

Development of Urban Planning in India

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ABSTRACT

As per Global Liveability Index rankings released in 2019, by Economic Intelligence Unit, two major cities of India Delhi and Mumbai, found itself slipping in the rankings. It measures the living conditions in 140 cities. It is the direct result of Urban Planning and Development. Urban Planning is a professional way of developing urban areas by making physical plans and development regulations. Urban Planning is a combination of social, economic, environmental, and constructive efforts to make an urban dwelling a good, healthy place to live, work, and to move around. It was done to ease the negative physical and social effects on people that arose with the industrial revolution, particularly in urban areas. Urban local bodies or local governments implement urban development strategies. Urban Local Bodies are elected by the people. Planning and development for major cities and urban regions are done by urban/metropolitan/regional development authorities. These authorities are functionaries institutions under the state government. On the state government level, urban planning and development administration is administered by the State Town Planning Act and other relevant legal frameworks of each state. Currently, all states have ministries responsible for urban planning, urban development, housing, and governance. Spatial plans need to be accounted for to address issues on integrated land connectivity, landfills, urban drainage networks, land requirements, and a range of related urban complexities. Without spatial plans, it is extremely difficult to completely address the issues plaguing infrastructure in Indian cities.

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INTRODUCTION

Major policies Impacting Urban Development in India

74th Amendment to the Constitution

This 1992 amendment requires state governments to modify their municipal bylaws to empower Urban Local Bodies to function as institutions of self-governance. However, most Urban Local Bodies suffer from poor institutional frameworks and talent shortages. Moreover, the degree to which decision-making powers have been devolved in practice varies widely from state to state.[1,2]

Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013

This legislation, commenced in 2014, establishes new rules for compensation, resettlement, and rehabilitation to facilitate the smooth functioning of the property market. However, the compensation mechanism for public land acquisition has been

criticized as being unfair and unclear, while increasing the incubation time and increasing the overall costs of the project by as much as 5% in some cases. Since enactment, the majority of states have been unable to complete the land acquisition, and the act is currently under review.

Key Urban Development Missions in India

Recent Past Urban Development Mission

Jawaharlal Nehru National Urban Renewal Mission (JNNURM) was the recently concluded long-running Urban Development Mission of the Government of India. When it came to its closing stages, the Government of India launched 6 new missions.

The 6 new missions launched by the Government of India are

1. Atal Mission for Rejuvenation and Urban Transformation (AMRUT)
2. Pradhan Mantri Awas Yojana (PMAY) – Housing for all (Urban)
3. Smart Cities Mission (SCM)

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| <p>4. Swachh Bharat Mission (SBM)</p> <p>5. Heritage City Development and Augmentation Yojana (HRIDAY)</p> <p>6. Deen Dayal Antyodaya Yojana – National Urban Livelihood Mission (DAY-NULM)[3,4]</p> | <p>Other Urban Development Projects</p> <p>1. Industrial Corridors</p> <p>2. Country-Specific Tie-ups</p> |
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Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

The below table gives the details of the JNNURM Mission

Launched	2005
Implementing Agencies	Central, State, and City Governments
Focus Areas	Transport, Solid Waste Management, Stormwater drains, encroachments.
Closed	2014

The below table gives an overview of the AMRUT mission

Focus areas	<ol style="list-style-type: none"> 1. Basic services to households – water supply, sewerage, and urban transport 2. Develop greenery, well-maintained open spaces in cities, reduce pollution by increasing usage of public transport. 3. Stormwater drains, parking spaces, recreation centers
Duration	5 years (From 2015-16 to 2019-20)
Number of cities covered under this programme	500
Target	Supply 139 Lakh water tap connections
Funding	<ol style="list-style-type: none"> 1. Rs 77,640 crore. Rs 39,011 crore (50%) has been allocated to water supply 2. Rs 32,456 crore (42%) has been allocated to sewerage and septage management

Pradhan Mantri Awas Yojana (PMAY) – Housing for all (Urban)

The below table gives details on PMAY – Housing for all (Urban) Scheme

Launched	2015
Focus Area	Constructing more than 2 crore houses
The target group of the PMAY scheme	Women, Economically Weaker Section (EWS), ST, SC.
Mode of implementation	<ol style="list-style-type: none"> 1. Rehabilitation of slum dwellers 2. Credit linked subsidy 3. Affordable housing through public or private partnership 4. Subsidy for beneficiary led individual house construction or enhancement
Subsidy Amount	Rs 1 Lakh to Rs 2.30 Lakh per beneficiary
Cities covered	<ol style="list-style-type: none"> 1. Initial focus on 500 Tier I cities in 3 phases. 2. 4,041 statutory towns

Smart Cities Mission (SCM)

On September 7, 2019, Aurangabad Industrial City (AURIC), in Aurangabad, Maharashtra was inaugurated as the 1st greenfield industrial smart city of India. It covers an area of 10,000 acres.[5,6]

The below table gives details on Smart Cities Mission (SCM)

Launched	2015
Funding	Rs 98,000 crore
Number of cities	100
Objective	Provide smart solutions to improve city infrastructure and services
Focus areas	<ol style="list-style-type: none"> 1. Mobility and Energy efficiency 2. Electricity 3. Information and Communication Technology 4. Water Supply 5. Sanitation 6. Solid Waste Management

The following are the City identification criteria for the Smart Cities Mission (SCM)

1. One satellite city for cities with a population of 4 million or more (9 cities)
2. Most of the cities with a population of 1 Million – 4 Million (approx 35 out of 44 cities)
3. All states/UT capitals even if they have a population of less than 1 Million (17 cities)
4. Other cities that are important for tourism or religious or economic reasons (10 cities)
5. Cities with a population of 0.2 – 1.0 Million (25 cities)[7,8]

Swachh Bharat Mission (SBM)

Contamination of drinking water, bathing water, and open defecation have been a perpetual sanitary problem in India. In the year 2014, India had the highest number of people practicing open defecation.

The below table gives details on Swachh Bharat Mission (SBM)

Launched	2014
Objective of mission	1. Open Defecation Free by 2nd October 2019. 2. Contribute to India reaching Sustainable Development Goal (SDG 6), established by the UN in 2015
Funding	1. Rs 90 Billion allocated for the mission in the 2016 Union Budget. 2. World Bank provided the US \$ 1.5 Billion loans and \$ 25 Million in technical assistance

Some of the features of the Swachh Bharat Mission (SBM)

1. Provision of public, household, and community toilets.
2. The central incentive of 4,000 INR per household for construction of household toilets, 40% grant/VGF for each community toilet block.
3. Eradication of manual scavenging.

Heritage City Development and Augmentation Yojana (HRIDAY)

This mission has been launched to provide better amenities in Heritage cities.

The below table gives details of the HRIDAY Mission

Launched	2015
Funding	Rs 500 (100% funding by the Government of India)
Implementing Ministry	Ministry of Urban Development
Number of cities covered	This mission is being implemented in 13 cities
Objectives	1. Better infrastructure and services in Heritage cities like water, roads, street lights, increase security with CCTV, toilets 2. Preserve, conserve, and revitalize Heritage cities.

The below table gives the list of 13 cities where the Hriday Scheme is implemented

Ajmer	Badami	Kanchipuram	Varanasi
Amaravati	Dwaraka	Mathura	Velankanni
Amritsar	Gaya	Puri	Vellore
Warangal			

Deen Dayal Antyodaya Yojana – National Urban Livelihood Mission (DAY-NULM)

This scheme is aimed at addressing the livelihood concerns of the urban poor.

The below table gives details on DAY-NULM Mission

Preceded by	Swarna Jayanti Shahari Rozgar Yojana (SJSRJ)
Launched	2013
Implementation Ministry	Ministry of Housing and Urban Poverty Alleviation
Funding	1. Centre (75%) and State (25%); 2. North East and Special Category States: Centre (90%), State (10%)
Target Group	Urban Street Vendors
Objectives	1. Helping the urban poor in self-employment by providing skill development and easy access to credit. 2. Provide shelter to the urban poor.

Aspirants can check out various other schemes of Government for overall development –

National Water Mission Jal Jeevan Mission	Urban Flooding: Overview, Factors	Sponge Cities Mission In India
National Urban Health Mission (NUHM)	Atmanirbhar Bharat Abhiyan	National Nutrition Mission

Candidates can find more articles related to the various schemes launched by the Government of India by visiting the Government Schemes page.

Industrial Corridors

The Government of India is developing 5 major industrial corridors in various states. Many different agencies are involved in funding the Industrial corridor projects.[9,10]

The below table gives an overview of Industrial Corridors

Corridor	States	Key Players
Delhi-Mumbai Industrial Corridor	1. Haryana 2. Gujarat 3. Madhya Pradesh 4. Uttar Pradesh 5. Rajasthan 6. Maharashtra	Equity Holdings: Government of India 49%, Japan Bank for International Cooperation 26%, Housing and Urban Development Corporation 19.9%, India Infrastructure Finance Company 4.1%, Life Insurance Corporation of India 1%. Concept: Government of Japan.
Chennai – Bangalore Industrial Corridor	1. Karnataka 2. Andhra Pradesh 3. Tamil Nadu	Developers: Government of India with support from the Japan International Cooperation Agency
Mumbai – Bangalore Economic Corridor	1. Karnataka 2. Maharashtra	Developers: Government of India, Indian State Governments, Government of UK.
Amritsar – Delhi – Kolkata Industrial Corridor	1. Punjab 2. Haryana 3. Uttar Pradesh 4. Uttarakhand 5. Bihar 6. Jharkhand 7. West Bengal	Equity Holdings: Government of India 49%, balance equity by State Governments and Housing and Urban Development Corporation (HUDCO)
Vizag – Chennai Industrial Corridor	1. Tamil Nadu 2. Andhra Pradesh	Developers: Government of India with Asian Development Bank

City Projects

Several new cities have been developed in recent year, some of the prominent examples are

1. Dholera SIR (Gujarat)
2. Gujarat International Finance Tec-City (Gujarat)
3. Palava (Maharashtra)
4. Lavasa (Maharashtra)
5. Gurgaon (Haryana)
6. Smart City Kochi (Kerala)
7. Haldia (West Bengal)
8. Navi Mumbai Airport influence Notified Area (Maharashtra)
9. Wave City (National Capital Region)

Examples of Public driven Urban Development Projects

1. Dholera (SIR)
2. Gujarat International Finance Tec-City (GIFT)

Examples of Privately driven Urban Development Projects

1. Lavasa
2. Palava

Country-Specific tie-ups for Urban planning and Development

1. Memorandum of Understanding (MoU) was signed between India and Japan to convert Varanasi into Smart City with the help of the city of Kyoto.
2. The USA has expressed interest in turning 3 cities into smart cities – Allahabad, Ajmer, and Visakhapatnam.
3. India and China have also signed 3 Gujarat specific pacts.[11,12]

Discussion

Technology in Urban Planning and Development

Role of ISRO in Urban Development in India

Planning Urban development of cities faces a perennial challenge i.e rate of population increase, urban sprawl, etc. Hence the policymakers have to plan the city accordingly. This planning requires updated data. This updated data is provided by ISRO using high-resolution satellite data. The data provided by this tool helps the planners in managing and planning a broad expansion of the urban environment. The fundamental data required by urban planners and policymakers is accurate information on current land-

use practices in a city or town, satellite-based remote sensing has certain advantages in monitoring the dynamics of urban land use because of large spatial coverage for mapping applications, more frequent revisit periods, and wide availability.

Use of Unmanned Aerial Vehicles in Urban Development

UAV technology is being used to improve things like

1. Energy efficiency
2. Monitor progress of the project
3. Sewage design
4. Utility establishment
5. Detect illegal constructions
6. Detect encroachments

The need for data-driven decision making is very important to meet the growing challenges of urban planning.

The below states have already conducted trials on UAV for Urban planning, management, and change detection for revenue collection from industrial and residential areas.

1. Maharashtra
2. Gujarat
3. Andhra Pradesh
4. Odisha

Results of UAV trials

1. 30% improvement in illegal construction detection
2. 20% increase in revenue collection

How is the Geographical Information System (GIS) helpful in Urban Planning in India?

In the developed world, the city administration is increasingly using Geographical Information Systems (GIS) for Urban planning and development.

For any planning, data is the most important part and GIS helps in storing, managing, analyzing, manipulating data. GIS helps in the display of spatially linked data thereby resulting in the creation of smart maps.[13,14]

Main Challenges in Urban Planning and Development

The HPEC (High Powered Expert Committee), the World Bank, and the Confederation of Indian Industry (CII) have provided analysis on the challenges affecting urban development in India.

1. Planning for land use and zoning
2. The functioning of the property market and property governance
3. Access to serviced land and affordable housing
4. Access to mass transit systems and road networks
5. Creating a favorable environment for starting, operating, and growing a business.

As per the World Bank, the following reasons gave rise to the above challenges

1. Empowerment Deficit: Limited, overlapping, and fragmented functional assignments resulting in unclear accountability at the city level.
2. Resource Deficit: Limited revenue-generation powers and inappropriately targeted intergovernmental transfers resulting in inadequate local government financial resources.
3. Accountability Deficit: Despite elections and the right to information, transparency structures, roles, and mandates are unclear.
4. Delivery Deficit: Insufficient provision and maintenance of municipal services and networks.[15,16]

Recommendations for Urban Planning in India

1. Integrate Spatial Planning at all Government levels: National, State, and City
2. Create a stable policy framework for private investment in urban infrastructure.
3. Create institutions to stimulate capacity building and attract talent to grow businesses.

Urban Planning is a process. It involves the design and development of land used constructively to the built environment. This involves technical and political decisions pertaining to air, water and infrastructure. It requires detailed planning of architecture, structural designing, and civil engineering to create solutions for the communities. We need to reflect upon it.

Specific Points :

- Exploration: This includes considering and exploring several aspects of the environment to build communities that have access to the communication network, transportation in a methodical way that social environment remains protected.
- Solving Problems: Organized, practical, balanced, modern, and stylish approach in solving town planning related problems are possible through

innovative ideas and their implementation at the design level.

- Expansion: This domain of urban planning includes economic development based on the infrastructure and other natural resources planning for support of the community. It is a tie-up of social and environmental planning.
- Human Experience: The interaction of people has an interlocking effect on the availability of resources and easy connectivity. It enhances the experience of people and intensifies community connection.
- Vitalizing the Town: Passage of time is a factor for change in the requirement of land, water, energy, transportation and this leads to redesigning the town to match the standard of living the citizens expect, repairing, and renovating the urban areas to adapt to the modern technology.[17,18]

1990's was the decade when economic liberalisation began and India charted a new course of development economics. It also witnessed the emergence of two major trends – information technology that started connecting cultures and people and improved mobility of capital across geographic boundaries. Indian cities started driving socio-economic change and put themselves firmly on the global map. Today, our cities are the focus of global commercial activity and interest. They not only contribute substantially to the Indian economy but also attract investments. They have become hubs for education, job creation, innovation, arts and culture.

Results

While it took 40 years for Urban India to reach 230 million, it will take only half this time to grow the next 250 million. The McKinsey Global Institute has termed this “India’s urban awakening”, which presents a massive challenge for urban planning. In their prediction, they will generate 70% of net new jobs by 2030. They will also produce more than 70% of GDP, and stimulate a four-fold increase in per capita incomes across the nation.[19,20]

In 2011, about 377 million persons (31.4%) lived in nearly 8000 towns and cities; about half of which were without Urban Local Bodies (ULBs). About one-third of the population living in towns and cities were first generation urban dwellers. As in China, where the average income in the cities was \$1,000 a year against the rural yearly income of \$300, India too faces a demand and supply gap. This is not only for homes, but also water, sanitation, transport and communication services. This is in addition to access to facilities such as banking, shopping and more,

which have continued to grow over the decades. Such gaps appear to be directly proportional to population size of cities. This gap between the urban and the rural has naturally led to mass immigration from the rural to the urban spaces. This resulted in various problems: the biggest being whether these urban spaces were equipped to accept so many new residents.

The Challenge

Urban planning on this front has been inadequate. Approximately only 25% or 2,000 of these towns and cities had Master Plans or Development Plans. These are land-use centric plans approved by the respective State legislatures, to be achieved over a period of 20 to 25 years. The first problem was that these Master Plans were poorly implemented due to fund scarcity. Secondly, detailed action strategies that evolved out of Master Plans were unavailable. The question is: will this remain a chronic problem, or will India rise to the challenge of more strategic urban planning? In the newly urbanized India of 2050 and beyond, the tax base for the national economy may grow significantly. This phenomenal GDP growth will in turn provide funds for improved urban planning. By 2050, India is expected to graduate to an urban nation with approximately 900 million persons (or nearly 56% of India's population). This will bring India closer to 'developed' nations, where the distribution of population between urban and rural settlements have tended to stabilize at about 70% or more. The proportion of the first generation urban dwellers in 2050 could be similar to the 2011 scenario.[21,22]

The History of Urban Planning in India

Looking back at history, Municipalities in India were only established in the early 19th century during colonial rule. The role of Municipalities in India has remained stable, frequently at the cost of quality of life of the citizens. During post independence era, significant official urban planning initiatives to undertake planned development of towns and cities include:

- Enactment of the Delhi Development Act 1957 leading to establishment of the Delhi Development Authority, followed by establishment of about 300 development authorities for as many cities.
- Launching of the national scheme such as IDSMT in the Sixth FYP (1980-85), intended to address critical development needs of small and medium towns.
- Publication of India's first urbanisation policy in 1988 by the National Commission on Urbanisation (NCU) chaired by Charles Correa.

This document was the first to point out the inevitable leading role of cities in driving forward India's economy and the necessity of integrating spatial and economic development of its urban centres.

- Enactment of the 73rd and 74th Constitutional Amendments in 1992 known as Panchayati Raj Act and Nagarpalika Act. These empowered elected representatives of Districts or ULB to undertake economic and spatial planned development of villages, towns and cities. But since land is a state subject, only some states adopted the acts, resulting in slowdowns on the implementation side.
- The 2005-JNNURM launched by the Government of India was the first initiative of its kind in terms of the scale of investment of USD 20 billion over a period of seven years. 65 cities were selected under this initiative.
- In June 2015, the Government of India initiated the 'Smart City Mission'. Its objective was to improve the conditions of 100 cities within five years with an approved investment of USD 15 billion. The Smart City Mission idea appears to be the most comprehensive in nature and serious in terms of intention.

The Apathetic Urban Indian

Three situations reflecting the state of mind and apathy of an average Indian who lives in a city:

1. Jatin Das' conclusion about contemporary Indian society, that "no one cares" based on the fate of his painting Flying Apsara, commissioned by Air India in 1991.
2. Axis Bank ATM experience. One bank worker sat on the floor inside the ATM cubicle and was having his lunch, laid around him. Another was readying the ATM for users waiting outside, floor strewn with bits of print outs. The queue of customers slowly grew. Minutes later, the second worker finished his job and joined his colleague sitting on the floor for lunch. Customers kept waiting till a third bank worker came and found the ATM ready for use but customers were unaware. She then ushered the waiting customer in.
3. On a busy city road, a helmetless motorcyclist met with an accident. Other citizens travelling on the same route steered and passed by him, laying helplessly.
4. The government of India is vigorously promoting the use of toilets as part of its Swachh Bharat

(Clean India) programme. In a recently telecast documentary, the BBC interviewed a few villagers of North India (intended users of toilets). These villagers pointed out the advantages of open defecation, such as the need of a lota (can) rather than a bucketfull.[23]

Effective Urban Planning must include Citizen Participation

The task of building a 'world class' urban India in a sustainable and planned manner is a tall order. This calls for a gigantic urban planning effort by the government which includes effective participation of its citizens. The government effort must consist of resource mobilization, revising the provisions of the enabling tools and providing opportunities to citizens. This will enhance their ability to utilize the relevant learning opportunities so their role may be part of the proposed 'inclusive' strategy of the mission.

The benchmarks of the Smart City Mission must be sensitive to regional/local contexts given the country's size and diversity. There is need to develop, carefully plan and visualize implementation and post implementation sustenance. Stable, complimentary roles need to be played by all stakeholders to complete this mission successfully.

Computerization is Crucial, but the Government Shouldn't Forget Apathetic Citizens

The Smart City Mission has launched many urban planning projects in selected cities. These focus on rapidly replacing operating and maintenance systems of the cities' services and amenities: from manual/semi-computerized to fully/predominantly computerized.

The Mission hardly recognizes the urgent need to drastically transform the attitude of the citizens from apathy to action alongside rural to urban. Therefore a huge scope remains to address this urban planning issue across all sizes/types of human settlements in India. Only through such initiatives can we therefore expect a smooth urbanization and the Smart City Mission to be successful.[23]

Conclusions

Smart cities are cities that work.

Most importantly, work for whom? And, what do we mean by cities that work? Cities are confluences of people; places where people live, come to meet, exchange ideas, earn livelihoods, access education, health and other services and enjoy a life of good quality. People are at the core of the city. Therefore, cities should work for their people. Cities that work for their people will continuously become better versions of themselves with each passing day. To answer this question, we need to understand the

reasons which make a city attractive to people in the first place. These reasons would be, to a large extent, different for different cities and different for different sets of people and therefore cannot be generalized. Some cities attract people for the opportunities that exist therein as markets and centers for manufacturing, some others due to the greatness of their cultures, or their cosmopolitan vibes, and others for their ability to provide better education and health facilities or a combination of factors and so on.

There are, largely, two kinds of factors, which attract people into cities - 'push factors', led by distress or scarcity in their place of origin – like droughts, violence, social rifts etc. and 'pull factors', like better opportunities for education, business and industry, leisure, art and culture etc.

Decoding the specific reasons for which people choose a certain city over others is at the core of understanding any city's DNA – the foundational building blocks that drive the city. The aspirations of a city's inhabitants evolve with time and hence these reasons have to be studied in the relevant contexts. In order to understand these reasons, smart city practitioners need to ask some crucial questions, for example – which are the different communities that constitute the city, what are their current needs, how have their needs evolved, what are their hopes and aspirations, what attracts outsiders to the city etc.[22,23]

A city can be said to work for its people only if it supports them in their chosen pursuits. If one is a migrant, coming into the city for two years in connection to my job, his or her needs would hover around access to decent rental housing, efficient modes of public transport, recreational places and so on. However, if one is a student, his or her needs could be about availability of good educational institutions, safe cycling and walking infrastructure. This is different from the needs of an elderly citizen who may prioritize access to good quality healthcare above other things.

Clearly, not all people or sets of people desire the same things. In order to simplify the understanding of the diversity of needs expressed by a city's diverse residents, it is useful to classify them under three broad pillars – liveability, economic-ability and sustainability. Imagine these as three folders on your computer that have multiple files of different types, dealing with different aspects.

These, thus, constitute the three broad outcomes that a city needs to target in order to work for its people. In other words, to answer the question 'what is a smart city' in another way; it is a city, which is liveable,

sustainable and has a thriving economy offering multiple opportunities to its people to pursue their diverse interests.

The implementation of the Mission at the City level will be done by a **Special Purpose Vehicle (SPV)** created for the purpose. The SPV will plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects. Each Smart City will have a SPV which will be headed by a full time CEO and have nominees of Central Government, State Government and ULB on its Board. The States/ULBs shall ensure that, (a) a dedicated and substantial revenue stream is made available to the SPV so as to make it self sustainable and could evolve its own credit worthiness for raising additional resources from the market and (b) Government contribution for Smart City is used only to create infrastructure that has public benefit outcomes. The execution of projects may be done through joint ventures, subsidiaries, public-private partnership (PPP), turnkey contracts, etc. suitably dovetailed with revenue streams. The SPV will be a limited company incorporated under the Companies Act, 2013 at the city-level, in which the State/UT and the ULB will be the promoters having 50:50 equity shareholding. The private sector or financial institutions could be considered for taking equity stake in the SPV, provided the shareholding pattern of 50:50 of the State/UT and the ULB is maintained and the State/UT and the ULB together have majority shareholding and control of the SPV. [21,22]

Funds provided by the Government of India in the Smart Cities Mission to the SPV will be in the form of tied grant and kept in a separate Grant Fund. These funds will be utilized only for the purposes for which the grants have been given and subject to the conditions laid down by the MoUD. The State Government and the ULB will determine the paid up capital requirements of the SPV commensurate with the size of the project, commercial financing required and the financing modalities. To enable the building up of the equity base of the SPV and to enable ULBs to contribute their share of the equity capital, GoI grants will be permitted to be utilized as ULBs share of equity capital in the SPV, subject to the conditions given in Annexure 5. Initially, to ensure a minimum capital base for the SPV, the paid up capital of the SPV should be such that the ULB's share is at least equal to Rs.100 crore with an option to increase it to the full amount of the first instalment of Funds provided by GoI (Rs.194 crore). With a matching equity contribution by State/ULB, the initial paid up capital of the SPV will thus be Rs. 200 crore (Rs. 100 crore of GoI contribution and Rs. 100 crore of

State/UT share). Since the initial GoI contribution is Rs.194 crore, along with the matching contribution of the State Government, the initial paid up capital can go up to Rs.384 crore at the option of the SPV. The paid up capital may be enhanced in the subsequent years as per project requirements, with the provision mentioned above ensuring that ULB is enabled to match its shareholding in the SPV with that of the State/UT.

The structure and functions of the SPV are given in Annexure 5 and the Articles of Association will contain such provisions. A model Article of Association is given in the Toolkit. After selection of the cities in Stage II of the Challenge, the process of implementation will start with the setting up of the SPV. As already stated, it is proposed to give complete flexibility to the SPV to implement and manage the Smart City project and the State/ULB will undertake measures as detailed in Annexure 5 for this purpose. The SPV may appoint Project Management Consultants (PMC) for designing, developing, managing and implementing area-based projects. SPVs may take assistance from any of the empanelled consulting firms in the list prepared by MoUD and the handholding agencies. For procurement of goods and services, transparent and fair procedures as prescribed under the State/ULB financial rules may be followed. Model frameworks as developed by MoUD may also be used for Smart City projects.

The Smart City Mission will be operated as a Centrally Sponsored Scheme (CSS) and the Central Government proposes to give financial support to the Mission to the extent of Rs. 48,000 crores over five years i.e. on an average Rs. 100 crore per city per year. An equal amount, on a matching basis, will have to be contributed by the State/ULB; therefore, nearly Rupees one lakh crore of Government/ULB funds will be available for Smart Cities development. The project cost of each Smart City proposal will vary depending upon the level of ambition, model and capacity to execute and repay. It is anticipated that substantial funds will be required to implement the Smart City proposal and towards this end, Government grants of both the Centre and State will be leveraged to attract funding from internal and external sources. The success of this endeavour will depend upon the robustness of SPV's revenue model and comfort provided to lenders and investors. A number of State Governments have successfully set up financial intermediaries (such as Tamil Nadu, Gujarat, Orissa, Punjab, Maharashtra, Karnataka, Madhya Pradesh and Bihar) which can be tapped for support and other States may consider some similar set up in their respective States. Some form of

guarantee by the State or such a financial intermediary could also be considered as an instrument of comfort referred to above. It is expected that a number of schemes in the Smart City will be taken up on PPP basis and the SPVs have to accomplish this. [20,21]

The GOI funds and the matching contribution by the States/ULB will meet only a part of the project cost. Balance funds are expected to be mobilized from:

States/ ULBs own resources from collection of user fees, beneficiary charges and impact fees, land monetization, debt, loans, etc.

1. Additional resources transferred due to acceptance of the recommendations of the Fourteenth Finance Commission (FFC).
2. Innovative finance mechanisms such as municipal bonds with credit rating of ULBs, Pooled Finance Mechanism, Tax Increment Financing (TIF).
3. Other Central Government schemes like Swachh Bharat Mission, AMRUT, National Heritage City Development and Augmentation Yojana (HRIDAY).
4. Leverage borrowings from financial institutions, including bilateral and multilateral institutions, both domestic and external sources.
5. States/UTs may also access the National Investment and Infrastructure Fund (NIIF), which was announced by the Finance Minister in his 2015 Budget Speech, and is likely to be set up this year.
6. Private sector through PPPs.

The distribution of funds under the Scheme will be as follows:

- 93% project funds.
- 5% Administrative and Office Expenses (A&OE) funds for state/ULB (towards preparation of SCPs and for PMCs, Pilot studies connected to area-based developments and deployment and generation of Smart Solutions, capacity building as approved in the Challenge and online services).
- 2% A&OE funds for MoUD (Mission Directorate and connected activities/structures, Research, Pilot studies, Capacity Building, and concurrent evaluation).[23]

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