

## Annexure - 2

## Chennai Smart City: Self Assessment

A	B	C	D	E	F	G	H	I	J	K
	Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment for the full city with regard to each feature	Basis for assessment and/or quantitative indicator (Optional - only if data exists)	Projection of 'where the city wants to be' with regard to the feature/indicator based on the city vision and strategic blueprint	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
1	<b>Citizen participation</b>	<b>A smart city constantly shapes and changes course of its strategies incorporating views of its citizen to bring maximum benefit for all. (Guideline 3.1.6)</b>	The City begins identifies priorities and projects to pursue without consulting citizens.	City undertakes citizen participation with some select stakeholders. The findings are compiled and incorporated in some projects or programs. Very few major decisions are shared with -citizens until final projects are unveiled.	City conducts citizen engagement at city level and local area level with most stakeholders and in most areas. The findings are compiled and incorporated in projects or programs.	City constantly conducts citizen engagement with people at each Ward level to incorporate their views, and these shape priorities and development projects in the city. Multiple means of communication and getting feedback such, both face-to-face and online are utilised. The effectiveness of city governance and service delivery is constantly enhanced on the basis of feedback from citizens.	Scenario 3	1. Ward level Interactions 2. Online Engagement 3. Number of Stake holder Consultation 4. Seminars and Workshops	Scenario 4 Importance of total citizen participation is evident from the number of <b>consultative meetings (15 nos)</b> organised for the Smart City Proposal preparation. This approach of Smart City will be followed for all other development activities in the city.	1. Constant interaction with the citizens 2. Multiple interactions to discuss - decide and disseminate
2	<b>Identity and culture</b>	<b>A Smart City has a unique identity, which distinguishes it from all other cities, based on some key aspect: its location or climate; its leading industry, its cultural heritage, its local culture or cuisine, or other factors. This identity allows an easy answer to the question "why in this city and not somewhere else?" A Smart City celebrates and promotes its unique identity and culture. (Guideline 3.1.7)</b>	There are few architectural monuments, symbols, and festivals that emphasise the unique character of the city. Built, natural and cultural heritage is not preserved and utilised or enhanced through physical, management and policy structures.	Historic and cultural resources are preserved and utilised to some extent but limited resources exist to manage and maintain the immediate surroundings of the heritage monuments. New buildings and areas are created without much thought to how they reflect the identity and culture of the city.	Historic and cultural heritage resources are preserved and utilised and their surroundings are well-maintained. Public spaces, public buildings and amenities reflect the cultural identity of the city:-	Built, natural and intangible heritage are preserved and utilised as anchors of the city. Historical and cultural resources are enhanced through various mediums of expression. Public spaces, open spaces, amenities and public buildings reflect local identity and are widely used by the public through festivals, events and activities.	Scenario 4	Rich cultural and heritage value of the city dates more than 376 years with: 1. Numerous of historic and heritage places 2. Number of public buildings and locations 3. Entertainment places	Scenario 4 1 The Built, natural and intangible heritage will be preserved and utilized as anchors of the city. 2 Public spaces, open spaces, amenities and public buildings will reflect local identity and will be widely used by the public through festivals, events and activities. 3.Chennai wants to be first city in India to implement a Citywide <b>"Non-Motorized Transport Policy"</b> to making Chennai the most pedestrian and bicycle friendly tier 1 city in India.	1. T Nagar is the chosen for Area Based Development which is rich on shopping culture and famous for the mixed use development. For the Area Based Development an Urban Redevelopment Strategy shall be used, to maximize the cultural, historical and architectural importance of region's value. The successful implementation of the Area Based Urban Design and Redevelopment Strategy, can be rolled out at others areas of Chennai. 2. The Area Based Development will contain large scale pedestrianization, traffic calming, bicycle lane network and bikesharing scheme. Based on the successful implementation of the Area Based Non-Motorized Transport Policy, this can be rolled out at Pan City level.
3	<b>Economy and employment</b>	<b>A smart city has a robust and resilient economic base and growth strategy that creates large-scale employment and increases opportunities for the majority of its citizens. (Guideline 2.6 &amp; 3.1.7 &amp; 6.2)</b>	There are some job opportunities in the city but they do not reach all sections of the population. There are a high number of jobs in the informal sector without sufficient facilities.	There is a range of job opportunities in the city for many sections of the population. The city attempts to integrate informal economic activities with formal parts of the city and its economy.	There are adequate job opportunities for all sections of society. But skill availability among residents can sometimes be a challenge.	There are adequate opportunities for jobs for all sections of income groups and skill levels. Job-oriented skill training supported by the city and by industry. Economic activities are suited to and build on locational and other advantages of the city.	Scenario 4	One of the very few cities of the world with diversified economy. Employment opportunity from IT Sector, Manufacturing and automobile Industries, Health Care, etc. Major employment and business hub in South India	Scenario 4 Improve the business and employment opportunity. To go to place for work amongst young job seekers. <b>Chennai - The Safest City in India</b> should increase the job immigrants from other PAN india and abroad.	To promote incentives for start up companies. Involve the established organisation (IT Companies, Manufacturing Industries, etc) in promotion of NMT policy and there by ascertain Chennai as the first city to successfully implement the same. Retrofitting of T Nagar will reinforce Chennai citizens the fact that this is the best place to live, work, shop, dine, entertain, etc.
4	<b>Education</b>	<b>A Smart City offers schooling and educational opportunities for all children in the city (Guideline 2.5.10)</b>	The city provides very limited educational facilities for its residents. There are some schools but very limited compared to the demand. Many schools are in poor condition.	City provides adequate primary education facilities within easily reachable distance of 15 minutes walking for most residential areas of the city. The city also provides some secondary education facilities.	City provides adequate primary and secondary education facilities within easily reachable distance for most residential areas of the city. Education facilities are regularly assessed through - databases of schools including number of students, attendance, teacher - student ratio, facilities available and other factors.	City provides adequate and high-quality education facilities within easily reachable distance of 10 minutes walking for all the residential areas of the city and provides multiple options of connecting with specialised teaching and multi media enabled education. Education facilities are regularly assessed through database of schools including number of students, attendance, teacher-student ratio, facilities available and other factors.	Scenario 4	There is no dearth of <b>good quality educational institutes</b> in the city of Chennai which has some of the best schools, engineering colleges, medical colleges as well as arts & science colleges in India, not to mention very good universities. Students from not just Chennai but from the rest of Tamil Nadu and India flock to the higher-ed institutes in the capital city of TN.	Scenario 4 1) 100% literacy 2) 0% drop out 3) Quality Education for all 4) Skill Achievement	1) Activity based learning 2) Periodic monitoring and maintenance of schools by Corporation with dedicated team of experts 3) Corporation can tie up with IT Service provider to manage the functioning of schools as well as to monitor performance of students
5	<b>Health</b>	<b>A Smart City provides access to healthcare for all its citizens. (Guideline 2.5.10)</b>	Healthcare is difficult for citizens to access - demand for healthcare often exceeds hospitals' ability to meet citizen needs.	The city provides some access to healthcare for its residents but healthcare facilities are overburdened and far from many residents. Access to preventive health care is only easily available for some residents.	City provides adequate health facilities within easily reachable distance for all the residential areas and job centers of the city. It has an emergency response system that connects with ambulance services.	City provides adequate health facilities at easily accessible distance and individual health monitoring systems for elderly and vulnerable citizens which are directly connected to hospitals to prevent emergency health risks and to acquire specialised health advice with maximum convenience. The city is able to foresee likely potential diseases and develop response systems and preventive care.	Scenario 4	Hailed as <b>India's Health Capital</b> . Chennai attracts about 45 percent of health tourists from abroad arriving in the country and 30 to 40 percent of domestic health tourists. Multi- and super-specialty hospitals across the city bring in an estimated 150 international patients every day due to low cost and facilities offered in the city.	Scenario 4 1. Maintenance of Health Institutions 2. Maintenance of medical facilities such as hospitals, primary health centers 3. Outreach programmes	Promoting active lifestyle by transforming image of walking and cycling, making it a popular means of travel for the middle and upper classes. This can be done by redesigning streets to promote walking & cycling, creating a high-quality cycle sharing system to improve image of cycling as well as to encourage use of cycle for short trips, communicating with the public on the benefits of walking and cycling through various campaigns like <b>car-free days</b> .

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6	<b>Mixed use</b>	<b>A Smart City has different kinds of land uses in the same places; such as offices, housing, and shops, clustered together. (Guidelines 3.1.2 and 3.1.2)</b>	The city has mostly separated uses and areas are focused either on residential, commercial, or industrial, with little co-existence of uses. The average resident cannot walk to the closest market or shops near his or her home. For almost everyone, going to work or going shopping for basic needs requires a journey by automobile or bus of more than 15 minutes. Land use regulations prevent putting commercial or office locations in residential neighborhoods and vice versa.	In some parts of the city, there is a mixture of land uses that would allow someone to live, work, and shop in close proximity. However, in most areas, there are only small retail stores with basic supplies near housing. Most residents must drive or use public transportation to access a shop for food and basic daily needs. Land use rules support segregating housing, retail, and office uses, but exceptions are made when requested.	Most parts of the city have housing, retail, and office buildings in close proximity. Some neighborhoods have light industrial uses within them (e.g., auto repair, craft production). Land use rules allow for mixed uses.	Every part of the city has a mix of uses. Everyone lives within a 15-minute trip of office buildings, markets and shops, and even some industrial uses. Land use rules require or encourage developers to incorporate a mixture of uses in their projects.	Scenario 3	Most of the <b>locations with in the city are mixed use</b> where residential and support activity of commercial or retail is interspersed. Chennai growth pattern and land use zoning	Chennai wants to adopt a Transit Oriented Development, with high density mixed use areas (of commercial and offices, retail) around nodes of public transportation, within easy reach of all residential areas.	By choosing the compact, mixed use area of T Nagar, which is served by multiple modes of public transportation (metro, train and bus station, smart bus feeders) as the Area Based Smart City Development, Chennai Corporation will have a the opportunity to create the <b>City's first International Standard Transit Oriented Development</b> . This pilot project for Compact Mixed Use development, can be replicated in other nodes of public transportation around the City.  Apply appropriate built environment regulations to ensure that the pedestrian realm is active and vibrant in all of its own buildings and properties, as well as urge their adoption by concerned agencies (e.g. CMDA, MTC, and CMRL) and inclusion in documents such as the Chennai Master Plan, Detailed Development Plans, and Development Control Regulations.  Adopt Vendors Policy to support street life. Identify locations where there is existing and potential demand for goods and services of street vendors, accommodate street vendors in on-street locations at mass rapid transit stations, railway stations, market areas, commercial centres, and other key destinations. Regulate street vending in locations that ensure the continuity of footpaths and cycle tracks and provide supportive infrastructure such as cooperatively managed water taps, electricity points, waste bins, and public toilets.
7	<b>Compact</b>	<b>A Smart City encourages development to be compact and dense, where buildings are located close to one another and are ideally within a 10-minute walk of public transportation, forming concentrated neighborhoods. (Guidelines 2.3 and 5.2)</b>	The city is expanding rapidly at its periphery into undeveloped land, rural or natural areas, or along industrial corridors - both formally and informally. Formal new development is occurring in a way that is "sprawling," meaning that the buildings spread across a wide area and are far from one another. Residents or tenants find it easier or safer to travel by automobile because it takes a long time to walk between destinations and there are busy roads separating buildings. Large pockets of land in the inner-city are vacant. New developments at the periphery tend to be large-scale residential developments, often enclosed with a gate and oriented to the automobile.	The city has one or two high density areas - such as the city center, or historic areas, where buildings are concentrated together and where people can walk easily from building to building and feel as though they are in center of activity. Most of the city consists of areas where buildings are spread out and difficult to walk between, sometimes with low-density per hectare. Regulations tend to favor buildings that are separated from one another, with lots of parking at the base and set-back from the streets. The city likely has some pockets of under-utilized land in the center. New formal developments at the periphery tend to be large-scale residential developments, often enclosed with a gate and oriented to the automobile.	The city has multiple high density clusters that are easy to walk around where buildings are close together. However, the city actively encourages development to occur on under-utilized parcels of land into high-density, walkable areas. When new formal large-scale development projects happen at the periphery, they are encouraged to be dense and compact, with buildings that are close together and line the streets. The city actively encourages or incentivizes re-development of under-utilized parcels in the inner-city, especially those located close to public transportation.	The city is highly compact and dense, making the most of land within the city. Buildings are clustered together, forming walkable and inviting activity centers and neighborhoods. Regulations encourage or incentivize re-development of under-utilized land parcels in the city center. Buildings are oriented to the street — and parking is kept to a minimum, located below ground or at the back of buildings. Public transport and walking connects residences to most jobs and amenities. Residential density is at an optimal with affordable housing available in most areas.	Scenario 2	Quantitative indicator: Rapid Transport Ratio (RTR) today: 1 km rapid transit per lakh population (This involves existing MRTS line, suburban rail corridors with headway of 20 min or less, Metro Ph 1 operational for CMA population)  Persons near Transit (PNT): 15% of population live near rapid transit (Operational Metro + 79 km suburban rail) today.  Additional data: - Chennai is a sprawling city where the City Corporation limits were expanded from 126 sq.km to 426 sq.km in 2012 - Chennai has high population density (498 PPH in corporation limits), but low built density with uniform base FSI of 1.5. Higher FSI is permitted based on road width, not transit-access. - Development regulations require minimum setbacks (high rise buildings require larger setbacks). - Development regulations mandate parking minimums.	Scenario 4 Chennai wants to <b>adopt a Transit Oriented Development</b> , with high density mixed use areas (of commercial and offices, retail) around nodes of public transportation, within easy reach of all residential areas.  Metric: Rapid Transit Ratio (RTR) desired today: 2 km rapid transit per lakh population.  Persons near Transit (PNT) desired today: At least 60% of metropolitan population lives within 500 m of a rapid transit station.	Especially low density, underutilized /vacant land and buildings around nodes of public transportation will have priority to be (re)developed.  Retrofitting the public space in commercial areas, with an emphasis on pedestrian/cycle friendly space, in combination with high quality public transportation and feeder network, will allow for a much higher building densities, since the vehicular traffic load on the public space will be significantly reduced  Create and implement framework for improving last mile connectivity to rapid transit through NMT improvements, provision of feeder services and improving transit infrastructure (bus stops, signages etc.)  Improve delivery of urban services in existing transit-accessible urban areas to promote redevelopment.  Work with other agencies in the city to encourage redevelopment of under-utilised parcels through appropriate modifications to Chennai Master Plan, Detailed Development Plans, and Development Control Regulations.

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8	<b>Public open spaces</b>	<b>A Smart City has sufficient and usable public open spaces, many of which are green, that promote exercise and outdoor recreation for all age groups. Public open spaces of a range of sizes are dispersed throughout the City so all citizens can have access. (Guidelines 3.1.4 &amp; 6.2)</b>	The city has very few usable public open spaces and very few usable green spaces. Available recreational spaces are located far away and are dispersed at long distances around the city. The few available public open spaces offer a limited variety of experiences for all sections of population and age groups such as places for sport, places for rest, and places for play.	A variety of public open spaces are available in some neighborhoods, but are not available in all the areas of the city or are located far away from residential areas -Many of the open spaces have access restrictions, or are not well-maintained. A variety of types of public open spaces may be lacking, such as natural areas, green areas, parks, plazas, or recreation areas.	Most areas of the city have some sort of public open space. There is some variety in the types of public spaces in the city. However, public spaces are sometimes not within easy reach or access of more vulnerable populations and are more restricted in poorer neighbourhoods.	Public open spaces are well dispersed throughout the city. Every residential area and work space has access to open space within 10 minutes walking distance. Open spaces are of various types - natural, green, plazas, parks, or recreation areas - which serve various sections of people. Public spaces tend to truly reflect the natural and cultural identity of the city.	Scenario 2	Quantitative indicator: Per capita open space in Chennai is 0.41 sqm per person as compared to WHO standards of 9 sqm (CMDA densification study)  Basis for assessment: Along rapid transit-corridors currently under construction, share of parks is only 1% along Metro Corridor I and 2% in Metro Corridor II. (CMDA densification study)	Scenario 4 Chennai has <b>several large green gardens and parks, public spaces with great opportunities to be retrofitted and reused as world class leisure destinations</b> for all citizens and tourists alike.	Reinventing several gardens/parks/Open Spaces as attractive Public Spaces, by making them into 'recreational destinations' with a cultural dimension/theme, operated under the Smart City SPV can help to bring in new revenue to be invested in redesign/ maintenance/operations of these parks. By having NGO's, Museums or other Cultural/Educational Institutes participating under the umbrella of the SPV a 'theme/special events calender' could be added to make these spaces real destinations, e.g events related to Heritage protection, Art, Dance, Music, Theater, Yoga, Environment etc.  Develop streets as public spaces by reclaiming space from motor vehicles. This can be in the form of permanent interventions like construction of pedestrian plazas or temporary interventions like car-free days. Develop streets abutting natural features like rivers & lakes as 'greenways' incorporating appropriate environmental planning and water management techniques. Repurpose excess street space not used for transportation as landscaped areas.
9	<b>Housing and inclusiveness</b>	<b>A Smart City has sufficient housing for all income groups and promotes integration among social groups. (Guidelines 3.1.2)</b>	Housing is very limited and highly segregated across income levels. Population growth far exceeds the creation of new housing. The poor live in informal settlements with limited to no access to basic services, and are concentrated in a few areas. The wealthy live in separate enclaves. Those in the middle have few , if any options.	Housing is available at most income levels but is highly segregated across income levels. Population growth slightly exceeds the creation of new housing. The wealthy and the middle class have housing that meets their needs at costs appropriate to their income. The poor live in informal settlements.	Housing is available at all income levels, but is segregated across income levels. The growth of supply of housing almost meets the rate of population growth. Increasingly, lower and middle-income people can find housing in areas that are conveniently located.	A wide range of a housing is available at all cost levels. The supply of housing is growing at pace with population. Affordable, moderate, and luxury housing are found clustered together in many areas of the city	Scenario 2	The number of Katcha housing has come down by 7% between 2001 and 2011. <b>Chennai is ranked number one of the district in Tamil Nadu</b> 1) about 77% of the housing roofs are made by concrete 2) 97% of the houses have bath,drainage facility. No of Homeless decreased. Tamil Nadu Housing Board has projects worth 18,796 units. TNSCB with 81,581 units and under housing for all scheme 249,971 units.	Scenario 4  1. Affordable, moderate and luxury housing clusters to be developed in the city 2. Housing for Economically Weaker Section to be fulfilled 3. Adequate infrastructure facilities to be provided for the upcoming housing projects 4. 100% efficiency in terms of Property tax collection to be achieved	1. Introduction of more number of affordable housing projects in the city 2. City's Real Estate Potential to be increased with introduction of more number of investments in the city 3. Facilitate plan approvals and property tax collection with efficient utilisation of e-Gov platform
10	<b>Transport</b>	<b>A Smart City does not require an automobile to get around; distances are short, buildings are accessible from the sidewalk, and transit options are plentiful and attractive to people of all income levels. (Guidelines 3.1.5 &amp; 6.2)</b>	Personal automobile centric city with very few modal options. Long trip lengths for daily commute to work and education. Accessing various areas by walking or cycling is difficult. Women and vulnerable sections find it very difficult to move independently in the city. There is limited public transport. Vehicles cause high air and noise pollution levels in the city. Vehicles dominate public spaces and affect their effective functioning.	The street network system is elaborate but public transport choices are restricted. Public transport can be too expensive or unaffordable for the poor. Pedestrian infrastructure is only available in select areas. The majority of investments focus on reducing traffic congestion through the creation of more roads.	Network of streets are fairly complete. Public transport covers most areas of the city. However last mile connectivity remains incomplete -and affects transport options: Foot paths are accessible in most areas, whereas-concerns of safe crossings and security throughout the day remain. Parking zones are demarcated but absence of pricing increases over utilization of parking lots.	Street network is complete and follows a clear structure. Public transportation network covers the entire city and intensity of connection relates with the demand. Plenty of options of public transport are available and affordable for all sections of the society. There is multi-modal integration at all mass transit stations and organized-priced on street and off street parking. Walking and cycling is prevalent.	Scenario 3	Quantitative indicator: Mode share: NMT (28% walking + 6% cycling), public transport (26% bus, 5% rail), private vehicles (32%), IPT (7%)  City bus availability: 42 buses per 1 lakh population (3798 buses for 89.17 lakh population (CMA 2011))  NMT infrastructure: Footpath improvements have been completed on 26 bus route roads and additional 20 streets under construction with min.clear width 1.8m, no cycle tracks present.  Road safety: 16 deaths per lakh population per year (Source: 4 ppl die on Chennai roads everyday, of which a significant portion are NMT users - Transparent Chennai data for 2010-12. Per lakh figures based on CMA population (2011))	Scenario 4  Metrics: Mode share: NMT to be stabilised at current levels or increases in the future, public transport mode share to increase to 46% of all modes (ie. 70% of motorised modes) (CCTS 2008).  City bus availability: 50 buses per 1 lakh population  <b>NMT infrastructure: 80% of bus-route roads to have footpaths</b> with minimum clear width of 1.8m, RoW >=24m to have cycle tracks.	Reduce dependence on automobiles by shifting users to walking, cycling and public transport through creation of NMT infrastructure. Improve last mile connectivity to rapid-transit by providing alternate means of transportation through cycle-sharing systems, feeder services, bus stop improvements etc.  Restrict private vehicle use by implementing a smart, IT-based on-street parking management system with demand-based pricing.  Increase spending on sustainable transport in the city by setting up a dedicated Urban Transport Fund (UTF) under the Smart City SPV. Fund this UTF through various sources of revenue like revenue from parking management, value capture, and existing revenue sources. Create and adopt appropriate guidelines to utilise this fund to promote sustainable transport projects.

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11	<b>Walkable</b>	<b>A Smart City's roads are designed equally for pedestrians, cyclists and vehicles; and road safety and sidewalks are paramount to street design. Traffic signals are sufficient and traffic rules are enforced. Shops, restaurants, building entrances and trees line the sidewalk to encourage walking and there is ample lighting so the pedestrian feels safe day and night. (Guidelines 3.1.3 &amp; 6.2)</b>	The city is designed mainly for the automobile. Daily life without a car requires long bus rides. Walking is difficult and often dangerous; there are few pavements, existing pavements need repair and lack trees to provide shade for pedestrians, and marked pedestrian crossings are rare. New buildings have their main entrances set-back from the street, sometimes with large driveways or parking lots separating them from the street, and sometimes are enclosed by gates. Traffic signals are often disobeyed	Older areas of the city see a mix of pedestrians, cyclists, and vehicles but newer areas are focused mainly on the automobile. In the new areas, there are few pavements and main entrances to new buildings are not accessible from the front of the street. large driveways or parking lots often separating them from the street, and sometimes are enclosed by gates. In these areas, traffic signals are disobeyed.	The city has a good network of pavements and bike lanes. Buildings in most areas of the city are easily accessible from the pavement. However, traffic signals are sometimes disobeyed and it can feel difficult to cross the street.	The city is highly walkable. Pavements exist on every street and are maintained. Trees line many sidewalks to provide shade for pedestrians. Buildings in most areas of the city are easily accessible from the sidewalk. Traffic signals control the flow of automobiles and are enforced. A network of bike lanes exists to promote cycling as a means of transport. Traffic rules are followed and enforced with great seriousness.	Scenario 3	Quantitative indicator: NMT infrastructure: 5% (18km or 26 nos) of bus-route roads in the city have wide continuous footpaths (Additional 4% or 20 nos is under construction).  <b>Spending on NMT infrastructure by CoC: INR 2.5 crore to INR 3.0 crore per km</b>  Pedestrian & cyclist fatalities: 44 % of road deaths are pedestrians & cyclists (RADMS data, from Traffic Police)  Additional data: Despite investments in 45km Metro network, 34% of the roads along the Metro corridor do not have any footpaths. Only 6% of major roads along Metro have footpaths of desirable width >=2.5 . Only 2% of access roads to metro stations have footpaths of width 2m or more. 19% of road network along metro corridors do not have streetlights . (CMDA densification study)	Scenario 4  Chennai aims to be a highly walkable and bicycle friendly city, with Pavements on every street and trees lining many sidewalks to provide shade for pedestrians and cyclists. Buildings in most areas of the city are easily accessible from the sidewalk. Traffic signals control the flow of automobiles and are enforced. A network of bike lanes exists to promote cycling as a means of transport. Traffic rules are followed and enforced with great seriousness.  Quantitative indicator: <b>80% of all bus-route-roads will have wide continuous footpaths (NMT Policy)</b>  Spending on NMT infrastructure: City will invest 60% of its transport budget to NMT initiatives (NMT Policy)  Pedestrian and cyclist fatalities: 0% (NMT Policy)  Development Plan regulations may specify that that no front setbacks required in plots and shall disallow front compound walls.	The Area Based Development will be having all main street retrofitted with wide sidewalks and bicycle lanes, and pedestrian friendly squares and parks. A comprehensive and integral Urban design and Heritage Protection, Parking and Mobility plan will be adopted, to make the Area Based development a Walkable Area.  Based on the successful implementation of the Area Based Pedestrian Focused Retrofitting, a Pan City NMT Policy (walking and cycling) will be developed.  Build wide continuous footpaths along bus-route roads in the city. Standardize construction of footpaths by adopting and implementing an NMT masterplan for the city, detailing out standard street sections (based on street character, RoW, public transport/ NMT access, vehicular speeds), construction standards and processes, phasing ad implementation of road works. Test this masterplan in the area-level proposal.  Put in place effective institutional structures (a Public Space Management cell) to oversee street design, construction, infrastructure maintenance and operational management of streets. Hire professional urban designers, project management experts etc. to staff this cell.  Improve safety in public spaces by installing LED street lights.  Develop relevant urban design guidelines that contribute to creation of vibrant streets. Work with other agencies in the city to adopt these guidelines in the Chennai Master Plan, Development Regulations.
12	<b>IT connectivity</b>	<b>A Smart City has a robust internet network allowing high-speed connections to all offices and dwellings as desired. (Guideline 6.2)</b>	City has no major plans to bring increased high speed internet connectivity to the public.	The city has made plans to provide high speed internet connectivity through the existing framework.	The city makes has high speed internet connectivity available in most parts of the city.	The city offers free wifi services to provide opportunity for all the citizens to connect with high speed internet across the city.	Scenario 3 for Pan-city and area based development	• Chennai city has high speed internet access for most of its citizens through public and private service providers • Wi-Fi access in 21 public places • Major part of the area is under Overhead IT cables and some part has covered underground cables	Scenario 4  <b>100% internet connectivity</b> (wired and wireless) to all its citizens  • Wi-Fi access in all public places • All overhead cables to be underground • Improved speed	Readiness of the city: • Has high speed internet access for citizens already • Plans are under way to provide Wi-Fi facilities at public spaces.  Initiative to move the city from current status to advanced status:  1. Installing Wi-Fi zones in all public spaces 2. Improve average down time of internet and telephonic lines 3. Convert all overhead communication lines to underground



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13	<b>ICT-enabled government services</b>	<b>A Smart City enables easy interaction (including through online and telephone services) with its citizens, eliminating delays and frustrations in interactions with government. (Guidelines 2.4.7 &amp; 3.1.6 &amp; 5.1.4 &amp; 6.2)</b>	Essential Government services are not linked with online platforms. Paper intensive interactions with the local Government continues. Receiving services and response to citizen complaints take a long time. There is limited availability of data to monitor service delivery.	Some of the public services are provided online and infrastructure for total digitalization is not in place. Service delays occur regularly in some sectors. Responses to citizen inquiries or complaints are often delayed. No integration between services and billing.	Most of the services are provided online and offline. Data transparency helps monitoring. Systems and processes to better coordinate between various Government agencies are being developed.	All major services are provided through online and offline platforms. Citizens and officials can access information on accounting and monitor status of projects and programs through data available on online system. Robust data infrastructure system shares information and enhances internal governmental coordination.	Scenario 3 for Pan-City and area based	City has most of e-governance services as web based  1. Helpline no 1913 2. Online customer Complaint system 3. Online tax payment 4. Recording of solid waste details on mobile 5. SMS based Public Grievance Redressal System on mobile No: 9789951111  Interaction with municipal authorities  Quantitative indicator: 23 charged on-street parking spaces per lakh population (~2000 parking spaces are currently managed by CoC)	Scenario 4  <b>100% e-governance system</b>  1. Implementation of Disaster management system including Emergency rescue operation plans 2. 24x7 customer care services 3. Integration of smart parking system and Integration of smart bus feeder system operation with the city mobility plan  Improving multi-modal integration by providing seamless connectivity across different transport modes using customer-centric on-street parking & cycle sharing systems.  These systems feature cashless transactions, real-time data available to customers through apps/ websites so that they can plan their trips better.  Metrics: 400 charged on-street parking spaces per 1 lakh population, with IT-based customer-oriented parking management systems. Total parking supply (on-street and off-street) remains at 2015 levels or reduces in the future.  Smart cycle sharing system with 200 cycles per 1 lakh population.	Readiness of the city: Has web & mobile based e-governance system in place.  Initiative to move the city from current status to advanced status:  Smart Chennai 1. All government services in a Single Window System; Web based and mobile apps based utility services, Public grievance redressal system using mobile app and SMS based systems 2. Personalised public services and transparency in public administrations 3. Capacity building process with government officials and citizens 4. GIS mapping of all utilities  Improve public space management by creating a "Streets Portal" - an IT-based, geo-spatial project monitoring system to oversee design, construction and implementation of streets improvement projects.  Create a unified payment portal/ e-wallet for citizens to pay for various public transport services. Such a portal must be linked to on-street parking management system and cycle-sharing system, so that citizens can access real-time data on available parking spaces, maps of the cycle-sharing systems, station locations, applicable rates etc. A citizen complaint redressal system can also be integrated with this app. CoC will work with other agencies to ensure relevant transit information and other services are also a part of this app.
14	<b>Energy supply</b>	<b>A Smart City has reliable, 24/7 electricity supply with no delays in requested hookups. (Guideline 2.4)</b>	There is only intermittent electricity supply with regular power shedding. Many residents have to plan their days around when power is available.	Electricity supply and loads are managed as per demand and priority for various functions with clear scheduling, with electricity being available in many areas for most hours of the day.	Electricity is available in most parts of the city for most hours of the day but some areas are not so well-served. Smart metering exists in some parts of the city but not all.	Electricity is available 24 x 7 in all parts of the city with smart metering linked to online platforms for monitoring and transparency.	Scenario 3 for Pan -city and area based	1. No scheduled power cuts 2. AT&C losses reduced to 17.61% 3. Power Supply through underground lines at most locations 4. Downtime is 3 hr for consumer service connection 5. Many initiatives to utilise renewable energy sources 6. Smart metering introduced for 55 customers as a pilot project. This is planned to be implemented at PAN city level	Scenario 4  <b>Uninterrupted Power supply (24x7) with no outage</b>  • 100% power supply through underground cables • Average downtime of power supply in city to be less than 1 hr for consumer service connection • Implementation of Smart bi-directional net meters (100% in city) at consumer level • Micro grid based monitoring system • Minimum 10% of solar energy to be tapped	Readiness of the city: 1,02,495 Smart meters are already installed  Initiative to move the city from current status to advanced status:  Smart Energy Management 1. Use of solar power 2. Introduction of smart bidirectional net meters for 100% city households. 3. Introduction of Micro-grid based distribution management system 4. Convert all overhead lines to underground cables with RFID tagging.

**Annexure - 2**

**Chennai Smart City: Self Assessment**

A	B	C	D	E	F	G	H	I	J	K
	Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment for the full city with regard to each feature	Basis for assessment and/or quantitative indicator (Optional - only if data exists)	Projection of 'where the city wants to be' with regard to the feature/indicator based on the city vision and strategic blueprint	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
15	<b>Energy source</b>	<b>A Smart City has at least 10% of its electricity generated by renewables. (Guideline 6.2)</b>	The city does not have any renewable sources of energy and there is no commitment to promote this for the foreseeable future.	The city is preparing plans for ensuring that it gets more energy from renewable sources and is in the process of making commitments in this regard.	Some energy consumed in the city is produced through renewable sources. There are long term targets for higher renewable energy capacities and the city is making plans to achieve these.	At least 10% of the energy used in the city is generated through renewable sources. The city is undertaking long-term strategic projects to tap renewable sources of energy in its region/beyond to increase the percentage of renewable energy sources.	Scenario 3 for Pan -city and area based	1. 95% Energy from non renewable sources 2. 5% Energy from renewable sources <b>Solar - 358.26 MW</b> <b>Wind - 7,498.55 MW</b> <b>Biomass - 230 MW</b> <b>Bagasse based Cogen - 659.4 MW</b> 3. Auto rickshaw/ public vehicles are operated predominantly on Diesel/Petrol 4. 23 Auto LPG Dispensing Stations 5. 2 STP plants providing energy  Data from electrical authorities and websites	Scenario 4  1. <b>10% of power consumption through renewable energy sources</b> 2. Conversion of all public vehicles into Electric/Battery operated vehicles 3. Solar power charging at all important locations for charging	Readiness of the city: • Households already opting for solar roof top system • Tamilnadu government is providing subsidy of Rs.20,000/- up-to 1kWp installation through TEDA • 30% subsidy offered by MNRE, Govt of India  Initiative to move the city from current status to advanced status: 1. Clean Energy to all citizens 2. Citizen awareness for installing solar roof top system. 3. All STP's to be installed with power generation mechanism. 4. Landfill sites to be provided with waste to energy/ Bio-methanation plants
16	<b>Water supply</b>	<b>A Smart City has a reliable, 24/7 supply of water that meets national and global health standards. (Guidelines 2.4 &amp; 6.2)</b>	The city has a poor water supply system with limited water availability. There are no clear targets to achieve higher quality and optimal quantity standards. Unaccounted water loss is above 40%	The city has intermittent water supply and availability. However it is setting targets and processes in place to try to improve its water supply. Unaccounted water loss is less than 30%.	The city has 24 x 7 water supply in most areas but the quality of water does not meet international health standards. Unaccounted water loss is less than 20%.	The city has 24 x 7 treated water supply which follows national and global standards and also available in sufficient quantity and affordable across all sections of the society. Unaccounted loss less than 15%.	Scenario 2 for pan city	1. Network coverage - 5275 km 2. Per Capita supply - 75.22 LPCD 3. Extent of UFW - 11.34% 4. Continuity of water supply - 2-3 hours 5. Efficiency in redressal of customer complaints- 87% 6. Quality of water -92.38% 7. Supply of tertiary treated water to industries - 36 MLD 8. Revenue Collectio - INR 350 crores with 86% efficiency  Service Level Improvement Plans submitted to GoI for AMRUT	Scenario 4  Meet MOUD guideline in water supply system • <b>135LPCD supply</b> • <b>24x7 supply</b> • <b>UFW to less than 5%</b> • Efficiency in customer complaint redressal system - 95% • 100% metering • 100% quality water • Efficiency in collection of user charges - 95% • 24x7 customer helpline service • Pressure, flow and water quality monitoring- 100%	Readiness of the city • Water supply Master plan prepared in 2015 is in place with identified water supply components for the entire corporation areas.  Initiative planned for achieving the advanced status • Smart Metering, DMA • Smart Water - Digital Solutions for Citizen Services • GPRS enabled payment collection system • Volumetric billing and online collection system. • Leak detection and reduction strategies; improved O&M practices. • Awareness campaign.
17	<b>Water management</b>	<b>A Smart City has advanced water management programs, including smart meters, rain water harvesting, and green infrastructure to manage stormwater runoff. (Guideline 6.2)</b>	The city does not measure all its supply. It does not recycle waste water to meet its requirements and rain water harvesting is not prevalent. Flooding often occurs due to storm water run-off.	The city has meters for all its water supply but lacks mechanisms to monitor. Water wastage is very high. Some, but not much, rainwater harvesting exists.	The has meters for all its water supply with some smart mechanisms to monitor. Rainwater harvesting systems are installed and storm water is collected and stored in water bodies. However, recycling of waste water and reusage of storm water is limited.	The city has meters for all its water supply. It includes smart mechanisms to monitor remotely. Rainwater harvesting systems are installed and utilised through the city and storm water is collected and stored in water bodies and treated for usage. Recycled waste water is supplied for secondary uses.	Scenario 3 for pan city and area based.	1. Present supply to city is 530 MLD 2. The city has 3.06% consumer meters. 3. UFW - 25% 4. Rain water harvesting system is mandatory for all new building approvals. 5. Supply of 36 MLD of Tertiary treated water to industries. 6. Drainage network coverage- 35%. 7. Flooding at 296 locations pan on city level.  Service Level Improvement Plans submitted to GoI for AMRUT	Scenario 4  <b>Sustainable water and waste water management</b>  • 100% metered connections. • Flow measurement 100% • Rain Water Harvesting System – 100% • Drainage Coverage 100% • Flooding locations - zero • 100% Sewer networks coverage with treatment and reuse options • Ban on ground water extraction • GIS Integrations	Readiness of the city • Master plan under preparation for water supply and sewerage system for the entire corporation area. Funding is expected to be made from Amrut Scheme. • 36 MLD of Tertiary treated water is in reuse already  Initiative planned for achieving the advanced status • Smart Water - Digital Solutions for Citizen Services Integrated Water, Waste water and Storm water Management system • Complete network coverage for Water, wastewater and storm water system including system automation and monitoring of flows. • GIS based utility map; periodic updation of O&M aspects • Special emphasis on Rainwater harvesting  Reduce stormwater runoff by increasing the permeable surface area through the planting of street trees and landscaping, and minimising unnecessary pavement and increasing permeability of parking areas.  Increase coverage of storm-water drain network in the city. Design drain networks so that water drains off of NMT infrastructure into appropriate channels and catch pits. At no point will footpaths, cycle tracks, or other NMT facilities lie at the lowest level in the street cross section, except in the case of NMT-only streets. Storm water facilities will be maintained regularly to prevent flooding of streets.

**Annexure - 2**

**Chennai Smart City: Self Assessment**

A	B	C	D	E	F	G	H	I	J	K
	Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment for the full city with regard to each feature	Basis for assessment and/or quantitative indicator (Optional - only if data exists)	Projection of 'where the city wants to be' with regard to the feature/indicator based on the city vision and strategic blueprint	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
18	<b>Waste water management</b>	<b>A Smart City treats all of its sewage to prevent the polluting of water bodies and aquifers. (Guideline 2.4)</b>	The city is unable to treat all its sewage. Many local sewer lines open on to water bodies and open ground and pollute the environment.	Most waste water is collected and treated before before disposal. However the treated water does not meet standards and is not recycled for secondary uses.	All the waste water is collected and treated before before disposal. It is also treated to a high standard and some is recycled.	The city has zero waste water because all the waste water is collected, treated and recycled. It meets standards an reduces the need for fresh water.	Scenario 3 for pan city and area based	1. Sewer network of 4816.84 km out of 5941.64 km road. 2. 6 STP's of 769 MLD 3. Quality of sewage treatment -100% 4. Extent of reuse – 7.6% 5. Electricity generation –42MWhr 6. Extent of cost recovery -60%. 7. Efficiency in redressal of customer complaints -60% 8. Efficiency in sewage charges- 60%  Service Level Improvement Plans submitted to Gol for AMRUT	Scenario 4  <b>100% collection and treatment of waste water including recycling- meet MOUD benchmark.</b>  • Network coverage- 100% • Collection efficiency - 100% • Adequacy of STP- 100% • Quality of sewage treatment - 100% • Extent of reuse - 100% • Extent of cost recovery -90%. • Efficiency in redressal of customer complaints -90% • Efficiency in collection - 90%	Readiness of the city • The city has waste water collection network covering about 67% of the area; the city has complete Master plan prepared for Waste water system already. The project is planned to be funded under AMRUT Scheme. • Automation of SPS and STP already implemented  Initiative planned for achieving the advanced status  Implementation of Integrated Waste water management system • 100% network coverage • Complete automation of sewage system. • Installation of flow / level sensors at strategic locations. • 100% reuse of waste water. • Recycled wastewater quality monitoring • GPRS enabled payment collection system • Efficiency in customer complaint redressal system
19	<b>Air quality</b>	<b>A Smart City has air quality that always meets international safety standards. (Guideline 2.4.8)</b>	City does not have plans, policies or programs to improve the air quality. Systems to monitor air quality are absent.	City has programs and projects to monitor air quality and spatialising the data to ascertain reasons for degrees of pollution in the air. A few strategies to decrease air pollution have been implemented.	City has programs and projects to monitor air quality and spatialising the data to ascertain reasons for degrees of pollution in the air. Pollution levels are acceptable.	The city has clean air by international standards. Live Air quality monitoring cover the entire city and data of air quality are mapped.	Scenario 2 for pan city and area based  1. Automobiles are the main source of air pollution. 2. Air quality doesn't comply with national & international standards. 3. Air monitoring stations have been established at 8 locations	Pollution control board standard  Quantitative metrics: Vehicular pollution alone accounts for 71% of total pollution in the city followed by industrial pollution (20%). (CMDA Densification study)  Noise levels exceed permissible norms at all locations in the city (CMDA densification study)	Scenario 4  <b>Air quality meeting the national standards</b> 1. The city has clean air by international standards. 2. Live Environmental Quality monitoring covering the entire city	Readiness of the city 1. Implementation plans in place for NMT policy 2. Metro rail is in operation already 3. Emphasis on public mass transportation system already 4. Traffic CCTV camera installation at important junctions  Initiative planned for achieving the advanced status • Air monitoring stations at strategic locations including its display system; mapping on GIS. • Intelligent transportation / traffic management system • Comprehensive mobility plan • Effective communication to stakeholders • Emphasis on mass transportation system  Reduce air and noise pollution by promoting non-motorised NMT modes (walking & cycling) through construction of footpaths, cycle sharing systems and improving transit access. Restrict vehicle use by implementing on-street parking mangement systems.  Set up appropriate air-quality and noise pollution monitoring systems in the city. Work with the State Pollution Control Board/ others to monitor air quality levels at multiple locations.
20	<b>Energy efficiency</b>	<b>A Smart City government uses state-of-the-art energy efficiency practices in buildings, street lights, and transit systems. (Guideline 6.2)</b>	City has no programs or controls or incentive mechanisms to promote or support energy efficiency in buildings	The city promotes energy efficiency and some new buildings install energy efficiency systems that track and monitor energy use and savings.	Most new public buildings install energy efficiency systems and some older buildings are also retrofitted to be more energy efficient. Local government conducts counselling and outreach with developer, businesses and residents to adopt energy efficiency strategies	All the existing old and new public buildings employ energy efficiency principles in development and operation and apply for energy rating by national and international forums. Many non-public buildings are also energy efficient because the government promotes energy efficiency through incentives and regulations.	Scenario 3 for pan city and area based	Town planning authority has already given regulations for energy efficient systems in new upcoming buildings under corporation area.  1. Transmission & Distribution losses is reduced by 17.61% 2. Corporation has already converted 35,329 Sodium Vapour lamps to smart LED street lighting system  Data from Municipal Corporation	Scenario 4  <b>100% smart LED street lighting system at Pan-city level and energy efficient practices for buildings resulting in less power demand</b>	Readiness of the city: Corporation has already converted 35,329 Sodium Vapour lamps to smart LED lights, 61,379 new LED lights installed and planned to install another 30,012 in the city.  Initiative to move the city from current status to advanced status:  Creation of 100% energy Efficient system 1. Energy audit of Pumping stations; replacement of non efficient pumps. 2. Convert all remaining 1,51,759 sodium vapour lamps to smart LED lighting. 3. Building approvals only after installation of energy efficient practices 4. Energy efficient lighting system at public spaces 5. Public awareness programs
21	<b>Underground electric wiring</b>	<b>A Smart City has an underground electric wiring system to reduce blackouts due to storms and eliminate unsightliness. (Guideline 6.2)</b>	City does not have plans for underground electric wiring system.	More than 40% of the city has underground electric wiring system.	More than 75% of the city has underground electric wiring system.	More than 90% of the city has underground electric wiring system.	Scenario 4 for pan city and area based	City has most of its power distribution as underground lines	Scenario 4  <b>100% underground cabling system</b>	Readiness of the city: At most areas in the city, the electrical cables for street lights are underground  Initiative to move the city from current status to advanced status: 1. Conversion of existing 59.7km HT Overhead distribution lines and 187.5km LT Overhead distribution lines to underground cables with RFID tagging for effective monitoring and maintenance of electrical service lines

## Annexure - 2

## Chennai Smart City: Self Assessment

A	B	C	D	E	F	G	H	I	J	K
	Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment for the full city with regard to each feature	Basis for assessment and/or quantitative indicator (Optional - only if data exists)	Projection of 'where the city wants to be' with regard to the feature/indicator based on the city vision and strategic blueprint	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
22	<b>Sanitation</b>	<b>A Smart City has no open defecation, and a full supply of toilets based on the population. (Guidelines 2.4.3 &amp; 6.2)</b>	Many parts of the city do not have access to sanitation infrastructure and facilities.	Sanitation facilities are available to 70% of the city's population.	Sanitation facilities are available to 90% of the city's population.	Sanitation facilities are available to 100% of the city's population.	Scenario 2 for pan city and Scenario 4 for area based	<ul style="list-style-type: none"> <li>The city has sanitation facilities coverage to 75% lavatories of the city population</li> <li>66.99% of sewerage collection network</li> <li>Community toilets of more than 800 nos</li> </ul> Site visit and data from Corporation of Chennai	Scenario 4 <b>100% Clean and Hygiene city</b> 1. Sanitation facilities to 100% of the population 2. Adequate public toilet facilities as per National Urban Sanitation Policy	Readiness of the city Work on Swachh Bharat Mission ongoing for addressing the issue of open-defecation by floating population  Initiative planned for achieving the advanced status <ul style="list-style-type: none"> <li>Database of households that don't have sanitation facilities.</li> <li>Providing 100% sewage facilities to all slums.</li> <li>Installation of community toilets at all public places</li> <li>Proper emphasis on O&amp;M aspect.</li> </ul>
23	<b>Waste management</b>	<b>A Smart City has a waste management system that removes household and commercial garbage, and disposes of it in an environmentally and economically sound manner. (Guidelines 2.4.3 &amp; 6.2)</b>	Waste collection systems do not pick up waste on a frequent basis and waste often enters into water bodies.	Waste generated is usually collected but not segregated. Recycling is attempted by difficult to implement.	Waste is segregated, collected, recycled and disposed in an environmentally sound manner.	The city reduces land fill caused by waste so that it is minimal. All the solid waste generated is segregated at source and sent for recycling. Organic waste is sent for composting to be used for gardening in the city. Energy creation through waste is considered.	Scenario 2 for pan city and area based	1. Waste generated - 5099 MT. 2. Per capita generation - 700 g. 3. Collection efficiency - 100%. 4. Segregation at source - 5% 5. Transported using vehicles to landfill sites at Kodungaiyur and Perungudi 6. 36 composting plants handling 38.5 MT and 10 Waste-to-energy plants handling 7.75 MT  Corporation of Chennai	Scenario 4 <b>Scientific handling of waste- 4 R concept including Waste to Energy plants</b> 1. Collection efficiency - 100% 2. Source Segregation -100% 3. Scientific management of the landfill sites 4. MSW management process - as per global standards. 5. Door to door collection-100% 6. Organic composting Plant – 100% 7. Waste to energy Plants – 100%.	Readiness of the city <ul style="list-style-type: none"> <li>Reclamation of landfill sites at Kodungaiyur and Perungudi</li> <li>Privatization of conservancy operations.</li> <li>Geogencing of Bins</li> </ul> Initiative planned for achieving the advanced status  Implementation of effective waste management system <ul style="list-style-type: none"> <li>Implement 4R concept i.e Reduce, recycle, reuse and Refuse.</li> <li>Introduction of 3bin system.</li> <li>Pay as much you throw</li> <li>GPS tracking of vehicles; Automatic Weigh bridges; System Integration</li> <li>Surveillance system</li> <li>Training of staff</li> <li>Penalty aspects</li> </ul>
24	<b>Safety and security</b>	<b>A Smart City has high levels of public safety, especially focused on women, children and the elderly; men and women of all ages feel safe on the streets at all hours. (Guideline 6.2)</b>	The city has low levels of public safety - most groups of residents feel insecure during most parts of the day in many parts of the city.	The city has medium levels of public safety - some more vulnerable groups feel insecure during some points of the day and in some parts of the city	The city has high levels of public safety - all citizens including women, children and the elderly feel secure in most parts of the city during most time in the day.	The city has very high levels of public safety - all residents feel safe in all parts of the city during all hours of the day.	Scenario 4 for pan city and area based	<b>Voted as Best City in India</b> twice by India Today - 2014 & 2015 Surveillance systems installed in most parts of the city and patrolling activity  1. Accidents - 9705 2. Fatal Incidents - 1247 3. CCTV Cameras installed at few locations State Transport Authority, Government of Tamilnadu	Scenario - 4 <b>Safe and secure city (24 x 7) for all citizens (particularly women, children and elderly)</b>	Readiness of the city: 1. Dial 100 implemented for citizen safety. 2. ongoing Safety measures taken by traffic department  Initiative to move the city from current status to advanced status:  Implementation of technology/ Web / App based Security system <ul style="list-style-type: none"> <li>Intelligent traffic management and Video Surveillance system for real time monitoring</li> <li>Two way communication system from central command centre.</li> <li>GPS based Public Vehicle Tracking system.</li> </ul>



# CITIZEN ENGAGEMENT



## Ward wise consultation done

People across Households, Gender & Age



People from Residential, Slums, Commercial and Industrial areas

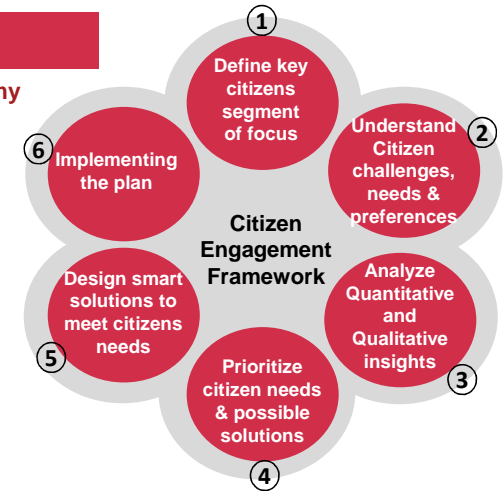


People across working class and economy



Consultation with other important people

- Ex-mayors, corporators and high-level dignitaries of State government and MLAs
- Chamber of commerce and other industrialists and associations
- Doctors and Medical practitioners
- CREDAI, Architects and planners
- College Students, Women groups
- Tax and Bar association
- Disabled including transgender
- Railway management



Ex Mayors & Commissioners



Chamber of Commerce & Industry Associations



United Doctors Association



Trans genders



Bar Association



CREDAI

## SWOT Analysis & Visioning Exercise

1. Bhopal has developed a robust framework for citizen consultation. Inclusiveness was the core guiding principle behind our engagement methodology throughout the process.
2. The city has used several instruments to engage citizens in smart city planning process. Global experts for complex surveys like Frost and Sullivan were engaged to design customized survey instruments for Bhopal SCP.
3. Consultation strategy attempted to maximize diversity of stakeholders.
4. Proprietary tools used in over 100 countries were integrated with the MyGov initiative to yield best results. Analysis frameworks were developed to interpret meaning from received responses.



Visioning Exercise with Ex Mayor of Adelaide Mr. Stephen Yaarwood



SWOT analysis with Mr. O. P. Agrawal



Visioning exercise with Advisors

## Vision Statement

**“Transforming Bhopal, a City of Lakes, Tradition & Heritage into a leading destination for Smart, Connected and Eco Friendly communities focused on Education, Research, Entrepreneurship and Tourism”**



# CITIZEN ENGAGEMENT



## Responses received via different means

**Door to Door surveys (across all 85 wards)**  
5000 responses received in each of round 1 and round 2

**Self filled surveys**  
1.65 Lakh self filled surveys conducted at various ward offices of Bhopal Municipal corporation

**Online/Web Survey**  
Over 49000+ responses received on BMC website

**YouTube Videos**  
2627+ views of Bhopal Smart City videos

**Phone calls/Messages**  
8000+ suggestions received in the form of calls/messages

**Social networking sites**  
Multiple discussions on Facebook and Twitter. Over 18000 comments and 200+ tweets

**Events/Fair**  
11 events among college students involving more than 10000 students. 2818+ poster competitions in schools/colleges

**Radio/TV**  
Publicity on radio and TV for 3 months

**MyGov essays**  
Over 5,081 essays received

**MyGov logo**  
81 entries received

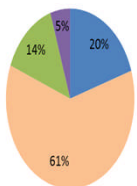
**MyGov Discussions**  
Over 1,14,531 responses received

### Citizen consultation meetings

Over 20 consultation programs in round 1 and 15 in round 2 conducted among various group of citizens, headed by Honorable Mayor, Commissioner and other dignitaries. Five focus group discussions

### Citizen Consultation Results

Type of development model required



- Retrofit
- Redevelopment
- Greenfield
- Mixed Approach

Redevelopment Model	
Shivaji Nagar 3250 hospitals	48%
Chowk bazar old city	20%
South TT Nagar (Laxwar chowk to TT Nagar Stadium)	18%
1300 quarters	12%
Shalwar nagar (BSE office, old BPO, Karhala government bungalows)	11%
Hanidra road- matka bus stand and surrounding areas	9%
BHEL	5%
Old district court and surrounding areas (Down Idgah hills)	4%
74 Bungalows	2%
45 Bungalows and GBI complex	1%



City Level Advisory Body



Political leadership



Architects



Students



Deaf & Dumb



Painting Competition



Discussion with Railway Administration



Discussion with Chief Secretary



Nasscom



Media Conference



City wide Hoardings



Mobile Van



# CITIZEN ENGAGEMENT



Let us join this mass movement towards **Surajya**, Realise the hopes and aspirations of the people and take India to greater heights!

जरोड़ो नरोड़ो

TRENDING

MoUD Smart Cities

Do

Discuss

Poll

Blog

Talk

Suggestions-171645

Talk

Blogs

Essays

BMC Website discussion page

BMC Facebook Page



Hon'ble Chief Minister



Additional Secretary @ Smart City Conference



Joint Secretary

Suggestions asked on draft SCP



# Area Based Development - Vision

Bhopal Smart City has been envisioned as to be 24/7 activity based, thriving and energetic place where people will live work and play. This integrated **live-work-play-learn-shop** concept is an approach to sustainable, which giving residents and workers great convenience to commute with a reduce time, within their living environment in terms of convenient access to amenities and facilities around include through land use coordination of carefully balanced areas of residences, office, education, medical and entertainment area.

## SITE & CONTEXT



Area Based Development Proposal is based in Southern part of the City of Bhopal, in Shivaji Nagar Area near Tulsi Nagar & Char Imli Area. The Site is near to Habibganj Railway Station and next to existing BRT corridor. The Proposed Site for Redevelopment is with approx. area of 350 acres. The Site is in-between existing Business Zones like South TT Nagar & New Market area, being between two major commercial nodes the Site has potential to create commercial arc by connect two nodes. Arc will act as catalyst for initial investment in Real Estate. Also, modern Commercial Zone would provide better economic & employment opportunities.

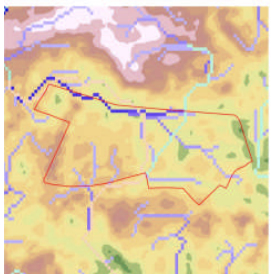
### TOPOGRAPHY



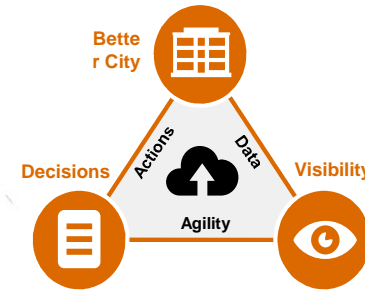
### SITE BOUNDARY



### HYDROLOGY



The Site has a topographical difference of 15mt from one end to another. The Site also has a major natural drain along East-West Axis. The Proposal would retain natural slope of site also existing drain would be rejuvenated as water channel with lively public spaces alongside.



#### Smart Government

- Transparency, accountability
- Better decision making



#### Smart Environment

- Better waste management
- Air quality monitoring



#### Smart Utilities

- Resource conservation
- Resilience



#### Smart Mobility

- Intelligent traffic management
- Safer roads



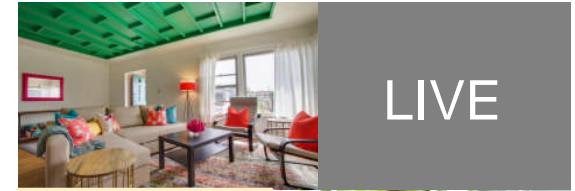
#### Smart Healthcare

- Health maps
- Better emergency services



#### Smart Living

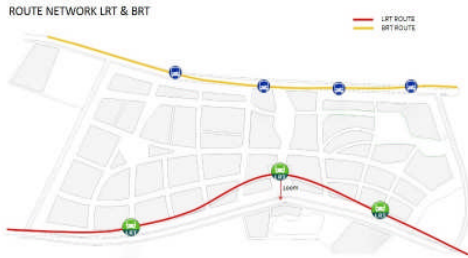
- Safety and security
- Better quality of life



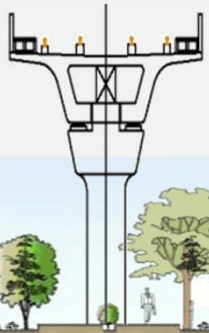


# Area Based Development – Design Strategy

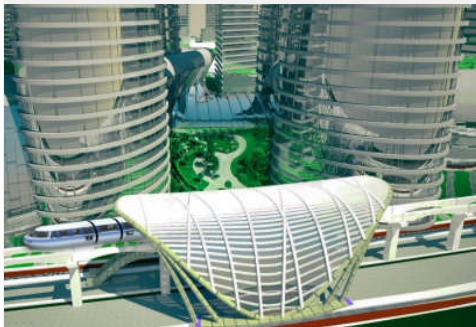
## LRT & BRT ROUTE (TOD POINTS)



The Site has proposed LRT Corridor on both edges of the Site. The design utilizes potential of these Transit Systems to create a TOD. LRT route is diverted 100m into site to reduce walking distance from stations to workplace/home.

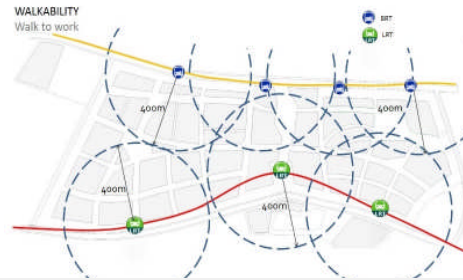


ELEVATED LRT

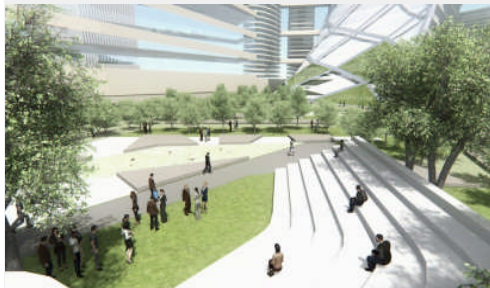


TOD AROUND LRT STATION

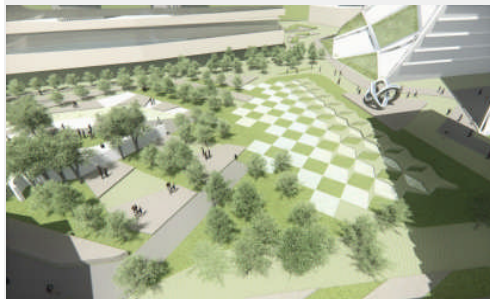
## WALKABILITY



The Key concept of Smart City, Bhopal has been to create Walkable City with least amount to Traffic/Vehicles. Idea is to Promote public transport, encourage walk to work and achieve healthy lifestyle. LRT Stations are strategically located to cover site within 10mins walk. The Whole Development is inter-connected with multiple Pedestrian/Greens Linkages at an Interval of max. 150 metres connecting all parcels to Major Plaza & Green Spaces. The linkages are designed to provide incidental Open Spaces/Plazas which become Nodes of Activity.

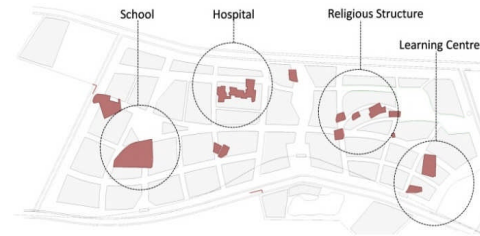


ACTIVE PLAZA



CENTRAL PLAZA SPACES

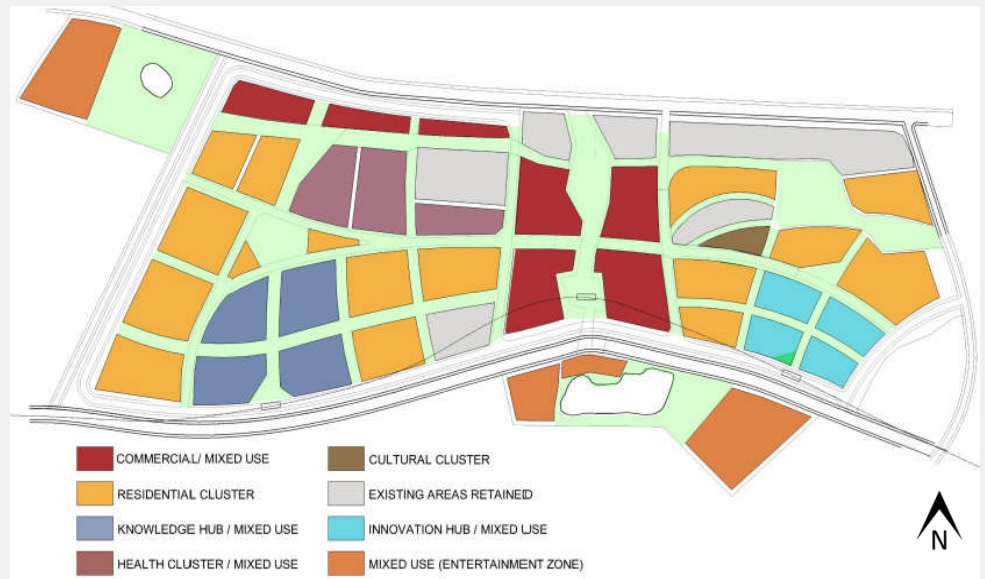
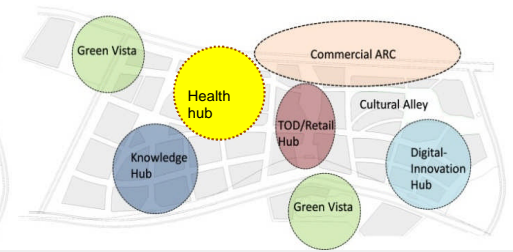
## EXISTING STRUCTURES



Certain Structures have been considered to be retained on site like Major religious structures have been retained considering issues at implementation stage and Large institutional buildings like JP Hospital & Red cross hospital. Structures considered to be retained on site based on importance in terms of social and cultural infrastructure. With the aim to Re-develop Shivaji Nagar, Bhopal as a modern & efficient smart city.

The MasterPlan envisages to create various Hubs/Clusters to cater to various industries & sections of the society. The various Hubs/Clusters facilitate providing opportunity to develop new sectors of economy, by providing diverse set of functions/facilities while providing comfortable and sustainable lifestyle to residents & community. Six Hubs/Clusters have been proposed in the Masterplan such as Digital- Innovation Hub, Knowledge-Research Hub, Health Hub, Commerce Hub, Retail Hub & Entertainment Zone with supporting Residential Clusters. These Hubs have been placed with reference to Public Transit Points like BRT/LRT, creating Transit Oriented Theme Based Development, with supporting clusters catering to general public.

## DIVERSE HUB STRATEGY



- COMMERCIAL/ MIXED USE
- RESIDENTIAL CLUSTER
- KNOWLEDGE HUB / MIXED USE
- HEALTH CLUSTER / MIXED USE
- CULTURAL CLUSTER
- EXISTING AREAS RETAINED
- INNOVATION HUB / MIXED USE
- MIXED USE (ENTERTAINMENT ZONE)

LANDUSE STRATEGY





# Area Based Development – Master Plan



RETAIL PLAZA AT KNOWLEDGE HUB



MULTI MODAL INTEGRATION AT CENTRAL TOD



INTERACTIVE PLAZA AT INNOVATION HUB



MIXED USED AT PERIPHERY





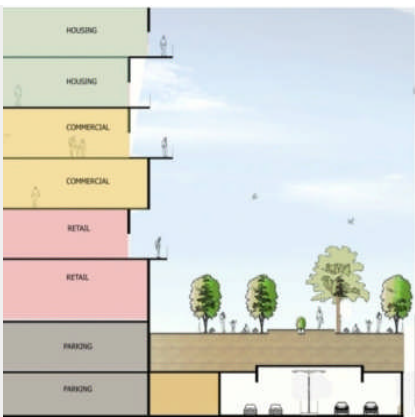
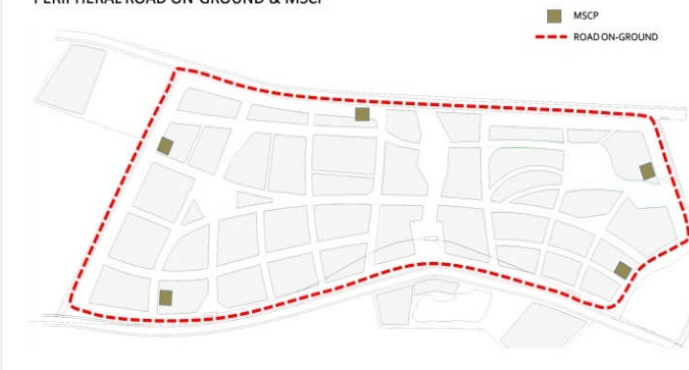
# Area Based Development – Mobility & Transportation



## VEHICLES RESTRICTED TO PERIPHERAL ROAD

The vehicles has been restricted to the periphery of the Site, a peripheral 4 Lane Service Road is designed to give access to Development on the edge of the site. Also, Multi-story Car Parks have been provided on the edge of site to achieve vehicle free site.

PERIPHERAL ROAD ON-GROUND & MSCP



## VEHICLE FREE GROUND LEVEL & UNDER-GROUND VEHICULAR ACCESS

There is no road on ground level, whole site developed with the concept of vehicular free public spaces. Parking has also been provided in Basement Level of each pocket, but providing such facility with high premium charges to dissuade car ownership but supplementing it by providing an alternative Public Transport System such as LRT/BRT.

UNDERGROUND VEHICULAR ACCESS



## BRT, GRT & PLAZA ON GROUND

The Key concept of Smart City, Bhopal has been to create Walkable City with least amount to Traffic/Vehicles. Idea is to Promote public transport, encourage walk to work and achieve healthy lifestyle.

GRT network connects to all parcels & Stations are placed at every 100mts, from where People can connect to other parts of development and transit nodes.

GRT NETWORK (GROUP RAPID TRANSIT)





# Area Based Development – Development Vision



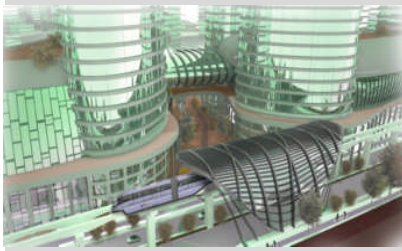
## KNOWLEDGE HUB

The Knowledge Hub envisages to aid Madhya Pradesh's ability to create, acquire, disseminate and apply knowledge which will be key to sustaining India's future growth.



## LIGHT RAIL TRANSIT STATION

Development is concentrated adjacent to Public Transit Points like BRT / LRT, creating multiple TOD zones



## LANDMARK TOWER

High rise tower at central TOD junction to create strong Contemporary image of the TOD development



## RETAIL PLAZA

Retail hub would act as the focal point of all retail activities of region & promote economic vibrancy



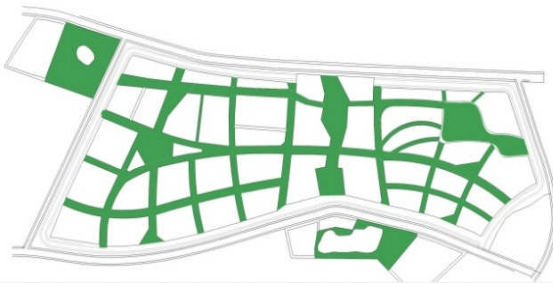
## INNOVATION HUB

The Digital Innovation Zone (DIZ) aims to promote Digital-Media, IT industry as well as companies related to the use of information, communication, and media technologies



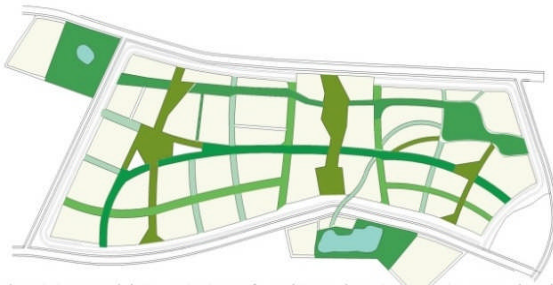


# Area Based Development – Public Spaces



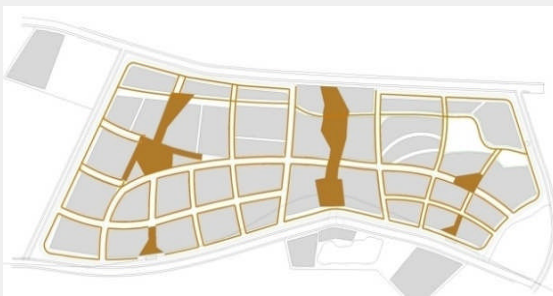
**OPEN SPACE STRUCTURE**

The Proposed Development is planned to be green, walkable and cycle friendly urban development. It intends to create a variety of open spaces. Primary Design Theme aims to create an Eco-Loop connecting major open spaces & waterbodies of the city to the site as well as create a linkage between them.



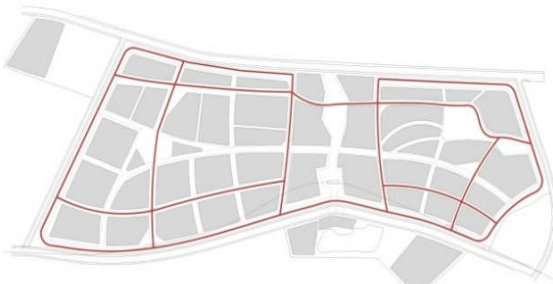
**OPEN SPACE HIERARCHY**

The existing natural drain on site is transformed into a dynamic community space. Also, all transit points are connected with considerable no. of open/public space. Public/Open spaces are dispersed across the development as well as are interlinked with network of connections providing access to varied types & scale of open spaces to all inhabitants and users.



**PEDESTRIAN NETWORK**

The Whole Development is interconnected with multiple Pedestrian/Greens Linkages at an Interval of max. 150 metres connecting all parcels to Major Plaza & Green Spaces. The linkages are designed to provide incidental Open Spaces/Plazas which become Nodes of Activity.



**CYCLETRACK NETWORK**

The Development is connected with multiple Bicycle-Tracks, each transit point like LRT/BRT is provided with Cycle-Stands from where People can borrow Bicycle and cycle to cycle-points near their homes/offices. Other Residents/ Inhabitants can borrow from these stands & then cycle to the transit hubs.



Central Plaza Space, the Development would have variety of Open Spaces of varied scale & sizes. These Spaces would be have Outdoor Refreshment Zones & Building edges would have Activity Generating Uses on Ground Floor.



Various Linkages are provided across the development, these linkages have Activity Generating Uses at Ground Floor Level. The Walkways & Cycleways are segregated by small Green Belt to keep both separate yet together.

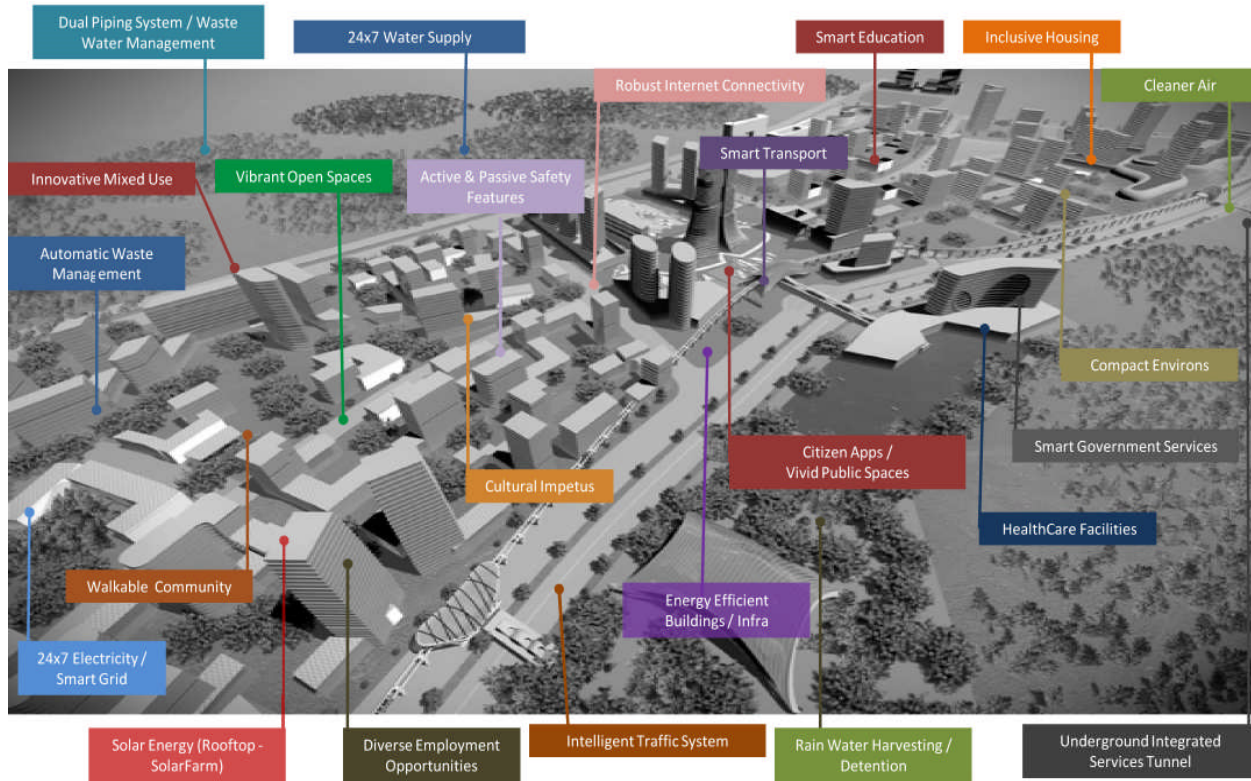


# Area Based Development – Precinct/Hub Strategy

KNOWLEDGE HUB	DIGITAL-INNOVATION ZONE	HEALTH HUB	COMMERCIAL HUB	CULTURAL HUB
				
<p>Knowledge HUB bolsters Government of India's initiative towards creating a Digital India with inventive, innovative and entrepreneurial knowledge. Creating a Knowledge based Digital economy. (KBE)</p> <p>The global market of products and services is now more technology- and knowledge-intensive. The Knowledge Hub envisages to aid Madhya Pradesh's ability to create, acquire, disseminate and apply knowledge which will be key to sustaining India's future growth.</p> <p>KBE can be realized through linking the Human Capital's ability in stimulating, developing, and nurturing education; research and development; entrepreneurship; networks and ICT infrastructure; and provision of Incubation (Seed Capital). The KNOWLEDGE/INNOVATION HUB crafts an Integrated Development to foster Research Based Innovation, creating future assets for country while aiding growth &amp; employment. Aim is to create a compact campus which provides students with Intensive Research Facilities &amp; finest resources of International Standard.</p>	<p>The Digital Innovation Zone (DIZ) aims to promote Digital-Media, IT industry — as well as companies related to the use of information, communication, and media technologies. The DIZ serves the nation's larger goals of strengthening innovation economy and promoting Bhopal as an alternative hub for commerce being Central to whole of India. DIZ will be the home to firms that create cultural material; R&amp;D Centres for software development, Information Technology etc. with technology-oriented office spaces.</p> <p>DIZ will host entertainment and retail establishments, technology companies, prestige housing, R&amp;D institutions. DIZ will feature Digital Street which will provide an opportunity to develop and test new technologies, and to refine them in a living laboratory environment. The Digital-Innovation Zone will be a vibrant cluster of digital content and technology enterprises, located on a state-of-the-art campus in the heart of Bhopal City. DIZ fosters innovation, technological development and creativity in a supportive, entrepreneurial environment.</p>	<p>An integrated and sustainable urban development, the Health Hub will incorporate many vibrant and outstanding features. These will extend beyond healthcare to encompass a complete and holistic ecosystem that includes health services, research and education, commercial, leisure and public spaces – achieving the goal of building a place where healthy life is central.</p> <p>Health Hub will be an integrated healthcare development where care and community both take centre stage. It aims to shape the future healthcare model of city, it will act as secondary healthcare in conjunction with AIIMS, Bhopal with an aim to enhance the health and ultimately empower people. The health care system consists of all personal medical care—plus the institutions and personnel that provide these services – a combination of government/public, and private organizations.</p> <p>There are four key elements to the Health Hub - <b>Care, Continuous Learning &amp; Innovation, Community and Connectivity.</b></p>	<p>Commercial Hub consists of High-End Office Spaces with allied Facilities like Media Centres, Business Hotels etc. Commercial Hub has been placed along Main Road-1 parallel to BRT Corridor, this Hub correlates to existing CBD at South TT Nagar as well connects to Habibganj Railway Station catalyzing relationship with rest of the state. The Zone has been positioned linearly along the Main Road maximizing revenue and lease potential.</p> <p>Commercial hub is very important from the perspective of economic development of the region. Commercial hub would act as the focal point of all commercial activities of region &amp; promote economic activities, creating jobs, and providing for greater revenues to the government and administration.</p> <p>The towers will be developed as a grouping of crystalline forms, sculpted and chamfered to reflect light and provide a sense of depth to the surfaces. The office and residential towers sculpt a dramatic skyline, marking it the dominant focal point along the Linear Development.</p>	<p>The Cultural Hub aims to provide access to diverse cultural opportunities for children and young generation as well as promotes a direct dialogue, sharing of skills, and a meaningful relationship between the education and cultural sectors. Its role is to bring together people from varied groups/backgrounds to come together relieving the cultural heritage of the state &amp; Country.</p> <p>The Cultural Hub is based in intrinsic part of the Shivaji Nagar with existing religio-cultural centres like Shri Aryappa Temple, Viswanathan Mandir &amp; Breathen Assembly Church.</p> <p>Important feature will be Cultural Alley which will provide an opportunity to pedestrian friendly public space combined with public art &amp; performing areas, connecting the existing religious centres and providing Creative Impetus to public. The alley will mix entertainment and retail uses with creative arts &amp; religious structures combining traditional Indian Urban Nodes &amp; Courtyards with modern touch. The alley would also create a public realm brings various cultures together by engaging people directly into creative arts.</p>
				
<p><b>EDUCATIONAL CAMPUS</b></p> <ul style="list-style-type: none"> <li>• Science Labs /IT Labs/Arts/Urban Solutions ACCOMODATION</li> <li>• Graduate Residences/Residential Colleges/Hostels</li> <li>• Faculty Residences/Married Student Accommodation</li> <li>• Dining Halls/Food Courts/Retail/ Recreation</li> <li>• CENTRE FOR RESEARCH &amp; EXCELLENCE Education Resource Centre (Student Learning Centre) Central Resource Lab/Library INCUBATION CENTRE</li> <li>• STUDENT ACTIVITY ZONE-SPORTS HUB</li> <li>• CENTRES OF EXCELLENCE FOR VOCATIONAL TRAINING</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple R&amp;D Centres</li> <li>• Digital Innovation Centre ( To Host Various Research Labs)</li> <li>• Business Research Collaboration Centre</li> <li>• High-tech Industry Centre</li> <li>• Global Digital Media Centre</li> <li>• I.T. CENTRE (To Host Technology Oriented Office Spaces)</li> <li>• Cultural Content Centre</li> <li>• Business Hotels</li> <li>• Rental Housing For International Affiliates</li> <li>• Serviced Apartments</li> </ul>	<ul style="list-style-type: none"> <li>• Multiple Speciality Health Centres/Super Speciality Hospital</li> <li>• Medical Research Facility/Medical Staff Accommodation/Residential Facilities/Research and Education/Institute of Public Health/Centre for Health &amp; Clinical Sciences/Commercial/Leisure Spaces/Public Spaces/Integration with Community/Central Green Park/Healing greenery</li> </ul>	<ul style="list-style-type: none"> <li>• Digital media hub</li> <li>• Office spaces (Banking/Finance/Media etc)</li> <li>• Loading /unloading area</li> <li>• Parking facilities5</li> <li>• Leisure</li> <li>• Business Hotels</li> <li>• Public Spaces/Integration with Community</li> <li>• Active &amp; Passive commercial zones</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural organisations/Cultural Centre/Rehearsal Spaces/Auditorium/Performance Theatre/Meeting rooms/Banquet Halls/Convention Spaces/Congregation Space/Community Centres/Library/Centre for Public Art/Performing Arts Centre/Multiplex/Gallery and artists workshops with residential component</li> </ul>



# Area Based Development – Smart Components



## 2. IDENTITY & CULTURE

Bhopal's rich Identity & Culture will be exhibited & preserved with the Cultural Hub to provide access to diverse cultural opportunities. Cultural Alley will provide pedestrian friendly public space with public art & performing areas, providing Creative Impetus to public.

## 3. ECONOMY & EMPLOYMENT

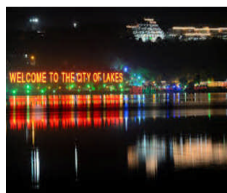
Masterplan would provide numerous employment opportunities to create a inventive-innovative economy providing prospects for employment to young generation. It aims to create multiple hubs & zones catering to various industries & research centres for future growth and employment.

## 4. EDUCATION

Multiple educational facilities of varied scale, serving not just the inhabitants of the Smart City but also the surrounding areas, a mix of Public & Private providing equal learning opportunity to students from all economic backgrounds.

## 5. HEALTH

Development would constitute combination of affordable healthcare options with mix of Super Speciality Public & Private Hospitals, with world class.



## 6. MIXED USE

The Masterplan envisages various Hubs (Theme Based Mixed Development) to facilitate providing opportunity to new sectors of economy, providing diverse set of functions/ providing lively, comfortable and sustainable lifestyle to residents & community.

## 7. COMPACTNESS

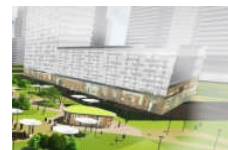
Proposal has been designed to create compact, dense & Walkable City. The whole development is Transit Oriented Development within 5min (400m) walk of any Transit Station (BRT/LRT).

## 8. OPEN SPACE

Development is planned as green, walkable and cycle friendly development. It provides a variety of open spaces, design aims to create an Eco-Loop connecting major open spaces & waterbodies.

## 9. HOUSING & INCLUSIVENESS

It has been designed as mixed-use, high-density district that provides more options for city living meaning that more people can live near their work place. It will have a range of housing choices to ensure a broad population can be housed.



## 10. TRANSPORTATION & MOBILITY

The Site is served with 4 BRT Stations on the Northern Periphery & 3 LRT Stations on the Southern Periphery, and whole development has 5 mins. Accessibility. Vehicles are restricted to a 4- Lane Service Road periphery road on Site to give access to Development on the edge.

## 11. WALKABILITY

Development is inter-connected with multiple Pedestrian/Greens Linkages & Dedicated Cycle-Tracks at an Interval of max. 150 metres connecting all parcels to Major Plaza & Green Spaces. Bikeshare & Cycle Stands are provided at all Transit Stations.

## 12. I.T. CONNECTIVITY

Development would have fibre-optic connectivity to each household & office to provide super high-speed connectivity to every inhabitant as well as will have provision for Public Wi-Fi system in all public plaza/areas.

## 13. INTELLIGENT GOVT. SERVICES

Bhopal Smart City would have Government Services available through e-governance model already being implemented in State of Madhya Pradesh. In addition to these, certain hyper-local facilities would be provided within Shivaji Nagar Re-development which would then be extended to across the city.

## 14. ENERGY SUPPLY

Captive Gas based Power Plant with Grid Backup for 24x7 Power Supply. Solar power systems will meet 10% of the area's demand with Smart/Net Metering. The Smart Grid and distribution would ensure Snag free distribution.

## 15. ENERGY SOURCE

All buildings within Shivaji Nagar Redevelopment would have to meet 15% of there energy demand from Solar Energy with Rooftop Photovoltaic along with Building Intergrated Photovoltaics (BIPV).

## 16. WATER SUPPLY

The Smart City would be provided be 24/7 Water Supply. Water would be treated to best of International Standards and supplied by Municipal Corporation.

## 17. WASTE WATER MANAGEMENT

Run-off Water from the site would be drained with help of natural slope of the site and stored in Waterbodies on the site, all building would have rain water harvesting system to improve Ground Water Table.

## 18. WATER QUALITY

Sewage & Waste Water from whole development would be transported thru Sewage Pipe to Central Sewage Treatment Plant on the Eastern Periphery of the development. The processed water would be re-used for Landscape Irrigation & Flushing Water requirement.

## 19. AIR QUALITY

Transit Oriented Development with max. no. of people using Public Transport reducing need for Private Vehicles reducing Air Pollution. Vehicle Free Development reducing overall Air Pollution within the development with discouragement to usage & ownership of Private Vehicles with high parking and access charges.

## 20. ENERGY EFFICIENCY

Bhopal Smart City would be a highly energy efficient urban zone, all street light would be LED based with Solar Panels, Smart Grids would be used to contain Transmission & Distribution Losses, All Buildings would have to meet Green Building standards such as LEED, GRIHA, GREENMARK etc.

## 21. UNDERGROUND ELECTRIC WIRING

Common services Tunnel for various services including Electrical Wiring which will provide Easy Access to Integrated Underground Utility Service (Electrical, communications, hot and cold water, centralize cooling system, pneumatic refuse collection pipes, gas pipes, sewer lines ).

## 22. SANITATION

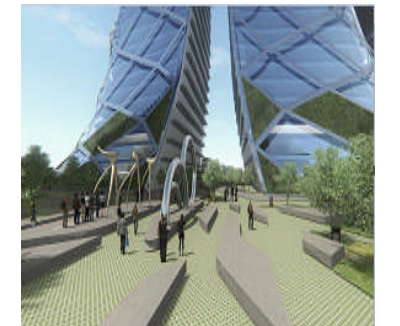
The development will have multiple Public Toilets integrated with Retail facilities so that Public Areas are free of Open defecation/urination. The development would also have a centralized STP for treating Sewage.

## 23. WASTE MANAGEMENT

The Bhopal Smart City will have Automatic Waste Collection System or Pneumatic refuse conveying system (S), which is a type of waste disposal system that uses air to move refuse through pipes to collection points. Waste Bins would be provided with sensors for proactive management.

## 24. SAFETY

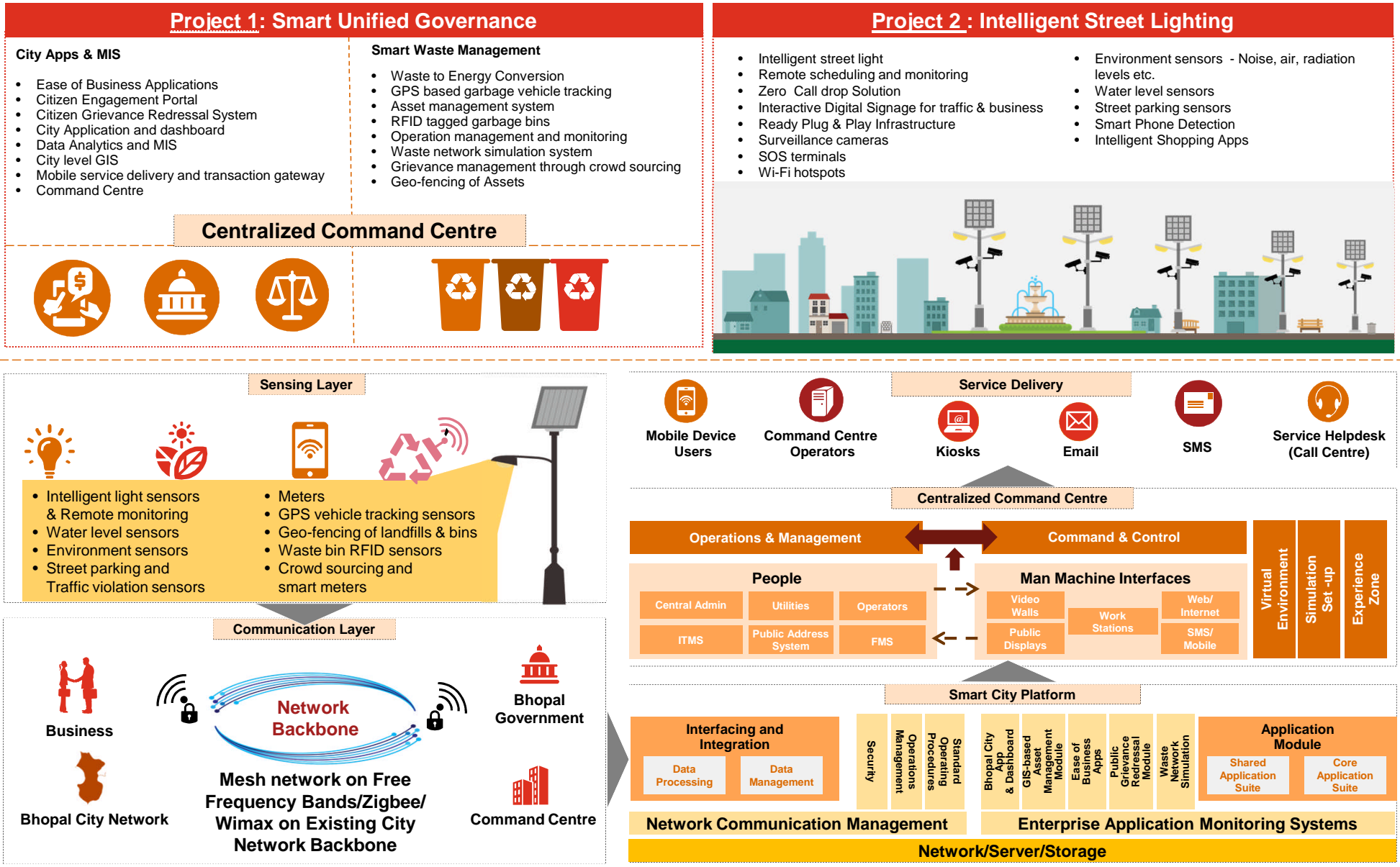
The development would have combination of Active & Passive Security Features. Passive Crime Prevention techniques include AGU's (Activity Generating Uses) at Ground Floor Level to keep it active for majority of time and under regular public surveillance.



# Pan City Solution - Overview, Technology Architecture and Core Components



## Components of Pan City Solution





# Pan City Solution- Smart Unified Governance

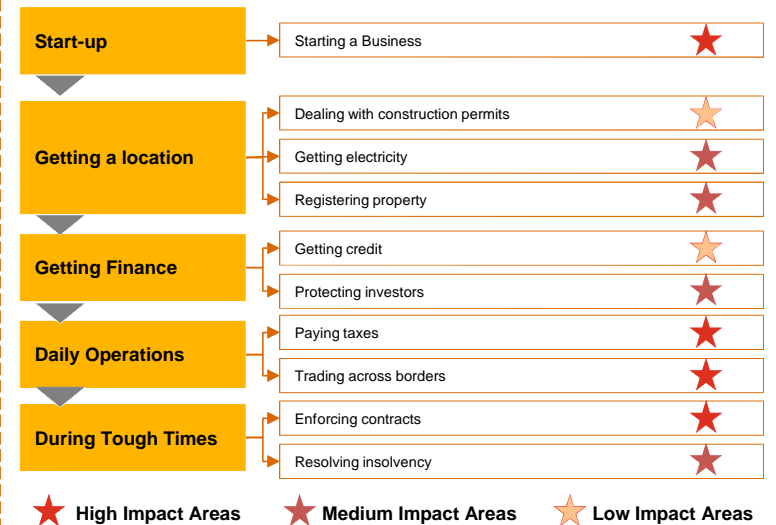


## Ease of Doing Business -Best practices in India

One day business registration policy	Single window clearance systems	Re-engineering of corporate registration procedure from 12 to 4 steps
Online Tax Management Systems	Prevention of abuse by insiders and company mismanagement. Through new Companies Act, GoI	GIS based support for site identification
Incentives to MSMEs and online registration systems	Boosting FDI limits across multiple sectors	GST to replace all indirect taxes systems



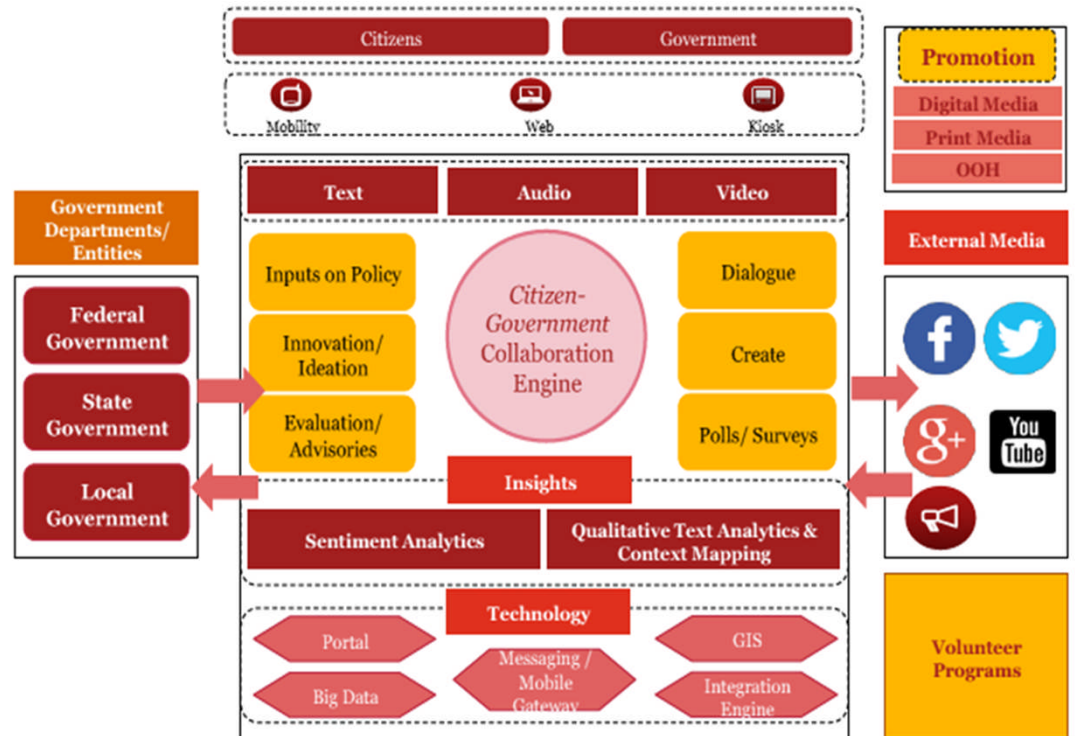
## Ease of Doing Business Criteria and it's impact



## Four key pillars to achieve ease of doing business environment

<b>Local factor Cost advantages</b>	
<b>Fiscal Policies &amp; Infrastructure Support</b>	<ul style="list-style-type: none"> <li>• Availability of Physical and Soft Infrastructure</li> <li>• Demographic Profile and State of Human Capital Development</li> <li>• State of Information and Communication Technology</li> <li>• Ease of getting credit</li> </ul>
<b>Investment Promotion and Industrial Policies/Procedures</b>	<ul style="list-style-type: none"> <li>• Investment enabling support provided by Government – information availability and investor handholding</li> <li>• Ease of Starting and Closing business</li> <li>• Investment promoting policies</li> </ul>
<b>Quality of Institutions, Regulations &amp; Reforms</b>	<ul style="list-style-type: none"> <li>• Single window approach</li> <li>• Law and Order scenario</li> <li>• Procurement procedure and user convenience</li> </ul>

## Citizen Engagement Initiative



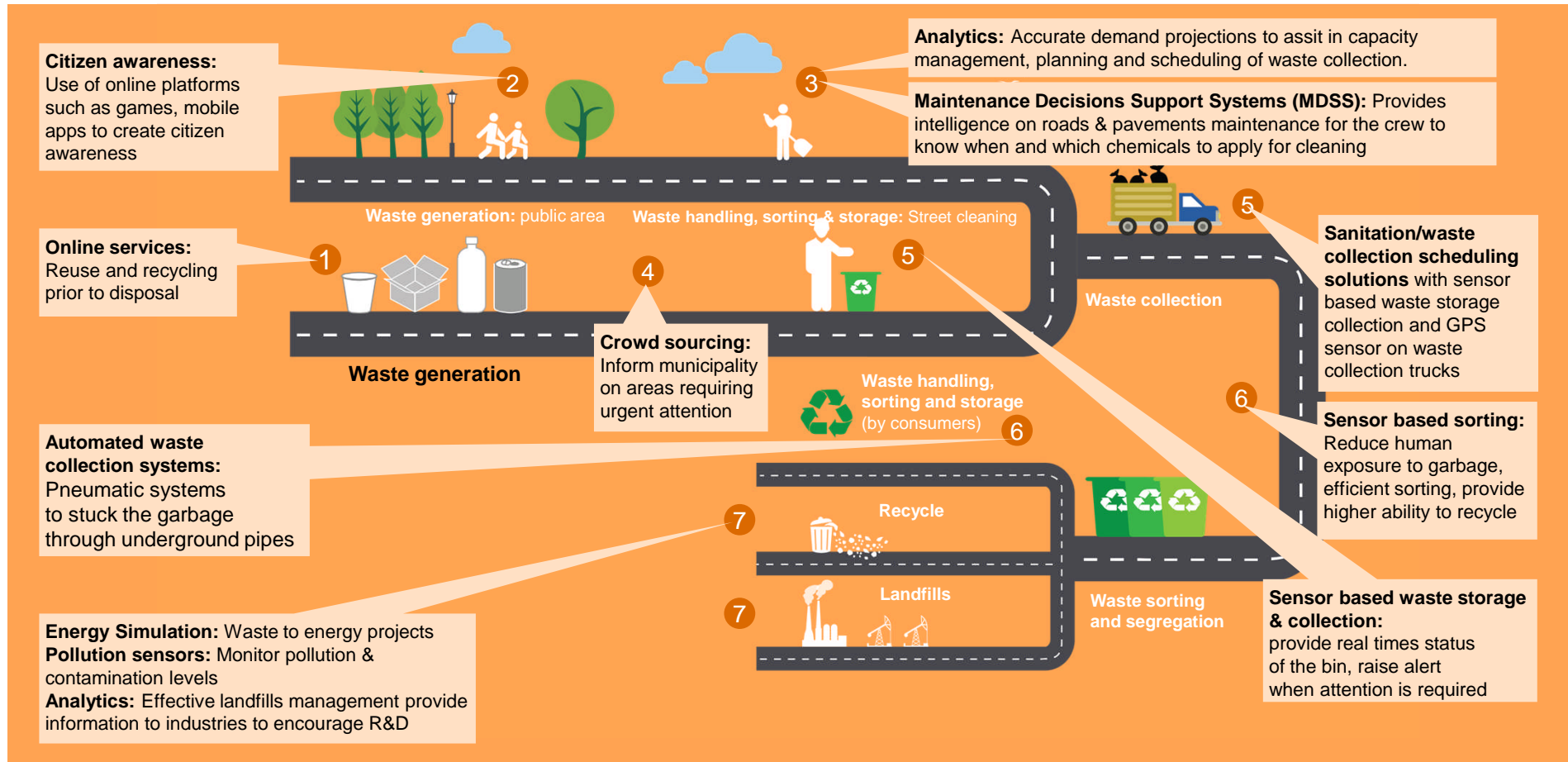
# Pan City Solution- Smart Unified Governance



## Mobile Apps

The image shows three mobile app interfaces. The first is a bill payment app with a balance of Rs. 608 and an 'ADD MONEY' button. It lists various services like Mobile Recharge, Data Card, Telecom, Utility, Gas, Credit Cards, DTH, Insurance, Subscriptions, and Donation. The second is a 'Service Request' form with fields for user details, address, and contact information. The third is a 'Submission Successful!' screen with a confirmation number and contact details.

## Smart Waste Management





# Pan city Solution – Intelligent Street Lighting



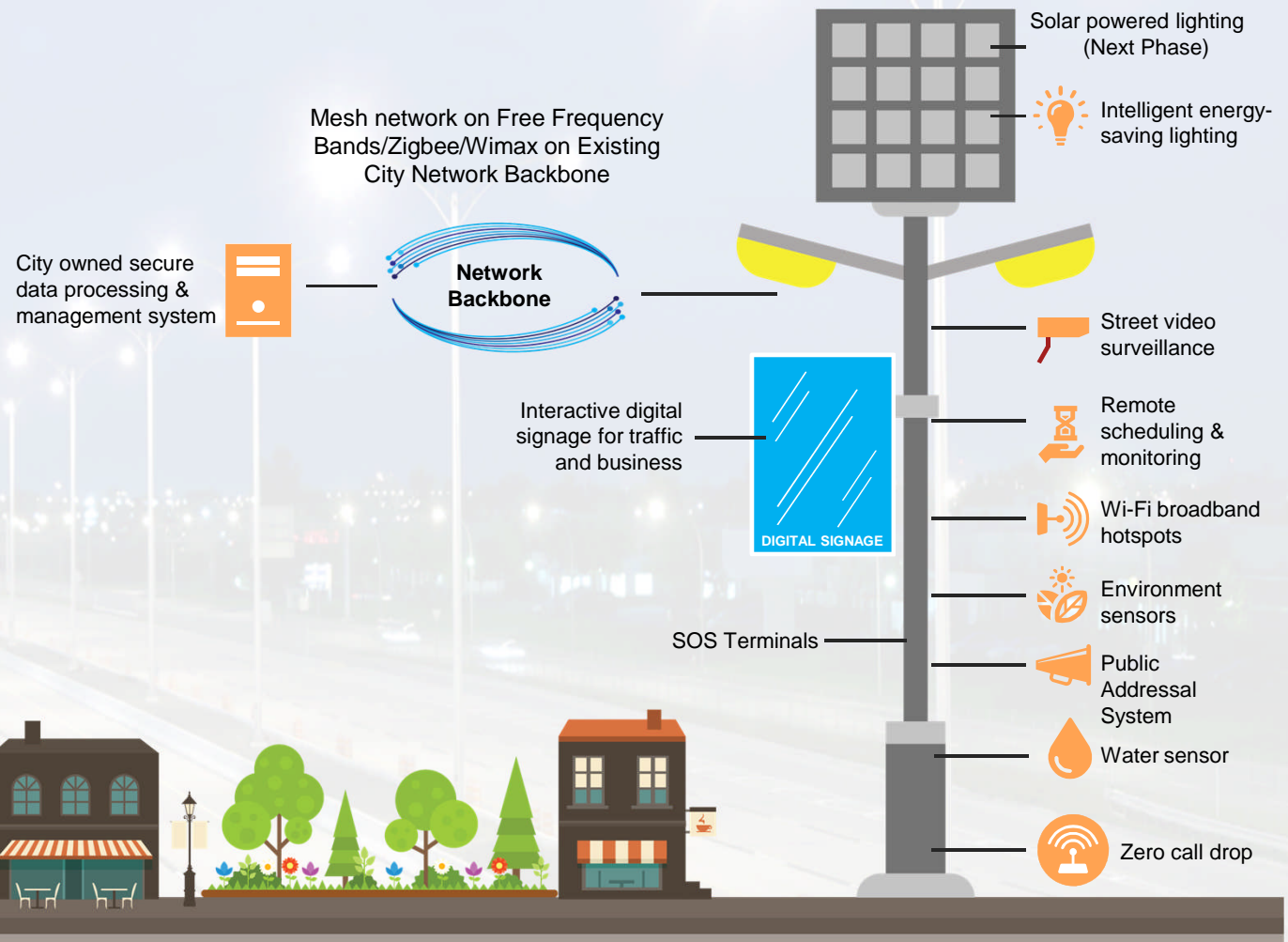
## Descriptive Solution Architecture

**50-60% energy saving from LED lighting**

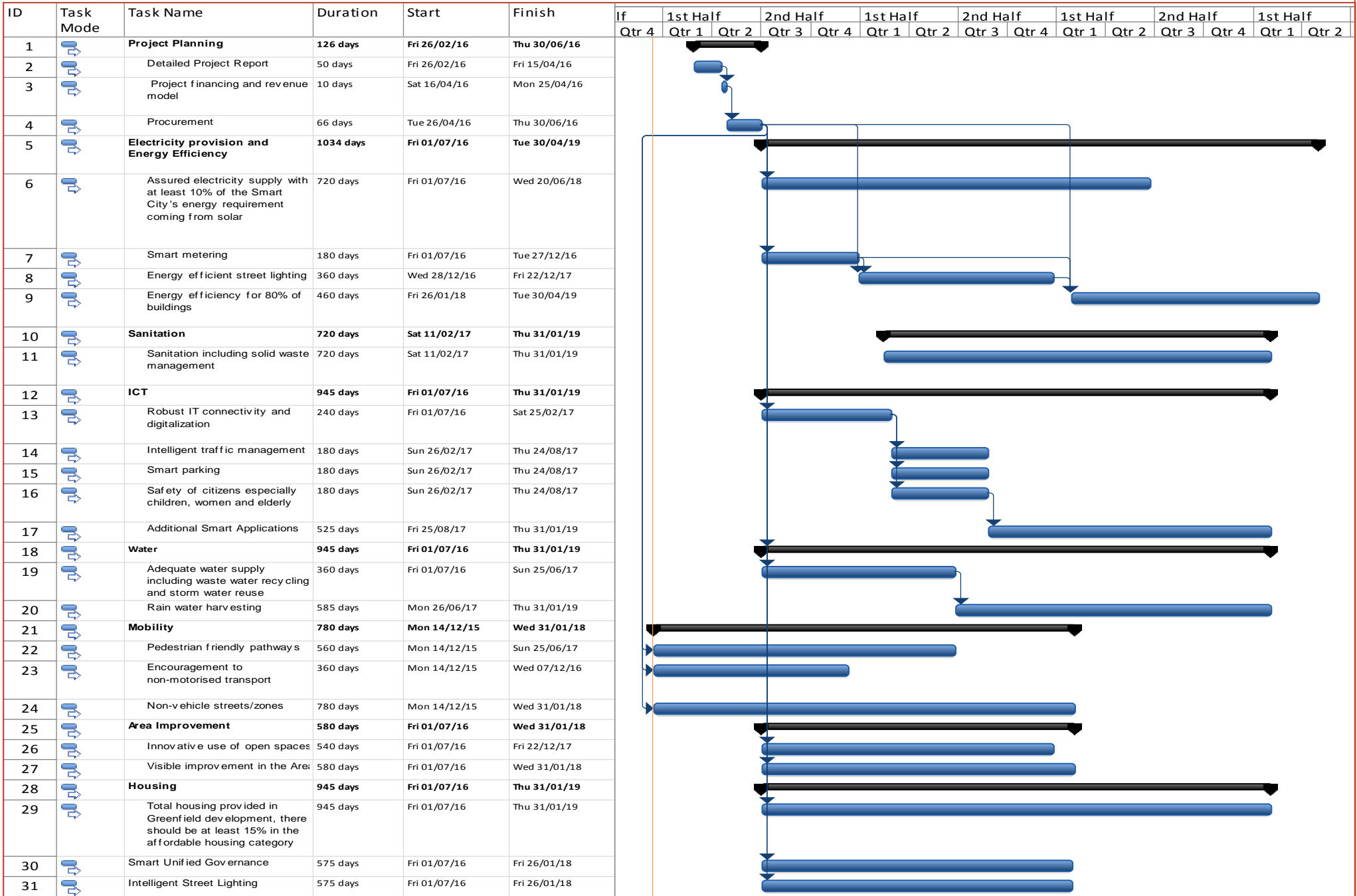
**Monetisation:**

- Revenue from mobile service providers
- Parking management
- AMR
- Traffic management
- Advertisement

**Zero call drop assurance across Bhopals' Municipal limit (Successfully implemented in Middle East and Europe)**

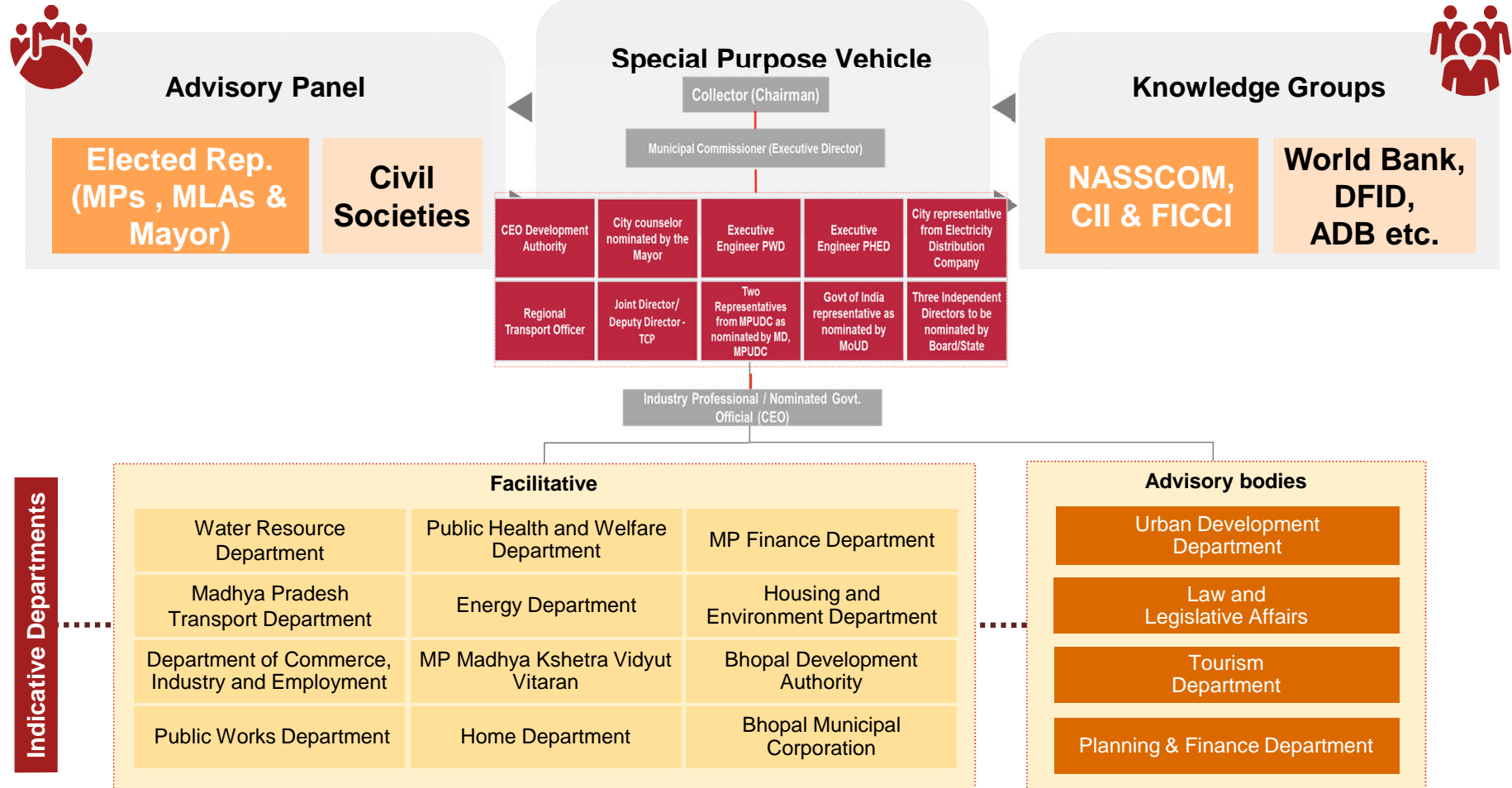


# PERT Chart





# Institutional arrangement and relationship between various government departments (Convergence)



MOU Signing With MP Metro Rail



SPV Chairman



MOU Signing with BDA

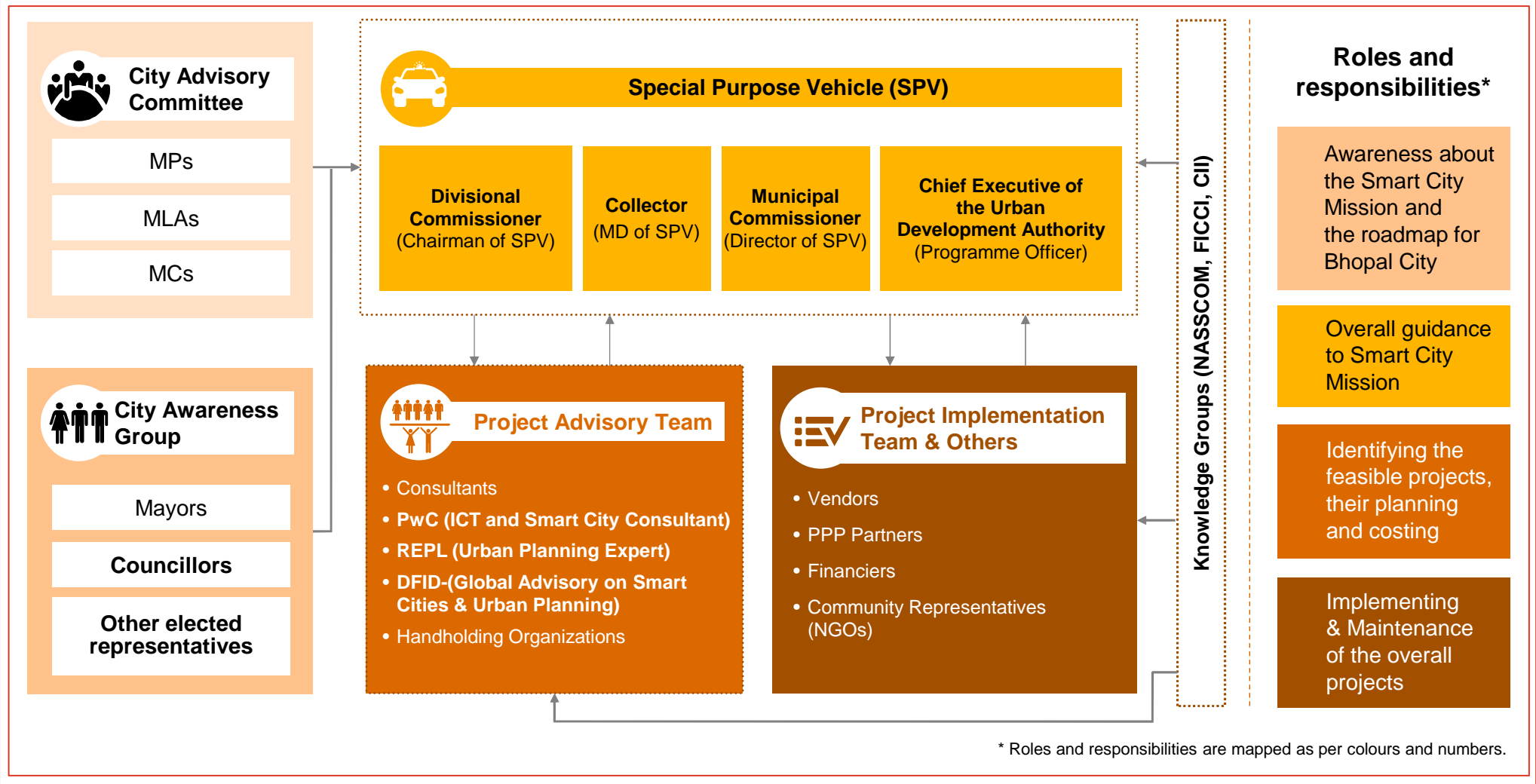


# Stakeholder Roles

## Organogram

- An organogram showing the relationships :
- MPs, MLAs, MLCs
- Mayors, Councilors, other elected representatives
- Divisional Commissioner
- Collector
- Municipal Commissioner
- Chief Executive of the Urban Development Authority/Parastatal

- Consultant (Select from empaneled list)
- Handholding Organization (Select from Following list: World Bank, ADB, JICA, USTDA, AFD, KFW, DFID, UN Habitat, UNIDO, Other)
- Vendors, PPP Partners, Financiers
- Others, (e.g.. Community representatives) as appropriate to your city





# Cost Summary Sheet

FINANCIALS		(INR Crores)	FINANCING ASSUMPTIONS		(INR Crores)
<b>Cost Projections</b>			<b>Sources of Funds</b>		
<b>Development Costs</b>			GoI Grant considered as BMC Equity		488.0
<b>Development of Land &amp; public utilities (Non saleable)</b>		<b>607.3</b>	State Equity Inflow for SMART CITY		488.0
<b>Trunk Infrastructure cost</b>		<b>541.2</b>	Commercial Loan		21.1
<b>Development of Govt., Affordable, EWS and LIG housing</b>		<b>922.4</b>	Convergence Fund and BMC IT Budget		486.0
<b>Operation and Maintenance cost</b>		<b>111.4</b>	<b>Terms for the Commercial Loan</b>		
<b>Administration costs, Marketing expenses, Approval Cost and PMC Fee</b>		<b>382.5</b>	Principal		21.1
<b>Total Development, Operations and Maintenance Costs of ABD only</b>		<b>2565.2</b>	Tenure of loan (in years)		5
<b>Development, Operations and Maintenance of Pan city solutions</b>		<b>875.7</b>	Repayment mode		Annual
<b>Total Development, Operations and Maintenance Costs (including Pan City solutions)</b>		<b>3440.9</b>	Interest rate (annual compounding)		12%
<b>Revenue Projections</b>			Annual Amount Payable		5.8
<b>Sale of land</b>		<b>5,445.7</b>	Average DSCR		102.6
<b>Maintenance charges</b>		<b>122.5</b>	Minimum DSCR		45.81
<b>Total Revenue from ABD only</b>		<b>5,578.2</b>	<b>COST ASSUMPTIONS</b>		<b>Unit</b>
<b>Revenue from Pan City Solutions</b>		<b>928.0</b>	Cost of development of public utilities (Non saleable)		1,750 INR/sqft
<b>Revenue from Smart City Advisory Services</b>		<b>65.0</b>	Annual increase in development cost		5% %
<b>Revenue from Smart City Knowledge Partner Services</b>		<b>32.0</b>	Cost of Development of Government Housing		2400 INR/sqft
<b>Property Tax</b>		<b>41.0</b>	Annual increase in development cost		5% %
<b>Total Revenue</b>		<b>6,644.2</b>	Cost of development of affordable housing		2,400 INR/sqft
<b>PROJECT IRR</b>		<b>0.9%</b>	Annual increase in development cost		5% %
<b>EQUITY IRR</b>		<b>13.8%</b>	Total land available		,72,52,304 sqft
			FSI		2.5
			Total FSI area		1,81,30,761 sqft
			<b>Total Area to be developed</b>		
			PHASE - I		1,28,89,853 sqft
			PHASE - II		,83,81,429 sqft
			PHASE - III		,21,71,475 sqft
			<b>REVENUE ASSUMPTIONS</b>		<b>Unit</b>
			Lease Price of Residential land		
			Residential FSI		1,750 INR/sqft
			Loading for Residential land		20% %
			Annual increase in lease price		5% %
			Lease price of Commercial land		
			Retail		3,250 INR/sqft
			Office space		2,000 INR/sqft
			Loading for Commercial land		20% %
			Annual increase in lease price		5% %
			Average Lease price of public utilities land		1,430 INR/sqft
			Loading for ATMs		40% %
			Annual increase in lease price		3% %

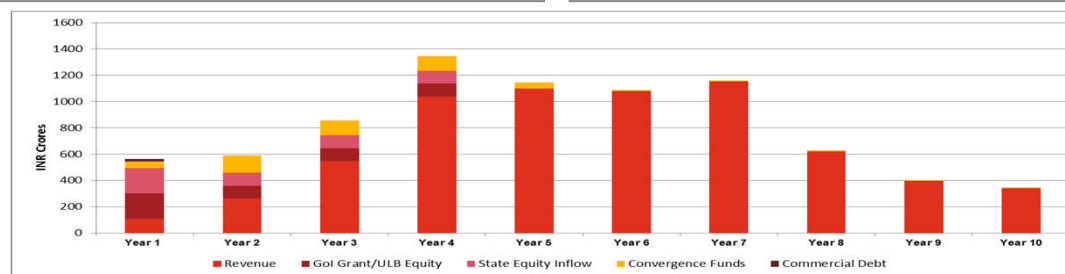
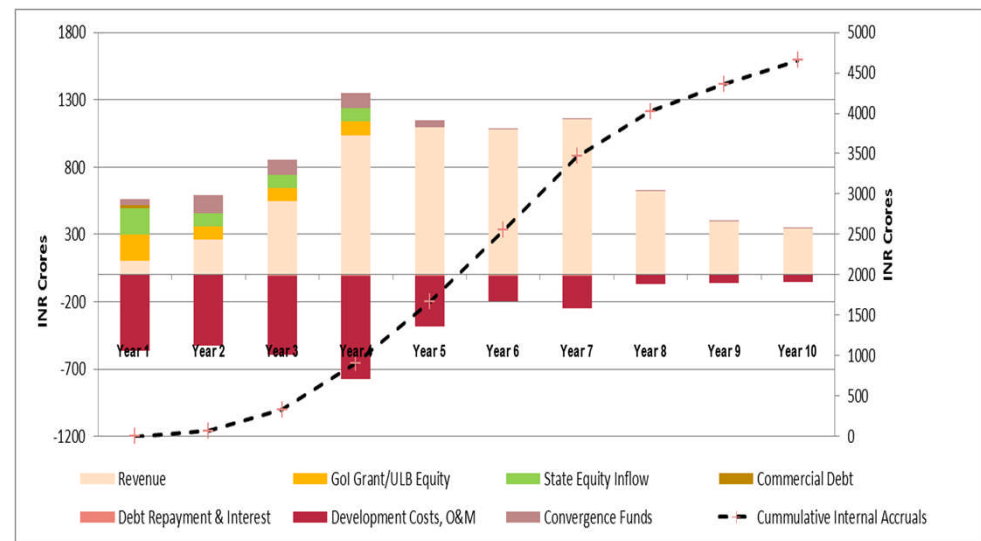
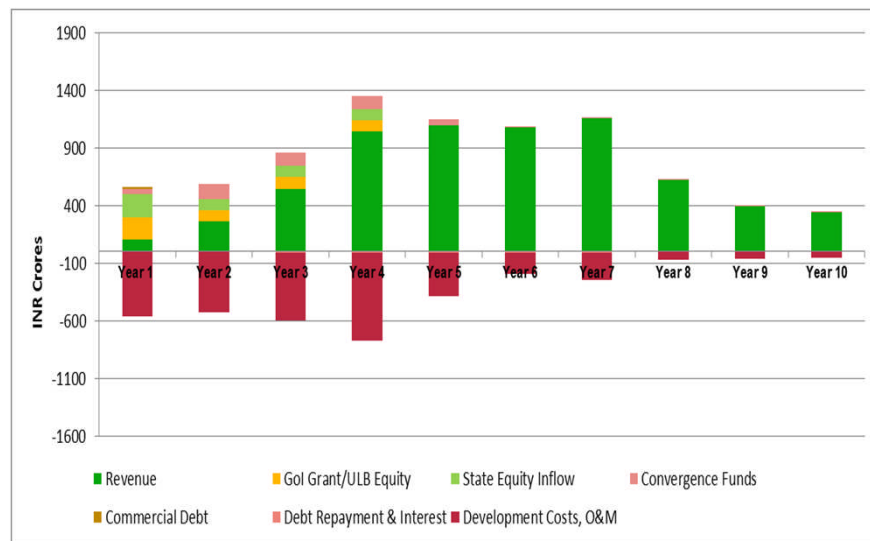
# Land Use summary

Type of Property	Area (Sq. ft)	Number of Units	Area of Each Unit	Phase I	Phase II	Phase III
<b>RESIDENTIAL (70% of available FSI)</b>	<b>0 sqft.</b>			<b>7,296,523 sqft.</b>	<b>4,381,018 sqft.</b>	<b>1,014,005 sqft.</b>
Government Apartments						
• Type C	105,000 sqft.	35 no.	3,000 sqft.	105,000 sqft.		
• Type D	125,000 sqft.	50 no.	2,500 sqft.	125,000 sqft.		
• Type E	600,000 sqft.	300 no.	2,000 sqft.	600,000 sqft.		
• Type F	550,000 sqft.	500 no.	1,100 sqft.	550,000 sqft.		
• Type G	200,000 sqft.	250 no.	800 sqft.	200,000 sqft.		
• Type H	200,000 sqft.	400 no.	500 sqft.	200,000 sqft.		
• Type I	121,500 sqft.	300 no.	405 sqft.	121,500 sqft.		
Affordable Housing	650,000 sqft.	1,000 no.	650 sqft.	325,000 sqft.	325,000 sqft.	
Residential Apartments						
• Type I	1,995,000 sqft.	1,900 no.	1,050 sqft.	997,500 sqft.	798,000 sqft.	199,500 sqft.
• Type II	2,139,750 sqft.	1,585 no.	1,350 sqft.	1,069,875 sqft.	855,900 sqft.	213,975 sqft.
• Type III	2,085,625 sqft.	1,175 no.	1,775 sqft.	1,042,813 sqft.	834,250 sqft.	208,563 sqft.
• Type IV	1,980,000 sqft.	825 no.	2,400 sqft.	990,000 sqft.	792,000 sqft.	198,000 sqft.
• Type V	1,604,670 sqft.	601 no.	2,670 sqft.	802,335 sqft.	641,868 sqft.	160,467 sqft.
• Type VI	335,000 sqft.	100 no.	3,350 sqft.	167,500 sqft.	134,000 sqft.	33,500 sqft.
EWS Housing	208,800 sqft.	720 no.	290 sqft.	104,400 sqft.	104,400 sqft.	
LIG Housing	309,600 sqft.	720 no.	430 sqft.	154,800 sqft.	154,800 sqft.	
<b>COMMERCIAL (30% of available FSI)</b>	<b>5,439,278 sqft.</b>			<b>2,719,639 sqft.</b>	<b>2,175,711 sqft.</b>	<b>543,928 sqft.</b>
Retail Use (60% of Commercial FSI)	3,263,567 sqft.			1,631,783 sqft.	1,305,427 sqft.	326,357 sqft.
Office Space (40% of Commercial FSI)	2,175,711 sqft.			1,087,856 sqft.	870,284 sqft.	217,571 sqft.
<b>PUBLIC FACILITIES</b>	<b>5,311,984 sqft.</b>			<b>2,873,716 sqft.</b>	<b>1,824,720 sqft.</b>	<b>613,548 sqft.</b>
1. Educational						
a. Nursery School (FSI Sale)	710,424 sqft.	11 no.	64,584 sqft.	322,920 sqft.	258,336 sqft.	129,168 sqft.
b. Primary School (FSI Sale)	710,424 sqft.	11 no.	64,584 sqft.	322,920 sqft.	258,336 sqft.	129,168 sqft.
c. High School (FSI Sale)	645,840 sqft.	3 no.	215,280 sqft.	215,280 sqft.	215,280 sqft.	215,280 sqft.
2. Medical Facility						
a. Health Centre	322,920 sqft.	3 no.	107,640 sqft.	107,640 sqft.	107,640 sqft.	107,640 sqft.
3. Other Facilities						
a. Sub Post Office	5,380 sqft.	5 no.	1,076 sqft.	3,228 sqft.	2,152 sqft.	
b. Post and Telegraph Office cum Delivery and Booking including Telephone exchange of 1000 lines	538,200 sqft.	5 no.	107,640 sqft.	322,920 sqft.	215,280 sqft.	
c. Police Station with staff quarters	86,112 sqft.	1 no.	86,112 sqft.	86,112 sqft.		
d. Police Post with staff quarters	86,112 sqft.	2 no.	43,056 sqft.	43,056 sqft.	43,056 sqft.	
e. Fire Station with staff quarters	86,112 sqft.	2 no.	43,056 sqft.	43,056 sqft.	43,056 sqft.	
f. Multi Level Car Park	1,800,000 sqft.	3 no.	600,000 sqft.	1,200,000 sqft.	600,000 sqft.	
g. Sports Facility	100,000 sqft.	1 no.	100,000 sqft.	100,000 sqft.		
h. Command Centre	20,000 sqft.	1 no.	20,000 sqft.	20,000 sqft.		
i. Reservation Centre	4,000 sqft.	2 no.	2,000 sqft.	2,000 sqft.	2,000 sqft.	
j. Facility Management	25,000 sqft.	5 no.	5,000 sqft.	15,000 sqft.	10,000 sqft.	
k. ATM	10,000 sqft.	20 no.	500 sqft.	5,000 sqft.	5,000 sqft.	
4. Social & Cultural Facilities						
a. Community Hall and Library	96,876 sqft.	3 no.	32,292 sqft.	32,292 sqft.	32,292 sqft.	32,292 sqft.
b. Cinemas (FSI Sale)	64,584 sqft.	2 no.	32,292 sqft.	32,292 sqft.	32,292 sqft.	



# Financing Timeline

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
<b>Inflow</b>										
Revenue	107	261	547	1038	1098	1080	1154	621	396	341
Gol Grant/ULB Equity	194	98	98	98	0	0	0	0	0	0
State Equity Inflow	194	98	98	98	0	0	0	0	0	0
Convergence Funds	48.6	133.8	112.5	112.5	48.6	6	6	6	6	6
Commercial Debt	21	0	0	0	0	0	0	0	0	0
<b>Outflow</b>										
Debt Repayment & Interest	-3	-3	-6	-6	-6	-6	-6	0	0	0
Development Costs, O&M	-563	-521	-588	-766	-380	-191	-242	-72	-60	-57
<b>Cumulative Internal Accruals</b>	<b>0</b>	<b>67</b>	<b>329</b>	<b>904</b>	<b>1665</b>	<b>2554</b>	<b>3465</b>	<b>4020</b>	<b>4362</b>	<b>4652</b>





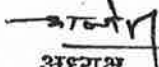
नगर पालिक निगम, भोपाल  
पृष्ठ क्रमांक

विषय :- स्मार्ट सिटी परियोजना का प्रस्ताव तथा  
Special Purpose Vehicle (SPV) के गठन  
की स्वीकृति बावत्।

विभाग.....  
विभागाध्यक्ष.....  
संबंधित सहायक.....

कार्यालय नगर पालिक निगम भोपाल  
मेयर इन कौंसिल स.क्र. 02 दि. 08/12/15

आयुक्त की अनुशंसा के आधार पर भोपाल के लिए स्मार्ट सिटी परियोजना का प्रस्ताव तथा Special Purpose Vehicle (SPV) के गठन का प्रस्ताव अनुशंसा सहित निगम परिषद् की ओर स्वीकृति हेतु प्रेषित।  
निगम परिषद्

  
अध्यक्ष

मेयर इन कौंसिल  
नगर निगम, भोपाल

नगर पालिक निगम, भोपाल

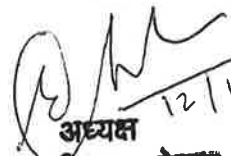
परिषद् संकल्प क्रमांक-01, दिनांक 12.12.2015

शहरी विकास मंत्रालय भारत सरकार द्वारा राज्य स्तरीय उच्च स्तरीय समिति की अनुशंसा के आधार पर भोपाल नगर को स्मार्ट सिटी परियोजना के प्रथम चरण में चयनित किया गया है, जिसके संबंध में पूर्व में परिषद् द्वारा संकल्प क्रमांक 01, दिनांक 11.07.2015 द्वारा प्रस्ताव प्रेषित किया गया था।

- स्मार्ट सिटी परियोजना के प्रतिस्पर्धा के द्वितीय चरण हेतु आयुक्त द्वारा विस्तृत स्मार्ट सिटी परियोजना का वित्तीय प्रावधानों को सम्मिलित करते हुए प्रस्ताव तथा Special Purpose Vehicle (SPV) के गठन का प्रस्ताव परिषद् के समक्ष प्रस्तुत किया गया है। प्रस्ताव पर चर्चा की गई।
- चर्चा उपरांत स्मार्ट सिटी परियोजना के द्वितीय चरण हेतु आयुक्त द्वारा स्मार्ट सिटी परियोजना का वित्तीय प्रावधानों को सम्मिलित करते हुए प्रस्तुत प्रस्ताव को भारत सरकार को प्रेषित किये जाने तथा भारत सरकार के दिशा निर्देशों के अनुरूप योजना के क्रियान्वयन हेतु Special Purpose Vehicle (SPV) के गठन की स्वीकृति प्रदान की जाती है।

उक्त प्रस्ताव बहुमत से पारित किया जाता है।

आयुक्त

  
अध्यक्ष  
नगर निगम, भोपाल  
12/12/2015



**MEMORANDUM OF UNDERSTANDING**

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Madhya Pradesh Public Works Department (MPPWD) having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

1. **OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.
2. **AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:
  - 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
  - 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic areas proposals and pan-city proposals as per SCP.
  - 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
  - 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.



2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire (five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.




5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.


6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

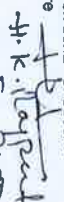


7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.


8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name **TEJASWI S. NAZE**  
Title **CONV. SALES MGR - EMC**  
Date **14/12/15**  
Witness  
1.   
2.   
**A. Nanda**  
**CE, EMC**

  
**Anubhav Tsankaj**

For and on behalf of Second Part  
Signature   
Name **H.K. Kapoor**  
Title **EMC Puro for 1 Bhopal**  
Date  
Witness  
1.   
2.   
**H.K. Kapoor**

  
**H.K. Kapoor**



## MEMORANDUM OF UNDERSTANDING

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AND

Madhya Pradesh Housing Board having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

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AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

**1. OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

**2. AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire (five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.

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7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.

8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature *[Signature]*  
Name **(TERASWI SAKMEL)**  
Title **COMMISSIONER, BMC**  
Date **14/12/15**  
Witness  
1. *[Signature]*  
2. *[Signature]*

*A. K. Indarwati*  
Eg. BMC

*[Signature]*  
**(HINDIYAT TUNING)**

For and on behalf of Second Part  
Signature *[Signature]*  
Name **M. B. S. S. S.**  
Title **M. B. S. S. S.**  
Date **14.12.15**  
Witness  
1. **OPHIDB Skript**  
2. *[Signature]*

*[Signature]*  
**C. S. K. S. S. S.**  
**M. P. H. I. D. B. Skript**

**TERASWI SAKMEL**  
**COMMISSIONER**  
**BUMAH**



## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Capital Project Administration (CPA) having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MoUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and Bhopal Municipal Corporation has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation.

1. **OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

2. **AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1 Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2 The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3 The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4 The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire 5(ive) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.


5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.


6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.

8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name **TEJSWINI S. NAIR**  
Title **COMMISSIONER, SMC**  
Date **14/12/15**  
Witness  
1.  
2.

For and on behalf of Second Part  
Signature   
Name **(ARAV SHARMA)**  
Title **EXECUTIVE ENGINEER, CPA**  
Date **14/12/15**  
Witness  
1.  
2.

  
(GAURAV JAIN)



## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Office of Additional District Magistrate having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MOUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation.

1. **OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

2. **AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire five(5) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.

5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.

6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.

8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part

Signature *[Signature]*  
Name (TEJASWI SHARMA)  
Title COMMISSIONER, SMC  
Date 14/12/15  
Witness  
1. *[Signature]*  
2. *[Signature]*

For and on behalf of Second Part

Signature *[Signature]*  
Name VIKAS MISRA  
Title ADD. DIR. MGR. (S)  
Date 14.12.15  
Witness  
1  
2

*[Signature]*  
ANDREAS WANSI

*[Signature]*  
(MURIEL TONY)

*[Signature]*  
(LAWAL)



## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Bhopal Development Authority (BDA) having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MOUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

**1. OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

**2. AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire (five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.



5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.


6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.

8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name TEJASWINI SRINIVAS  
Title COMMISSIONER, SMC  
Date 14/12/15  
Witness  
1. Ch. Chandramouli Shetty  
2.   
(MINE DEPT/INTEGRITY)

For and on behalf of Second Part  
Signature   
Name NIERAJ VASHISHTHA  
Title CEO BDA, 14<sup>th</sup> DEC 2015  
Date  
Witness  
1. Armit Gai buye Jyoti  
2. Kamal Nagan.

## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHO PAL on this 14 Day of DECEMBER 2015 between BHO PAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHO PAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Madhya Pradesh Madhya Kshetra Vidut Vitran Corporation Ltd (MPMKVVCL) having its office at BHO PAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MOUD") has launched Smart Cities Mission ("Mission") and shortlisted BHO PAL city under stage-1 of smart cities challenge as potential smart city and Bhopal Municipal Corporation has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHO PAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

**1. OBJECTIVE OF MEMORANDUM OF UNDERSTANDING -** The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHO PAL under Government of India's Smart City Mission.

**2. AREAS OF COORDINATION AND COLLABORATION -** The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.



2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire 5(five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.


5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.

6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.


8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name (TEJASWINI S. NAIR)  
Title COMMISSIONER, SMC  
Date 14/12/15  
Witness  
1.  
2.

For and on behalf of Second Part  
Signature   
Name A.K. KHATRI  
Title S.E. - M/TOM KULC  
Date 14/12/15  
Witness  
1.  
2.

①   
Chandanadas Swamy

  
ANUDEEP GARSIA

②   
Anurag  
(HIGHLIGHT TEMPLATES)

  
Anoop Jain  
(Anoop Jainphoria)

## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHVARDHAN COMPLEX, MATIA MANDIR BHOPAL (herein after referred to as the 'Authority') which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Madhya Pradesh Metro Rail Corporation Ltd., having its office at BHOPAL (herein after referred to as the 'Agency') which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban, Development ("MOUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

**1. OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

**2. AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire 5(five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.


5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.


6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.

7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.


8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name (CECASY BELL)  
Title COMMISSIONER, SMC  
Date 14/12/15  
Witness  
1.  
2.

For and on behalf of Second Part  
Signature   
Name KANDI CHARITA NAYAN  
Title AMD MGR/CL  
Date 14/12/15  
Witness  
1.  
2.

  
Cecy Bell

  
KANDI CHARITA NAYAN  
AMD MGR/CL

  
KANDI CHARITA NAYAN  
(AMD MGR/CL)

  
Cecy Bell



## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Madhya Pradesh Amdkavak Kendra Vikas Nigam (MPAKVN) having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MOUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

- 1. OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.
- 2. AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:
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  - 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
  - 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

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BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name **TERASWI S. NASK**  
Title  
Date **14/12/15**  
Witness **COMMISSIONER, BMC**  
1.  
2. 

For and on behalf of Second Part  
Signature   
Name **PICHAYOO**  
Title **General Manager**  
Date **14/12/15**  
Witness **ADD: 1st floor 10/11/15, Sengornswarit, Sripakdi**  
1. **Head Project Charge**  
2. **BE MOU/EE N Bhatia**



## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the "Authority") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Bhopal City Link Ltd. (BCLL) having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties"

WHEREAS Ministry of Urban Development ("MoUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

1. **OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.

2. **AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:

- 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
- 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
- 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
- 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.



2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

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
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6. **ASSIGNMENT** - Neither Party shall transfer or assign this Agreement, or rights or obligations arising hereunder, either wholly or in part, to any third party, unless otherwise defined in this MOU or agreed in written by both Parties.




7. **COSTS OF THE MOU** - Each Party shall bear the respective costs of carrying out the obligations under this MOU.



8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name **TEJASWINI S. NAIR**  
Title **COMMISSIONER, BMC**  
Date **14/12/15**  
Witness  
1.   
2. 

  
(MAYOR'S OFFICE)  
  
(MAYOR)

For and on behalf of Second Part  
Signature   
Name **Chandramauli Shukla**  
Title **Chief Executive Officer**  
Date **14.12.2015**  
Witness  
1.   
2. 

①   
ANDULGERS CHARS I  
②   
(B. Kunt Gajdhire)

## MEMORANDUM OF UNDERSTANDING

This Agreement is made at BHOPAL, on this 14 Day of DECEMBER 2015 between BHOPAL MUNICIPAL CORPORATION, having its office at HARSHWARDHAN COMPLEX, MATA MANDIR BHOPAL (herein after referred to as the 'Authority') which expression shall where the content so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the first part of agreement.

AND

Madhya Pradesh Town & Country Planning (T&CP) having its office at BHOPAL (herein after referred to as the 'Agency') which expression shall where the content so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MoUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

AND WHEREAS the Parties have had discussions on BHOPAL SCP including proposals for area based development for Strategic Area and pan-city solutions and have reached an understanding on the following roles and responsibilities pertaining to smart city plan implementation:

1. **OBJECTIVE OF MEMORANDUM OF UNDERSTANDING** - The objective of this Memorandum of Understanding (MOU) is to define areas of coordination and collaboration between the Authority and the Agency for planning, design, financing, implementation and operations and maintenance of upcoming smart city projects in BHOPAL under Government of India's Smart City Mission.
2. **AREAS OF COORDINATION AND COLLABORATION** - The areas of coordination and collaboration between the Authority and the Agency will be as following:
  - 2.1. Parties will coordinate in areas related to planning, design, implementation, operations and maintenance, monitoring and coordination for Strategic Area as per SCP.
  - 2.2. The Agency will provide necessary support to the Authority for undertaking project implementation for strategic area proposals and pan-city proposals as per SCP.
  - 2.3. The Agency will endeavour to prioritize its development projects in line with SCP and to converge resources to the Authority for implementation of smart city plan components which fall under various policies, schemes and budgets.
  - 2.4. The Agency will fast track any applicable approvals, licenses, and permits for implementation of smart city projects.

2.5. Parties will consult each other and exchange necessary information for coordination and collaboration purpose.

3. **NON-EXCLUSIVITY** - The relationship of the parties under this MOU shall be non-exclusive and both parties, including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind. However, when entering into a particular agreement related to Strategic Area, the participants may agree to limit each party's right to collaborate with others on that subject.

4. **TERMS AND TERMINATION** - This MOU, unless extended by mutual written agreement of the parties, shall expire 5(five) years after the effective date specified in the opening paragraph. This MOU may be amended, extended or terminated by mutual written agreement of the parties at any time. Either party shall have the right to unilaterally terminate this MOU upon 60 days prior written notice to the other party.

5. **RELATIONSHIP** - Nothing in this MOU shall be construed to make either party a partner, an agent or legal representative of the other for any purpose.

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8. **SIGNED IN DUPLICATE** - This MOU is executed in duplicate with each copy being an official version of the Agreement and having equal legal validity.

BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature: *[Signature]*  
Name: *TEJASWI S. NAIK*  
Title: *COMMISSIONER, BMC*  
Date: *14/12/15*  
Witness:  
1. *[Signature]*  
2. *[Signature]*

*[Signature]*  
(HONGKAITRAMPZ)

For and on behalf of Second Part  
Signature: *[Signature]*  
Name: *Dr. Anurag Gadhing*  
Title: *Dr. Anurag Gadhing, F&C.P.*  
Date: *14/12/15*  
Witness:  
1. *[Signature]*  
2. *[Signature]*

Witness:

*[Signature]*  
*[Signature]*

*[Signature]*  
ANURAG GADHING  
WAS 21



## MEMORANDUM OF UNDERSTANDING

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AND

Madhya Pradesh Pollution Control Board (MP PCB) having its office at BHOPAL (herein after referred to as the 'Agency') which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

Hereafter referred to collectively as "Parties".

WHEREAS Ministry of Urban Development ("MUD") has launched Smart Cities Mission ("Mission") and shortlisted BHOPAL city under stage-1 of smart cities challenge as potential smart city and [Name of Municipal Corporation] has prepared a Smart City Plan ("SCP") for stage-2 of smart cities challenge.

AND WHEREAS the Authority has passed council resolution no. \_\_\_\_\_ dated \_\_\_\_\_ to incorporate a Special Purpose Vehicle ("SPV") for planning, designing, financing, implementation and operations and maintenance of smart city projects.

AND WHEREAS the Authority will act as nodal organization for coordination on all matters relating to SCP and its implementation till formation of SPV, and after formation of SPV, all rights and obligations of the Authority related to SCP will be transferred to the SPV.

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

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BY SIGNING BELOW, the parties, acting by their duly authorized officers, have caused this Memorandum of Understanding to be executed, effective as of the day and year first above written.

For and on behalf of First Part  
Signature   
Name **TESAWI S. NARE**  
Title **COMM. SECRETARY, SMC**  
Date **14/12/15**  
Witness  
1. **Cherwin S. Sique**  
2. 

For and on behalf of Second Part  
Signature   
Name **P.S. Dumlao**  
Title **Regional Officer**  
Date **14.12.2015**  
Witness  
1. **M.V. Polillo**  
2. **REV. M. J. ...**

  
**Cesar S. Nared**

  
**P.S. Dumlao**  
**(Regional Officer)**

  
**AND ELIS**  
**CHIEF**

## MEMORANDUM OF UNDERSTANDING

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AND

Department of Technical Education having its office at BHOPAL (herein after referred to as the 'Agency') which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

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For and on behalf of First Part  
Signature *[Signature]*  
Name **TERASAWI S. NAKK**  
Title **Commissioner, SMC**  
Date **14/12/15**  
Witness  
1.  
2.

For and on behalf of Second Part  
Signature *[Signature]*  
Name **D.K. GARDNER**  
Title **Principal**  
Date **12/12/15**  
Witness  
1. **Gov. Sps. IT / BPL.**  
2.

① *[Signature]*  
**Chandra W. Subbanna**

*[Signature]*  
**(Lawyer)**

② *[Signature]*  
**ATC (WILBERT TANG)**

*[Signature]*  
**ANDREAS WARSIT**

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Department of Information Technology, Government of Madhya Pradesh having its office at BHOPAL (herein after referred to as the "Agency") which expression shall where the context so admit include its heirs, Assigns, Executors, Successors, Legal Representatives, Administrators etc. of the second part of agreement.

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
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For and on behalf of First Part

Signature   
Name (TEJASWI S. NAIR)  
Title COMMISSIONER, BMC  
Date 14/12/15  
Witness

1.   
2. A. K. Wadhwa  
BMC CB.

  
d.c.  
(CHARSHIT TWARZI)

For and on behalf of Second Part

Signature   
Name  
Title Ch. V. V. V.  
Date 14/12/15  
Witness

1.   
2.

14/12/15 (Ch. V. V. V.)





**MADHYA PRADESH URBAN INFRASTRUCTURE INVESTMENT  
PROGRAMME (MPUIIP)**

**Handbook of Smart Solutions**

*Ready Reckoner for Preparation of Smart City Proposals in Madhya Pradesh*

September 2015