SPVs are exploring various innovative initiatives/smart solutions in cities by adopting learnings from international best practices and global standards. The intention is to integrate various urban tools and techniques, inclusive design and planning principles to transform urban spaces which are accessible to persons with disabilities as well as elderly persons, women and children and improve the overall quality of urban environment. The projects aim to develop accessible open spaces/parks/playgrounds, enforcing accessible pedestrian movement in the urban centres, adopting the concept of tactile urbanism, place-making through the redevelopment of public spaces, provisions for accessible education, accessible and inclusive tourism, use of Integrated Command Control Centre (ICCC) for easing public service delivery mechanism, enforcing citizen engagement through building accessible digital solutions, etc. Through implementing such initiatives, the cities aim to achieve optimum living condition, efficient transport system, development of heritage sites, utilization of sustainable resources, keeping intact cultural, tradition and heritage values, promote citizen engagement platform and achieve universal coverage of accessible infrastructure.

VI. Funding and Investment Pattern
The budget outlay of city specific projects indicates that there is no separate funding mechanism adopted by the cities for implementing projects relevant for disability inclusion across urban sectors. Majority of the funds are procured under Smart City Mission. Whereas, in the case of cities such as Chennai, Madurai, Jaipur and Guwahati, there is a convergence between Smart City and State Government fund for implementation and execution of the projects.

Majority of the investments are made on developing smart roads which would be made accessible for all by integrating pedestrian friendly infrastructure (widened footpaths, better lighting, street furniture, tactile path, universal design elements, etc.) and promoting a non-motorised mode of transport. It aims to improve the walkability factor for pedestrians, especially the elderly.
Pedestrian Plaza - Chennai

Safe Streets - Guwahati

e-learning program

Smart Roads – Chennai

Safe City - Nashik

Accessible Streets/Sensory Park - Chennai
Another major investment by the cities is being done on placemaking projects which include redeveloping green and open spaces, transforming market and neighbourhood as accessible, inclusive and safe for all. Investments are also being made to focus on digital inclusion e.g. use of ICT in delivering public services, adopting e-learning process in the education system, to make urban infrastructure accessible to all.

Integrated Control and Command Centre plays an integral part of the smart cities initiatives by establishing a collaborative framework to assimilate and coordinate different smart solutions implemented by the SPV and other stakeholders on a single platform. Access to physical infrastructure is being enhanced by installing smart toilets, water ATM, etc in the urban areas.

However, other innovative projects such as Sensory Parks, access to public services, access to mobility solutions (para – transit mode, bus shelters, etc) are also being adopted by few cities as a part of the urban transformation vision.

Investment for disabled friendly infrastructure could enhance economic growth through increased productivity and promoting the well-being of citizens irrespective of age, ability and gender. It would reduce stigma and discrimination in the workplace and unlock the potential of persons with disabilities, by providing equal access to rights and opportunities as well as would play a major role in the overall city development process.
VII. Project Progress
Around 52% of the projects are in completed stage, whereas 30% are ongoing and the rest are in proposal stage. The distribution of projects as per the progress, gives a clear indication of how smart cities are adopting the concept of accessibility/safety/inclusivity across various urban verticals. There is an opportunity to learn from the progressing cities and supporting others in adopting such strategies/initiatives through establishing convergence between ongoing programs/schemes.

Figure 15: Investment on Key Innovative Projects

Figure 16: Distribution of Projects as per Implementation Stage
6.1.1 Mapping of Relevant Projects Across Respondent Cities

I. Belagavi

City Profile:

- City Population: 4,88,157
- Persons with Disabilities population: 7,021
- Density: 4,900 per sq.km
- Area under BMC: 99.61 sq.km

Belagavi or Belgaum is one of the oldest, prominent and well cultured historical places nestling high in the Western Ghats. It is the administrative headquarter of north-west Karnataka. Belgaum is also known for its enormous contribution towards industrial productivity, agriculture production, part of SEZ also serves as a major training centre and cantonment base for the Indian Armed Forces. As per the Smart City Proposal (SCP) of Belagavi, it has a vision of an ‘inclusive, liveable, culturally vibrant city emerging as an eminent destination for health, education, ancillary industry and logistics sectors.’ (HEAL City).

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>7021</td>
<td>P1- Smart Roads</td>
<td>Completed</td>
<td>Mobility, ICT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2- Development of Modern Market</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Mobility, Inclusive Tourism</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** Projects are being envisaged to improve the urban mobility sector as well as upgrading the existing built environment with basic infrastructure to make the urban area accessible for all.

- **Type of Projects:** Under the Smart Road project, pedestrian-friendly pathways and accessible footpaths along with integrated ICT infrastructure, multi-utility duct for utilities are being developed to facilitate barrier-free movement for Persons with Disabilities/Children/Women/Elderly Persons. The redeveloped market centre is being designed as a cohesive and barrier-free urban space with modern amenities, well defined hawkers’ zones, informal markets to promote universal access incorporating the safety and security measures for the users.

- **Scale:** The project geography is defined within the ABD area of the city.

- **Funding Pattern:** Belagavi Smart City Ltd. is funding the listed projects.

- **Progress:** Completed/Ongoing stage.
II. Bhagalpur

City Profile:

- City Population: 400,146
- Persons with Disabilities population: 5,661
- Density: 13,263 per sq.km
- Area under BNN: 30.2 sq.km

Bhagalpur, the third largest city in the State of Bihar with a historical importance is situated on the southern bank of the Ganga river. The city is a district headquarters serving multiple functions of an administrative, trade and commerce, service and distribution centre. Vikramshila Dolphin Sanctuary established near the town is the only sanctuary in Asia for the conservation of Gangetic Dolphins. World’s second largest rescue and rehabilitation area for Garuda is located in Bhagalpur. The city is well connected through rail and road networks. Bhagalpur has been associated with the silk industry for hundreds of years and is also known as the Silk City and ranks second after Karnataka in silk fabric production and exports. The city is also famous for its Manjusha paintings, a unique art found only in Bihar. The SCP of Bhagalpur focuses on building smart governance, promote inclusive tourism, well connected city to achieve socially inclusive growth for all.

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III</td>
<td>5,661</td>
<td>P1- Multi Sports Centre</td>
<td>Proposed</td>
<td>Physical &amp; Social Infrastructure, Built Environment, Inclusive Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2- ICCC Building</td>
<td>Proposed</td>
<td>Built Environment, ICT</td>
</tr>
</tbody>
</table>

Design, Development, Construction of sports complex which include an Open Air Theatre, sports complex, swimming pool. The center will be developed based on the principles of Universal Design to make it accessible for Persons with Disabilities.

The building would act as an information and technology hub for all the city stakeholders as well as for the citizens. In built ICT based solutions would be incorporated for making it inclusive and accessible for all.
Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** The ICCC project being undertaken by the Bhagalpur Smart City Ltd (BSCL) aims to focus on integrating ICT solutions for better management of the city services. BSCL also intends to implement projects to improve the urban functions of the city by focusing on placemaking initiatives.

- **Type of Projects:** The proposed Multi Sport Centre project would act as an integrated sports infrastructure facility for the city. It will include designated zones for swimming/cricket/badminton/basketball, etc. along with well-planned circulation for pedestrian/vehicular movement integrated with safety and security components. ICCC Building will be developed as an integrated ICT hub where the city level data would be made available to the stakeholders in taking real time decisions for the city. It would also facilitate in making public services accessible to all through integrated accessible digital solutions. The ICCC is one of its kind initiatives of BSCL. It aims to assist the city stakeholders in the facilitation of data-driven decision-making process, improve efficiency in public service delivery, better management of infrastructure, better response towards disaster/emergency and enhance inter-departmental coordination and collaboration for faster execution of public services.

- **Scale:** The project geography is defined within the ABD area of the city and intends to benefit PAN/ the entire city.

- **Funding Pattern:** Bhagalpur Smart City Ltd. is funding the listed projects.

- **Progress:** Proposed stage.
III. Chandigarh

City Profile:
- City Population: 1,055,45
- Persons with Disabilities population: 7,051
- Density: 9,258 per sq.km
- Area under MCC: 114 sq.km

Chandigarh was planned by the famous French architect Le Corbusier. The foundation stone of the city was laid in 1952. Subsequently, at the time of reorganization of the state in 1966 into Punjab, Haryana and Himachal Pradesh, the city assumed the unique distinction of being the capital city of both, Punjab and Haryana while it was declared as a Union Territory by the Government of India. The concept of the city is based on four major functions: living, working, care of the body and spirit, and circulation. The Smart City vision for Chandigarh is envisioned to become a leader in liveability, sustainability, equality and innovation.

Key Project Insights:

P1. Procurement of Battery Operated Cart

Chandigarh envisions to improve accessibility in busy public spaces for elderly/differently abled people with measures such as introduction of Battery Operated Cart. It aims to facilitate elderly and disable for intra-movement in busy market places in ABD areas.

P2. Smart Classrooms

Aims to develop technology-based teaching-learning solutions for school children. It would also assist in building the capacities of the teachers to use Modern Teaching-Learning Techniques. Another phase of the project would focus on improving infrastructure of the schools e.g., Digital Notice Board, MCQ based testing with tablets, accessible sanitation, etc.

P3. Sensory Park for Disabled

The project has features that attract multiple senses of an individual including mobility disability, motor skills, hearing and speech disability, cognitive disability, and intellectual skills disorders.

P4. MSI for ICC

Aims to establish a collaborative framework where inputs from different functional departments can be assimilated and analyzed on a single platform consequently, resulting in aggregated city level information.
Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** The initiatives are being undertaken by Chandigarh Smart City Ltd (CSCL) with a multi-faced and sector-specific approach. It aims to provide access to education, build accessible physical infrastructure as well as recreational spaces along with promoting sustainable mode of transportation. The projects intend to benefit Persons with Disabilities, Children, Women and Elderly Persons.

- **Type of Projects:** CSCL envisages to implement a sustainable means of transportation for the Elderly Persons/Persons with Disabilities for providing easy access to public spaces/market places. Developing open spaces/parks capturing multiple senses of an individual and designed to be accessible for all is one of the proposed initiatives under the Smart Cities Mission. Apart from these, projects have been streamlined to incorporate digital interventions to make public services/utilities (water supply, citizen engagement, e-governance, disaster response, education, etc.) accessible to all.

- **Scale:** CSCL is implementing the mentioned initiatives within the ABD zone and would be replicated across PAN City to transform Chandigarh as an inclusive city.

- **Funding Pattern:** CSCL is funding the majority of the listed projects. Few of them are also supported by Municipal Corporation of Chandigarh under Public Private Partnership model.

- **Progress:** Proposed/Ongoing stage
IV. Chennai

City Profile

City Population: 4,646,732

Persons with Disabilities population: 1,63,428

Density: 26,903 per sq.km

Area under GCC: 426 sq.km

Chennai is the capital of the state of Tamil Nadu, and is India’s fourth largest city by economy and population. The city has a diverse array of economic sectors and is known for its automobile industry and rich IT sector. Forbes magazine named Chennai as one of the fastest growing cities in the world. It is ranked fourth in India having the greatest number of Fortune 500 companies, after Mumbai, Delhi, and Kolkata. The Greater Chennai Corporation (previously Madras) is the oldest municipal body in India established on the 29th September 1688. As per Chennai’s Smart City Proposal, the city has a vision of becoming a universal cultural hub for safe and sustainable living with enhanced mobility, smart urban infrastructure and become more resilient towards physical, social, and economic challenges.

Key Project Insights:

- Specialized parks for all kinds of visitors with special emphasis on children with disabilities. Inclusive play environment are accessible to the disabled individual such as scented plants, tactile sculptures, sculpted handrails, water features, sound features designed to play through and movements textured touchpads, magnifying-glass screens, braille signage and audio induction loop descriptions.

- 8 parks have been retrofitted with inclusive design and features. Made accessible for differently abled and elderly population with inclusive and accessible walkways along with universal design elements.

- The project has transformed the busy commercial area into a hassle-free walk and shop zone by promoting the use of public spaces for Non-Motorised Transport, specifically for pedestrians. Based on the concept of Universal Design, the footpaths have been made accessible, inclusive and safe and has been transformed as a community space for the citizens.

- Interior streets of T Nagar (ABD Zone) have been identified for pedestrianisation in order to promote Non-Motorised Transport Policy. These include widened footpaths, better lighting, street furniture, tactile path and tabletop crossing. It aims to improve the facilities for pedestrians movement and promote its a as last mile connectivity option.
Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** Greater Chennai Corporation (GCC) and Chennai Smart City Ltd (CSCL) have taken tremendous efforts in terms of promoting accessibility/safety/inclusivity across its urban development initiatives. Majority of the initiatives fall under placemaking category of projects with a focus on building Disability-Inclusive infrastructure in the city.

- **Type of Projects:** Few of the completed interventions including a sensory park which has an inclusive play space for children with disabilities, has an average footfall of 1000-1500 people every month. It has been recognized as a model project and has been recommended for replicating and scaling up in other parts of the city and the state. Green spaces across the city have been retrofitted with Disability-Inclusive infrastructure catering to varying gender, ability, young adults, middle-aged and the elderly persons. Another ambitious project has transformed the busy commercial area into a hassle-free walk and shop zone, known as the Pedestrian Plaza. It promotes the use of public spaces by enforcing Non-Motorized modes of Transport, specifically pedestrian routes integrated with universal and inclusive design elements e.g. street furniture, sanitation facilities, landscaping zone, street lights and CCTV coverage for ensuring safety and security of the citizens. The stretch perceives an average footfall of 5000 persons per hour during peak timings and 2000 persons during lean periods. The Smart Pedestrianized Streets project is also being developed on similar lines covering an area of 9.4 sq. km and it has several interior roads that connect both commercial and residential parts of the city. The outcomes of the initiatives are being monitored at regular interval by the city authorities.

- **Scale:** The projects are mostly concentrated within the ABD region and would be replicated across PAN city in the long run.

- **Funding Pattern:** CSCL is funding the project with support from GCC.

- **Progress:** Completed Stage

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier I</td>
<td>163428</td>
<td>P1- Sensory Park</td>
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<tr>
<td></td>
<td></td>
<td>P2- Retrofitting of Green Open Spaces</td>
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<td>Physical &amp; Social Infrastructure, Built Environment</td>
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<td></td>
<td></td>
<td>P3- Pedestrian Plaza</td>
<td>Completed</td>
<td>Physical &amp; Social Infrastructure, Mobility</td>
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<tr>
<td></td>
<td></td>
<td>P4-Smart Pedestrianized Streets</td>
<td>Completed</td>
<td>Physical &amp; Social Infrastructure, Mobility</td>
</tr>
</tbody>
</table>
V. Davanagere

City Profile

- City Population: 4,34,971
- Persons with Disabilities population: 5,465
- Density: 5,640 per sq.km
- Area under DMC: 77.12 sq.km

Davangere, a city in central Karnataka, was accorded the status of City Municipal Corporation as recent as January 2007. The city’s most notable industries include textile and agricultural processing. Lately, Davangere has been promoting itself as a centre for higher education. The district has an excellent social infrastructure, with a high number of educational institutions and healthcare facilities. To adhere to the goals and visions of SCM, the city is taking numerous initiatives to focus on inclusive development. The ABD and PAN city proposals focus on developing accessible parks/open spaces, promote sustainable means of transportation with an emphasis on pedestrianization of roads and build digitally inclusive smart infrastructure.

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III</td>
<td>5465</td>
<td>P1- Integrator for implementation of E-Governance Services</td>
<td>Ongoing</td>
<td>ICT</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the identified parameters.

- **Area of Interventions**: The project aims to enhance the e-governance and public service delivery mechanism through ICT intervention.
- **Type of Projects**: The project is envisaged to make public services inclusive for all and ease the e-governance mechanism. It aims to benefit the city stakeholders through developing a collaborative digital platform for Pan city usage.
- **Scale**: Pan City
- **Funding Pattern**: DSCL is implementing and funding project.
- **Progress**: Ongoing
VI. Guwahati

City Profile

City Population: 9,573,522
Persons with Disabilities population: 16,002
Density: 4,370 per sq.km
Area under GMC: 219 sq.km

Guwahati is the capital city of Assam, which is among the states with a low level of urbanisation. The city has witnessed several periods of growth and decline from being an important cultural, religious, economic, and political centre to mere a war site. The city is a crucial hub of economic activity in the entire North-East region. Today, while this ancient “City of Eastern Light” has regained its importance as an urban centre, intense growth has led to physical, social and environmental vulnerabilities regardless of numerous planned efforts. As per the city’s SCP, innumerable interventions have been planned to focus on inclusive development. The concept of developing public realm based on Barrier-free/Universal design elements, build safe and security features, promote pedestrian movement by demonstrating an inclusive model for development. This would offer a host of opportunities for all sections of society.

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>16,002</td>
<td>P1 - Smart Bio Toilets Completed Physical &amp; Social Infrastructure</td>
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<tr>
<td></td>
<td></td>
<td>P2 - Refurbishment of Gandhi Mandir Completed Physical &amp; Social Infrastructure, Inclusive Tourism</td>
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<tr>
<td></td>
<td></td>
<td>P3 - Installation of LED Street Light Completed Physical &amp; Social Infrastructure, Mobility</td>
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</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** Guwahati Smart City Ltd (GSCL) has undertaken certain initiatives across ABD area as well as Pan City to make the city inclusive for all. The areas of interventions are focused on building accessible physical infrastructure and placemaking approach to revive derelict urban spaces as public realms.

- **Type of Projects:** The projects’ outcomes have offered the city with sustainable and accessible sanitation facilities, inclusive parks/open spaces, promoting inclusive tourism, safe public spaces through enforcing community participation to take ownership in the city development initiatives.

- **Scale:** ABD/PAN City

- **Funding Pattern:** The projects have been funded under SCM as well from State Government Funds.

- **Progress:** Completed Stage
VII. Kakinada

City Profile

City Population: 3,12,538

Persons with Disabilities population: 77

Density: 5,449 pp sq.km

Area under KMC: 57.36 sq.km

Kakinada is Andhra Pradesh’s fourth largest city, adjacent to the mouth of major regional river - Godavari. The city has the state’s second largest port, and the country’s first to be built as a PPP initiative. A similar mechanism is bringing a new shipyard to the city. The city primarily exports seafood and fertilizers. Under the Smart Cities’ Vision, the city aims to achieve inclusivity across major urban development initiatives.

Key Project Insights:

<table>
<thead>
<tr>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>P1- Upgradation of Schools</td>
<td>Proposed</td>
<td>Physical &amp; Social Infrastructure, Built Environment, ICT</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions**: Kakinada Smart City Corporation Limited (KSCCL) is trying to bridge the gap between technology and education by putting efforts into synergetic approaches. The project is in the planning stage and on-ground work shall begin in the month of February 2020.
- **Type of Projects**: It is aiming to develop 67 municipal schools with ICT infrastructure, introducing digital teaching-learning techniques, accessible toilet facilities, beautification of school premises, digital classrooms along with necessary classroom furniture. The outcomes would be measured in terms of specific indicators e.g. Improvement in enrolment of students, increase in girl child ratio, access to quality education and enablers to distance learning mode.
  - **Scale**: ABD zone
  - **Funding Pattern**: The projects have been funded under SCM.
  - **Progress**: Proposed Stage
VIII. Kanpur

City Profile:

City Population: 27.74 lakhs

Persons with Disabilities Population: 81,988

Density: 1,452 pp sq.km

Area under KMC: 260 sq.km

Kanpur is the eleventh most populous urban city in India and the largest urban agglomeration in Uttar Pradesh. The city lies on the right bank of the Ganga river, which acts as a physical and administrative boundary. The city has been a renowned producer and exporter of leather and textile goods, which started as the inception of the industrial revolution in the country. The majority of industries came along the transport nodes of waterways and railways. Persons with Disabilities share around 3% (81,988) of the total Kanpur city population of which age-group 20 – 29 occupies the major share with hearing as one of the prominent disabilities specific to that age-group. The city’s urban development approach should address the barriers to inclusion of persons with disabilities and promote disability inclusion across urban infrastructure and services.

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>81988</td>
<td>P1- Implementation of E-Pathshala</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, ICT, Built Environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2- Smart Roads</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Built Environment, Inclusive Tourism, ICT</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** Kanpur Smart City Ltd (KSCL) intends to promote disability inclusion across its urban development initiatives. Few of the ongoing interventions are focused on digital inclusions as well as building pedestrian infrastructure for providing the ease of access to major markets, neighbourhoods, parks etc.

- **Type of Projects:** The E-Pathshala project aims to enhance the learning process using multimedia technologies, ICT enabled teaching and learning modules for children who suffer from some sort of disability. It also focusses on creating E-learning platform and adopting the global standards for making education accessible to all. The Smart Road project aims to retrofit few sections of a designated street with provision of street infrastructure including street lights, landscaping elements, cycle tracks in order to provide barrier-free and safe pedestrian movement for the community and strengthening the tourism potential of the city.

- **Scale:** The project geography is defined within the ABD Zone of the city and would be replicated across PAN city in the future course.

- **Funding Pattern:** KSCL is funding the projects under SCM.

- **Progress:** Ongoing stage.
IX. Jaipur

City Profile:

- City Population: 30,46,163
- Persons with Disabilities Population: 74,541
- Density: 6285 pp sq.km
- Area under JMC: 467 sq.km

Jaipur is the tenth largest metropolitan region in India, which is also a popular tourist destination and a centre of business, commerce, and education. It has been the prime focus of the state governments’ visioning strategies by virtue of it being an urban heritage city and the capital of the state of Rajasthan. Hence, the efforts have been made to develop it into a ‘world-class’ city. As per the city’s Smart City vision, an emphasis has been made on preserving the historical importance of the city and reviving the urban areas through implementing innovative and smart solutions for improving the quality of life of its citizens.

Key Project Insights:

- **P1-Smart Roads**: The project aims to increase the pedestrian movement in the designated streets from 15% to 25%. The streets will be designed to provide barrier-free access and reduce traffic congestion.

- **P2-Façade Improvement and Illumination**: The project aims to preserve the built heritage fabric and character of Jaipur walled city to maintain its unique identity, increase image ability of the bazaars/streets, boost tourist footfall during night by illuminating the façade through proposing LED installation across heritage areas, billboards, signages, etc.

- **P3-Smart Roads (Integrated City Operation Centre)**: It aims to control digital monitoring of Smart Roads with the help of Integrated City Operation Centre. The major components include city surveillance mechanism, smart lighting, pollution monitoring, traffic management mechanism, pedestrian safety, etc.

- **P4-Smart Toilets**: Around 50 smart toilets have been installed within the city to make sustainable sanitation facilities accessible for all. These toilets are monitored online through integrated data management system and has inbuilt complaint redressal facility.
<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>74541</td>
<td>P1-Smart Roads</td>
<td>Ongoing</td>
<td>Mobility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2-Façade Improvement and Illumination</td>
<td>Ongoing</td>
<td>Built Environment, Inclusive Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P3-Smart Roads (Integrated City Operation Centre)</td>
<td>Ongoing</td>
<td>Mobility, ICT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P4-Smart Toilets</td>
<td>Completed</td>
<td>Physical &amp; Social Infrastructure</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions**: The listed projects aim to preserve the Heritage and Tourism Precinct of the city through effective implementation of smart solutions in order to transform the city as accessible, safe and inclusive for all.

- **Type of Projects**: Jaipur Smart City Ltd. (JSCL) has taken several initiatives to promote inclusive tourism by transforming public places/heritage sites accessible for all, enforcing safe pedestrian movement, enhancing the participation of persons with disabilities through integrating the concept of barrier-free design in the interventions and as well as preserving the existing heritage and culture of the city. Digital components in city surveillance mechanism, smart lighting, pollution monitoring, traffic management mechanism, pedestrian safety, etc. have been integrated to achieve digital inclusion.

- **Scale**: The project geography is defined within the ABD Zone of the city and would be replicated across Pan city in the future course.

- **Funding Pattern**: JSCL as well as JDMA funds have been converged for implementing the listed projects.

- **Progress**: Ongoing/Completed stage
X. Madurai

City Profile:

City Population: 14,70,755

Persons with Disabilities Population: 19,890

Density: 9,937 pp sq.km

Area under MMC: 148 sq.km

Madurai is the second largest city in Tamil Nadu. Today it is an important educational, industrial and tourism hub, but retains many remnants of its historic origins. The city is growing rapidly and is expected to rise from 1.4 million in 2011 to over 2 million people by 2031 (the end date for the upcoming Madurai Master plan). This will create further pressure on infrastructure, housing, and basic services. Under the SCM, the Pan-City proposal focuses on smart solutions for the benefit of the entire city by using ICT based solutions and thereby improving governance and delivery of public services. Whereas the ABD zone proposal is focussing on Heritage Preservation and Enhancement, building accessible Tourism infrastructure, IT integration for aiding Tourists and Citizens have been considered to improve access to urban infrastructure.

Key Project Insights:

- **P1. Redevelopment of Fruit Market**
  
  The Fruit market has been redesigned with the integration of basic infrastructure e.g. Street Lights, Water Supply, Sanitation Facilities, accessible streets, etc.

- **P2. Multi level car parking**
  
  The facility would ease the problem of traffic congestion within the area. It would also comprise of additional infrastructure e.g. accessible sanitation facilities, public redressal system, surveillance camera, etc.

- **P3. Redevelopment of Pooyar Bus stand**
  
  The Bus stand has been redeveloped as a public convenience center and to ease the traffic congestion. The in built components e.g. shopping areas, parking facilities, restrooms has been proposed to cater the needs of all strata of the users.
Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions**: The listed interventions aim to adopt sustainable mobility options for easing the traffic congestion as well as improve the access to public places/markets/neighbourhood, etc. within the ABD zone of the city.

- **Type of Projects**: The initiatives are being implemented by Madurai Smart City Ltd. with an objective to transform the city as accessible to all. The project outcomes envisage to transform the commercial zones/public spaces as inclusive for all through integrating barrier-free design elements, accessible sanitation facilities, reducing traffic congestion and creating scope for accessible pedestrian movement, promoting digital inclusion, etc.

- **Scale**: The project geography is defined within the ABD Zone of the city.

- **Funding Pattern**: The projects have been funded under SCM as well from State Govt. Funds.

- **Progress**: Ongoing/Completed stage
## XI. Nashik

### City Profile:

- **City Population:** 1,486,053
- **Persons with Disabilities Population:** 26,572
- **Density:** 5,629 pp sq.km
- **Area under NMC:** 264 sq.km

Nashik is a pilgrim centre known for its historical importance and its intangible heritage manifested through various religious occasions. It is an Important national centre for agriculture-based trade. Additionally, it has a diversified industrial base and a presence of leading Indian and multi-national companies. The Smart City proposal of Nashik focuses on building a sustainable city, preserving its cultural heritage and to build a diversified and resilient economy.

### Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>26,572</td>
<td>P1- Redevelopment of Major and Minor roads</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Built Environment, Mobility</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2- Safe and Smart Nashik</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, ICT</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** The interventions under Nashik Municipal Smart City Development Corporation Ltd. (NMSCDCL) aim to redevelop the major and minor roads across the city with digitally enabled infrastructure to ensure safety of the users, pedestrian friendly design integrated with barrier-free features. The project outcome is envisaged to discourage the use of personal vehicles by building a robust public transportation system and to bring about a modal shift from the use of personal transport to public transport.

- **Type of Projects:** Under the Safe and Smart City Project, NMSCDCL along with the Government of Maharashtra have envisaged to undertake various smart initiatives for improving the overall quality of city life. The project would have a separate Command and Control System for Public Address System, equipped with environmental sensors, citizen experience sharing platform, digitally inclusive help desk and Citizen Service Portal. The project will assist in transforming the city to improve its walkability factor by integrating accessible street infrastructure.

- **Scale:** The project geography is defined within the ABD Zone of the city.

- **Funding Pattern:** The projects have been funded under SCM as well from State Government Funds and are being implemented under PPP mode.

- **Progress:** Ongoing stage
XII. Sagar

City Profile:

- City Population: 274,556
- Persons with Disabilities Population: 3,404
- Density: 1,170 pp sq.km
- Area under SMC: 234.72 sq.km

Sagar, traditionally known as “Saugor” meaning a hundred forts, is picturesquely situated on a spur of the Vindhya Ranges in the Bundelkhand region and is located around 180 kms north-east of the state capital of Bhopal. This historic city evolved around the famous Lakha Banjara Lake has the potential to become the most prominent commercial centre in the region. Under the SCM, the city’s vision is to transform Sagar as a sustainable city with world class infrastructure facilities and ensure that basic services are accessible to all. Application of Smart Solutions would enable the use of technology and data to improve access to infrastructure and services. Comprehensive development in this way will improve quality of life, create employment and livelihood opportunities for all, especially the poor and the disadvantaged, leading to an inclusive city.

Key Project Insights:

<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier III</td>
<td>3,404</td>
<td>P1- Redevelopment of Parks</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Built Environment, Inclusive Tourism</td>
</tr>
</tbody>
</table>

Key insights have been highlighted based on the following identified parameters.

- **Area of Interventions:** Under the ABD proposal, Sagar Smart City Ltd. (SSCL) has identified certain parks, which are in derelict state with a motive to revive the green areas and transform them into inclusive community spaces.

- **Type of Projects:** In order to enhance the recreational value of the town, SSCL has identified certain parks for redevelopment under the Smart Cities Mission. The objective is to provide attractive, safe and usable green spaces to the public at large, with special emphasis on provision for children-friendly and elderly-friendly components and simultaneously enhance the aesthetic value of the town as well. SSCL has also enforced an indicator-based monitoring system to assess the operational and functional aspects of the parks.

- **Scale:** The project geography is defined within the ABD Zone of the city.

- **Funding Pattern:** The projects have been funded under SCM.

- **Progress:** Ongoing stage
XIII. Varanasi

City Profile:

- City Population: 11,98,491
- Persons with Disabilities Population: 39,408
- Density: 14,598 per sq.km
- Area under VMC: 82.1 sq.km

Varanasi, also known as Benares or Kashi, is located on the banks of the river Ganga in Uttar Pradesh, and is one of the largest urban centres tagged as fast-growing cities in the state of UP. It is considered to be one of the holiest of the seven sacred cities in Hinduism, Buddhism and Jainism. It is also considered as one of the oldest continuously inhabited cities in the world and in India. It is a part of the pilgrimage circuit with cities namely, Varanasi – Allahabad – Gaya. Apart from religious importance, the city has been a centre of spiritual, educational and industrial activities since time immemorial.

Around 3.3% of the total city’s population have some form of disability. As per census 2011 data, of district level, age-group 10-29 are the most perceptible sections of the persons with disabilities with hearing and seeing as the most prevalent type of impairments. Well planned infrastructure and inclusive urban services are fundamental to unlocking the potential role of this section of the population and contribute towards the city’s economic growth.

Key Project Insights:

- To be designed as Green Space for recreational purposes that promotes green cover of city and reduce environmental pollution. It would contain pedestrian pathways, Kids Play Area, Seating, Open Gym and Yoga – Meditation Area, Herbal Trees and Flowery Plants, Kiosk/Vending Zones etc. along with centrally placed Ashoka Stambh. Efficient utilization of land resources, decongesting the roads would be done through designated off-street parking space for citizens.

- To improve the urban environment and aims to humanize these infrastructure and reclaim the underutilized spaces to create well-lit, cohesive public spaces such as pocket-parks, shaded seating areas, gazebos, open gym, kids play area, boating facility, parking area, etc.

- The project aims to provide an improved existing sports infrastructure for the citizens of Varanasi to attract more people which will help in generating revenue. Basic level of access such as parking lots, entrances, rest rooms and other necessary parts of buildings would be made accessible for PwDs.
<table>
<thead>
<tr>
<th>City Classification</th>
<th>Disabled Population (UAs - Census 2011)</th>
<th>List of Projects</th>
<th>Project Stage</th>
<th>Areas of Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tier II</td>
<td>39408</td>
<td>P1- Redevelopment of Parks</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Built Environment, Inclusive Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P2- Development and Beautification Ponds</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Inclusive Tourism</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P3- Redevelopment of Stadium</td>
<td>Ongoing</td>
<td>Physical &amp; Social Infrastructure, Inclusive Tourism</td>
</tr>
</tbody>
</table>

Key features of the insights have been highlighted based on the following parameters.

- **Area of Interventions:** Under the SCM vision, Varanasi is adopting innovative solutions to focus on the overall city development, which is inclusive for all. Considering the high foot-fall of tourists, which is almost five times the city’s population, Varanasi is taking tremendous efforts to transform itself as an accessible, safe and inclusive urban centre, while simultaneously retaining the heritage, culture, traditional and spiritual value of the place. Being a part of numerous flagship missions/schemes of GoI, the city’s authorities are making immense efforts to make urban services and infrastructure inclusive to all.

- **Type of Projects:** The intervention areas are attentive to develop parks/green areas in order to increase the green cover of the city, transforming public spaces/lakes/ponds with universal design/barrier-free elements. Being a heritage and spiritual centre, which attracts high inflow of tourists, the city is focusing on decongesting the old city area with emphasis on pedestrianization of streets, streetscape development, incorporation of street furniture and landscape elements. One of the ongoing initiatives is to redevelop the existing stadium by incorporating universal design features, redesigning the existing facilities for making it as barrier-free sports infrastructure.

- **Scale:** The project geography is defined within the ABD Zone of the city and would be replicated across Pan city in the future course.

- **Funding Pattern:** VSCL is funding the projects under SCM.

- **Progress:** Ongoing/Proposed stage
6.2 Observations on Cities Insights

From the analysis of the smart cities proposals and cities responses on integrating the components of BASIIC tenets, it has been observed that existing urban development agenda in India do not enforce the cities to imbibe the components of accessible, safe and inclusive infrastructure across its urban development initiatives. Majority of the listed projects do not specify persons with disabilities as one of the project beneficiaries and the funding mechanism does not cover any additional budget to focus on Disability-Inclusive components. The existing data enumeration process doesn’t capture the demographic details related to age, type of impairments, economic status, etc. of this section of the population, which is reflected as lack of need-based planning towards inclusive development. Following are a few of the major suggestions on how smart cities should adopt an inclusive planning and design approach for the cities to be Disability-Inclusive.

- There is a need for integrated urban policy to drive urban development agenda across different tiers of the government which would address the barriers related to disability inclusion and promotes equality, empowerment and economic inclusion.
- Cities should adhere to the existing Policies/Guidelines/Development norms on developing Disability-Inclusive infrastructure to tackle the physical, social and attitudinal barriers faced by persons with disabilities.
- Cities should focus on adopting a holistic approach towards an inclusive development and imbibe the concept of inclusive design and planning principles since the inception of an urban initiative rather than adopting the retrofitting approach.
- City stakeholders should explore the scope of convergence between ongoing missions for developing a sustainable funding and Operations and Maintenance mechanism for implementation of disabled inclusive infrastructure. The convergence of aforesaid missions not only promotes an integrated planning approach across various programs and schemes but also strives for achievement of improving the overall urban environment.
  - There is a need to empower municipalities/local level institutions through enhancing technical capacities to plan, design, implement and maintain infrastructure services addressing the barriers to inclusion.
  - Cities should adopt strategies that would focus on universalization of basic services including education, health and other public services, building the governance mechanism of the cities based on the principles of social cohesion and civic engagement.
  - City stakeholders would adopt the process of inclusive public consultation and build community engagement with persons with disabilities at every stage of the planning, designing and monitoring of infrastructure and cities programs.
  - Disabled People Organizations (DPOs) and Subject Matter Experts (SMEs) to be involved for advocacy as well as to address the lack of empathy and build sensitisation towards the barriers and challenges faced by persons with disabilities.
  - Development of a robust urban-data information system, to adopt evidence based planning approach and to monitor and evaluate the outcomes of this process.
  - Easing of procurement policies to enable city decisions makers/leaders to adopt innovative and smart solutions for building Disability-Inclusive infrastructure.
Shortlisting of Partner Cities

Based on the city assessment framework and inferences from the Smart Cities response to Smartnet hosted template, TASU has arrived at a pool of five cities namely Chennai, Chandigarh, Varanasi, Kanpur and Jaipur. The flowchart below establishes the linkage between various criteria/indicators which have been taken into account to shortlist the cities.

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**Stage I Cities Shortlisting**  
(Based on City Assessment Framework)

**Stage II Cities Shortlisting**  
(Based on Smart Cities Response to Online Project Template)

Criteria/Indicator for Shortlisting Cities
- Convergence between SCM/ AIC
- Disabled Population
- City Classification
- City Internt
- Cities under DFID/NIUA Interventin

List of Cites - Lucknow, Kanpur, Varanasi, Pune, Vishakhapatnam, Bhopal, Bhopal, Bhubaneshwar, Chennai, Ahmedabad, Ranchi

List of UTs - Delhi, Chandigarh

13 Smart Cities responded with the details of projects that have accessibility/inclusivity/safety components.

List of Cites - Belagavi, Bhagalpur, Chennai, Davanagere, Guwahati, Kakinada, Kanpur, Jaipur, Madurai, Nashik, Sagar, Varanasi

List of UTs - Chandigarh

Criteria/Indicator for Shortlisting Cities
- Project Implementation Stage
- City Wise Disabled Population
- City Classification/ Characteristics

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Final List of Cities Shortlisted for Collaboration  
- Chandigarh  
- Kanpur  
- Jaipur  
- Chennai  
- Varanasi

---

*Figure 30: Strategy adopted to shortlist cities*
The following table gives a brief strategy for shortlisting the below mentioned five cities.

### Table 3: List of Shortlisted Cities

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Name of the City</th>
<th>Characteristics of the City</th>
<th>Shortlisting Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chennai</td>
<td>Capital</td>
<td>The PwDs population in Chennai comprises of around 3.5% of the total demographic share. The city has taken several innovative measures to make it inclusive for all. The learnings from such initiatives can be mapped under BASIIC program for replication in other cities.</td>
</tr>
<tr>
<td>2.</td>
<td>Chandigarh</td>
<td>Administrative/Capital</td>
<td>Being an administrative capital, it has immense opportunity to take innovative measures to support the need of PwDs and set as leaning examples. The city is on the process of implementing similar interventions where TASU can leverage technical assistance to implement them.</td>
</tr>
<tr>
<td>3.</td>
<td>Varanasi</td>
<td>Heritage</td>
<td>The city has immense potential to promote inclusive tourism and develop disabled friendly infrastructure based on universal design. This would also lead to enhance the untapped tourism potential and promote economic growth.</td>
</tr>
<tr>
<td>4.</td>
<td>Kanpur</td>
<td>Industrial</td>
<td>Uttar Pradesh has the highest share of Persons with Disabilities Population across India. In addition, NIUA is also implementing other projects in the city. Working with Kanpur would assist in leveraging already established administrative partnerships and fastrack the program activities.</td>
</tr>
</tbody>
</table>

In addition to that, other cities (Bhubaneshwar, Dehradun, Delhi, Indore, Vishakhapatnam, Chennai) have also shown interest to take initiatives focussing on Persons with Disabilities/Children/Women/Elderly Persons. TASU is currently exploring the city wide need on technical assistance/knowledge and capacity building and developing strategy to collaborate and support the cities under the program.
7.1 Logical Framework to Select Partner Cities

A framework has been developed to select partner cities under BASIIC program which is based on several interrelated factors. Status of state and city wise share of Persons with Disabilities, ongoing initiatives across missions/schemes and identify the scope of convergence between those schemes that would play a major role in ascertaining scope for implementing pilot interventions in the selected cities. The below diagram gives a brief overview of the framework developed:

Visit to the cities would be conducted to understand the perspective of city stakeholders (Commissioner – Municipal Corporation, CEO – SPV, Smart City Ltd., Social Welfare Department, DPOs, etc.) on the need and context for planning and designing cities accessible for all. The consultation would lead to mapping the intent in implementing the pilot interventions aligning with the BASIIC tenets and would facilitate in identifying scope to collaborate with the cities under the program. The objective of the city visits and consultation process with stakeholders is envisaged to achieve the following outcomes.
Strategy Adopted for Collaborating with Partner Cities

The Program intends to collaborate with two partner cities and provide thorough technical assistance and support across verticals/sectors to transform the urban centres to address the barriers of inclusion faced by Persons with Disabilities including Children, Women and Elderly persons.

TASU under BASIIC program would support the partner cities through the following aspects:

- Provide technical support in implementing innovative interventions at pilot scale.
- Providing need-based technical assistance from subject matter experts to update the existing DPRs/feasibility reports with respect to BASIIC tenets for the city ongoing interventions.
- Building the capacities of the city authorities and sharing knowledge on technical know how to achieve disability inclusion across sectors.
- Adopting a cross learning approach where the pool of shortlisted smart cities can learn from each other about best practices through conducting national/state/city level workshops.

- Creating an E-knowledge sharing platform to learn from the global and national best practices.
- Creating an e-knowledge sharing platform to learn from the global and national best practices.

Under the program mandate, the major focus would be to assist the two selected partner cities in identifying sector-specific pilot interventions while addressing the barriers to inclusion. Technical support based on “universal design/inclusive planning and design principles” would be leveraged to implement the suggestive list of pilot scale interventions. Support and recommendations would also be offered to local governments on the adoption and implementation of inclusive development strategies, enforcing policies and solutions, guiding cities on the use of technology and innovation to deliver sustainable urban development outcomes. The experience and learning from the implementation process would be documented and shared with other cities to adopt and replicate tailor-made solutions to meet city specific requirements.

Figure 33: Mode of Engagement with Partner Cities
8.1 Leveraging Technical Support to Partner Cities

Based on the project implementation stage (Proposed/Ongoing/Completed) and ongoing efforts; city specific technical support strategy would be developed by TASU to collaborate with the partner cities. The strategy can be defined as follows:

**Proposed Stage**
- Technical assistance in planning, designing and implementing projects
- Support to review DPRs in consultation with accessibility expert to reinforce inclusion of BASIC Program tenets
- Support in identification of sector specific pilot interventions for implementation

**Ongoing Stage**
- Technical assistance requirement shall be defined based on progress of ongoing projects
- Building the capacities of the stakeholders in implementing such solutions at pilot scale
- Support in identification of sector specific pilot interventions for implementation

**Completed Stage**
- Learnings from Cities Efforts
- Disseminating knowledge to other cities through capacity building program/workshops
- Support in identification of sector specific pilot interventions for implementation
- Introduce MEL systems for continuous learning and replication

8.2 Indicative List of Sector Specific Interventions

A broad list of sector specific interventions has been collated to understand the scope of implementing similar interventions at a pilot scale in the partner cities. The list would be useful for the cities in identifying the need for implementing pilot interventions based on “universal design/inclusive planning and design principles” for transforming cities accessible and inclusive for all. Based on consultation with city stakeholders, TASU would assist each partner city to shortlist the list of interventions and prioritise it for implementation with the technical support of BASIC program. The below illustrated table gives a brief roadmap for implementing sector specific interventions at the city level.
### Table 4: Indicative list of Pilot Interventions

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Focus Area under Each Sector</th>
<th>Indicative list of Pilot Interventions</th>
</tr>
</thead>
</table>
| 1. Policy and Legislation Framework | • Model Building Byelaws  
   • Development Control Regulations  
   • Master Plan, Regional Plan  
   • Local Area Plans (TPS, Zonal Plan)  
   • Special Purpose Plan (CDP, CMP, CSP, DMP, SRP, TMP, HMP)  
   • Project Specific DPRs/Feasibility Studies | • Updating of Model Building Byelaws (MBBL)/Development Control Norms to incorporate inclusive planning and design principles.  
• Guidelines pertaining to preparation of Master Plans/Local area Plan/Town Planning Schemes to adhere to inclusive planning and design principles.  
• Sector specific plans/project DPRs adhere to “Audit tool Kit” to be prepared under BASIIC program.  
• Compliance of Building Approval Plan System with accessibility/inclusivity/safety features. |
| 2. Institutional Levele Framework | • Smart Cities: Special Purpose Vehicle  
   • Municipal Corporation  
   • Development Authorities  
   • Town & Country Planning Organization (TCPO)  
   • Social Welfare Dept | • Provision for inclusion of a nodal officer in City Level Advisory Forum (CLAF)/Board of Directors under SCM.  
• Efforts for convergence of Inter departmental engagements in partner cities to focus on inclusive urban development. |
| 3. Built Environment (Physical Infrastructure) | • Housing complexes  
   • Educational Institutions  
   • Office & Workplace  
   • Commercial areas  
   • Sanitation facilities | • Making built environment accessible through incorporation of Ramps, braille equipped signs, soft landscaping, smart signages, Staircase/Lifts/Handrails/Lighting, etc.  
• Accessible Public Sanitation Facilities (Barrier free toilets) |
| 4. Social Infrastructure (Public Utilities) | • Access to Education  
   • Healthcare Services  
   • Socio-cultural Centres  
   • Rehabilitation centres  
   • Religious centres  
   • Public Services (Banking/Postal/Telephone/Police) | • Access to Digital Education/health facilities  
• Accessible religious sites/cultural centres  
• Livelihood & Employment opportunities  
• Digitally inclusive Public engagement platforms/door to door service delivery system |
| 5. Recreational Spaces | • Parks & Playgrounds  
   • Museums/Gallery/Cinema Halls/Sport Facilities | • Open spaces/recreational zones to be designed based on the concept of Universal Design Principles.  
• Accessible and safe Public Realm (e.g. Riverfront, public plaza, etc.)  
• Use of ICT solutions to make infrastructure accessible to all. |
| 6. Mobility | • Road/street design/Parking  
   • Public Transport Facilities (Bus/Railways/Airways Accessible waterways/MRT)  
   • Para Transit Systems | • Accessible Public Transport/Para-Transit System  
• Accessible Pedestrian Pathways (Street Furniture/Wheel chair access/Tactile Paving/Wayfinding and Orientation & Signage/Obstruction free footpaths with ramps, bollard spacing for wheelchair users, audio signals for crossings).  
• Digital enabled smart cards  
• Smart kiosk under integrated transport system, smart bus shelters/stops. |
| 7. Inclusive Tourism | • Accessible Infrastructure for Tourist/heritage Sites | • Barrier-free access to heritage/tourists’ sites  
• ICT enabled heritage app  
• Availability of wheelchairs, audio guides within the heritage sites  
• Pedestrianization of heritage walks (wheel chair access)  
• Accessibility Plan for Ghats/Riverfronts |
| 8. ICT (Each sector should focus on Developing Digitally Inclusive infrastructure) | • Accessible ICT/Digital inclusion | • Access to online applications and websites  
• IT-enabled government services  
• Access to mobile based applications  
• Online portals for empowering PwDs. |
City Work Plan

Based on the framework for collaboration with partner cities, TASU intends to engage and undertake various city level activities as per the BASIIC Program timeline. The proposed activities would require thorough engagement and participation of city stakeholders. The outcomes would assist in understanding the need for planning and designing cities while addressing the barriers to inclusion faced by Persons with Disabilities (irrespective of age, ability and gender) and adhering to the existing policies/guidelines and buildings norms. These initiatives would also assist in identifying the gaps and challenges faced by the city decisionmakers/leaders during the planning, designing and implementation of pilot interventions. The two-way engagement would benefit the city in building knowledge-based information platform and building technical capacities of the city officials about various facets of Disability-Inclusive development. The indicative list of the city level activities is mapped out below:

**City Assessment Workshop:** After signing of MoU with the city, a working session would be conducted with the key representatives from the partner city. The session would assist in identifying city specific barriers to inclusion where technical assistance would be required to implement and demonstrate the pilot interventions.

**City Audit Report:** A baseline study would be conducted for the city to augment the capacity of partner cities to achieve Disability-inclusive Urban Development through an emphasis on evidence-based planning and informed decision making process. It would be an exercise to assess the urban development initiatives as well as validate the compliance of policies/guidelines/development norms across these initiatives to promote inclusive development.

**Design Challenge:** The results of the city audit report would help to identify possible problem statements and organize a design challenge to invite innovative solutions across global and national level.
Implementation of Pilot Interventions: TASU would provide technical support in implementing innovative interventions at pilot scale. The assistance would be in the form of developing concept note for the interventions, technical support for preparation of DPR/Feasibility Report, identifying site for on-ground implementation, support to develop MEL framework to monitor the outcomes, support to city’s ULBs for tendering out the defined proposal, etc.

Training and Capacity Building: The program also focuses on building the capacities of the city authorities through organizing training programs. The training modules would cover information on universal design, inclusive planning and design principles, technical know-how on guidelines/building norms for on-ground implementation. Sensitization of the city officials would be done to develop awareness on the barriers and challenges faced by Persons with Disabilities.

Cross Learning from other Smart Cities: Opportunities can be explored where the partner city would have the scope to learn, adopt the good practices from other cities through participating in national/state/city level workshops.

International Exposure Visits: Similar learning opportunities can also be explored with cities which are doing tremendous work in this sector at a global level.

Knowledge Dissemination Workshop: Impact created in the partner cities through the established partnership, impact on the lives of Persons with Disabilities along with the learnings of the program activities, etc. can be disseminated at the end of program tenure through conducting National Workshop, with the support from MoHUA.

9.1 Activity Work Plan for Partner Cities
The work plan is designed as per the outlined city level activities that will be undertaken in the partner cities as per the program tenure. The defined activities are proposed as per the program objectives and goals focusing on building technical capacities of the city stakeholders along with leveraging technical support to enforce on ground implementation of pilot interventions and the city’s ongoing interventions relevant to BASIIC program tenets. Scope for cross learning from international and national best practices, building knowledge and technical know-how of the city officials have also been considered as part of the city’s collaboration/partnership. The learnings from the city level interventions and from the successful implementation of the program activities will be documented and shared at national level to disseminate across states and cities.
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Legend:
- Activity Timeline
References

- https://www.weforum.org/agenda/archive/inclusive-design
- https://ourworldindata.org/urbanization
- https://dghs.gov.in/WriteReadData/Orders/ 201807110205070537024SKM_554e18071113560.pdf
- Analysis from the Research Project conducted by G3ict and World Enabled Smart Cities for All in 2017
- https://www.thehinducentre.com/publications/policy-report/article25819850.ece
- Accessibility of urban transport for people with disabilities and limited mobility: lessons from East Asia and the Pacific; Julie Babinard, Wei Wang, Christopher R. Bennett and Shomik Mehndiratta
- Inspiring Future Cities & Urban Services Shaping the Future of Urban Development & Services Initiative; World Economic Forum in collaboration with PwC
- Smart Cities - How rapid advances in technology are reshaping our economy and society; Deloitte
Annexure 1: City Assessment Framework

- **Policy and Programs**
  - Smart City Mission
  - Accessible India Campaign (39 Cities)
  - Disabled Population
  - Classification of Cities (URDPMI Guidelines)

- **Data and Relevance**
  - 39 cities are spread across 26 States
  - 22 Cities under States with High Disabled Population

- **City Intent**
  - 22 Smart Cities are implementing projects which are accessible and inclusive for all
  - Out of 22 cities, 14 Cities are aligned to SCM & AIC Mission

**Tier I Cities**
- Tier I Cities - 8

**Tier II Cities**
- Tier II Cities - 12

**Tier III Cities**
- Tier III Cities - 2

**List of Cities**
- Delhi, Vishakhapatnam, Ahmedabad, Bhopal, Pune, Bhubaneswar, Chennai, Kanpur, Panaji, Ahmedabad, Chandigarh, Ranchi, Lucknow, Varanasi

**List of UTs**
- List of UTs – Delhi/ Chandigarh
Annexure 2: Online Template to capture Smart Cities Project Information

Smart city Project Information Form

Name of the City *
- Select -

Name of SPV *

Name of single point of contact *

E-mail id *

Mobile No *

Number of Relevant Projects *
1

Save Draft  
Next Page >
## Smart city Project Information Form

### Name of the Project

- [ ] If the project implemented solely by the SPV or in Consortium
- [ ] SPV
- [ ] Consortium

### Name of the Lead Implementation Agency

- [ ]

### Funding Agency

- [ ]

### Total Budget Outlay (in lakhs)

- [ ] 123456.789

### Project Duration

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### Thematic Areas of the Project

- [ ] Policy Interventions
- [ ] Implementation
- [ ] Capacity Building
- [ ] Awareness Generation

### Category of the Project

- [ ] Physical & Social Infrastructure
- [ ] Built Environment
- [ ] Mobility
- [ ] ICT
- [ ] Tourism

### Name of the Specific Project Location

- [ ]

### Beneficiaries of the Project

- [ ] Persons with Disabilities
- [ ] Children
- [ ] Women
- [ ] Elderly

### Description of the Project (499 Words remaining)

- [ ]

### Key Project Indicators and Bullet Points

- [ ]

### Key Components (In Bullet Points)

- [ ]

### Project Outcomes (In Bullet Points)

- [ ]

### Progress on Project Implementation

- [ ] 199 Words remaining

- [ ]

- [ ]

- [ ]
### Annexure 3: Template to Shortlist the Ongoing Cities Interventions

#### Scoping of Pilot Interventions - Varanasi City

| No. | Sector of the Project (Policy/Built Environment/Physical & Social Infrastructure/ Open Spaces / Parks & recreational Spaces / Mobility/Inclusive Tourism/ ICT) | Name of the Project | Stage of the Project (Proposed/Tendered/Ongoing/Completed) | City Stakeholders Involved | Project Duration | Source of Fund for Implementation | Project Geographical Location | Key Project Components | Project Beneficiaries | Available Project Documents (EoI/RFI/RFQ/Request for Proposal/Feasibility Studies/DPRs) | Issues & Challenges in Implementation | Priority for Implementation (High/Medium/Low) | Technical Support required from Cities under BASIIC Program | Way Forward for Collaboration |
|-----|---------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------|---------------------------|--------------------------|-----------------|----------------------------------|-----------------------------|------------------------|---------------------|------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 1   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 2   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 3   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 4   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 5   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 6   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 7   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 8   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 9   |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
| 10  |                                                                                                                                 |                   |                                                          |                           |                          |                 |                                  |                              |                        |                     |                                                                                         |                                                                                                                                  |                                                                         |                                                    |                                                |
Empower through inclusivity

The Department for International Development (DFID) leads the UK government’s work to improve inclusive growth needed for poverty reduction to make development sustainable in line with the International Development Act (2002), the Gender Equality Act (2014) and the Sustainable Development Goals (SDGs). The UK has expertise in a range of sectors highly relevant to the poverty reduction, inclusive growth and economic development including finance and infrastructure. Helping partner countries develop these sectors and improve their business environment will give firms and people greater opportunities to work in a stronger, more productive economy.

By 2030, India will become the most populous nation and third by GDP size (=USD 5 billion). India’s development trajectory in the next decade presents significant opportunities and challenges for global development.

India-UK development partnership is focused on inclusive economic development through building markets using development capital investment and technical assistance.

Established in 1976, National Institute of Urban Affairs (NIUA) was tasked to bridge the gap between research and practice on issues related to urbanization, and suggest ways and mechanisms to address these urban challenges of the country. For more than 40 years now, NIUA has been the vanguard for contributing to, and at times, building the urban narrative for a fast-evolving urban India. The Institution has been actively working towards bringing forth key areas of concern for urban India in order to build the urban discourse at various scales.

It has utilized its competencies in research, knowledge management, policy advocacy and capacity building to address the urban challenges, and continuously strive to develop sustainable, inclusive, and productive urban ecosystems in India. It has emerged as a thought leader and knowledge hub for urban development in India, and is sought out by both Indian and International organizations for collaborations and partnerships for India’s urban transforming journey. NIUA is committed towards aligning its efforts towards achieving the Sustainable Development Goals (SDGs) through all its initiatives and programs.

Contact us: National Institute of Urban Affairs, 1st Floor, Core 4B, India Habitat Centre, Lodhi Road, New Delhi -110003, India
Telephone: (91-11) 24617517, 24617543, 24617595 • Email: hvaidya@niua.org • Website: www.niua.org • @Niua_India

#BASIIC_NIUA
#AccessibleCities
#InclusiveCities
#SafeCities
#EmpowerthroughInclusivity