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Annexure 2										
	Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment of the city (for Pan-City Solution) 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	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
1	Citizen participation	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)	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	Developed online public grievances section on Nagar Nigam website (http://www.nagarnigamghaziabad.in/) •Public views, opinions, updated and feedbacks are welcome via e-mail and mobile app •Toll-free telephone numbers are provided to citizens which aids in Citizen-to-administration communication through development of citizen-centric call center •Regular citizen engagement through: Social Media (Facebook, Twitter) •Municipal commissioner has monthly interactions with various groups of stakeholders of the city	City aspires to involve citizens in decision making at every step through participation of different income & age groups, genders and associations. Interaction should happen through more engagement initiatives. Leveraging partnership with players like local circles that has communities of 15000 people in Ghaziabad	Use e-governance and other IT tools and application in order to involve Citizen in decision making and making them responsible & accountable. Create a platform to crowd source ideas and problems citizens may have through app, portal, etc Create a vision community with maximum Citizen participation
2	Identity and culture	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)	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 2	Referred to as the "Gateway of UP" and also enjoys proximity to the National capital. The city has seen rule of Mughals to Marathas to Colonial rule has a lot to exhibit and showcase when it comes to cultural values and popular beliefs.	City wants to make every effort to keep its rich heritage and cultural values intact to maintain its unique identity.	To identify places of historical / heritage importance. Improving the social, cultural and economic ecosystems by augmenting necessary infrastructure with the objective of conserving the rich cultural heritage and enabling better facilities for tourists. Rejuvenation of existing parks, ponds, pathways and landscaping. New exhibition Halls and shops will be used to promote local art and handicrafts and other products. Development of Heritage Parks.
3	Economy and employment	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 & 3.1.7 & 6.2)	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 2	There are 126 large and medium industries in Ghaziabad district with an approximate investment of Rs. 927.70 crores giving employment to 26465 persons. Weaving is a traditional handicraft to a large part of the rural sector of the Ghaziabad. Percentage of total workers (Both Main and Marginal) is 35.02% out of which 84.07% are main worker and rest are marginal.	The city aims to provide employment opportunity to all sections of the society also focusing on vocational training of semi skilled and unskilled labour. Explore initiatives to create Equitable Job Creation in the city (Job creation for all wage levels, diversity of employment opportunities and Skill Development) To build a highly skilled and flexible workforce. To concentrate on retaining and expanding existing local businesses	Due to transport oriented development and continuous electricity and water supply, industries will be driven towards the city due to its advantage of vicinity to national capital. For unskilled workers various vocational Institutes will be developed in the city. To facilitate functioning of MSME's through simplified legal and regulatory frameworks, good governance, abundant and accessible finance, suitable infrastructure, supportive education, sufficiently healthy and flexibly skilled labour as well as capable public and private institutions. To promote and support new startups and businesses by starting an Incubation center which will provide advice, equipment,, or other facilities to those intending to start a business.

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4 Education	A Smart City offers schooling and educational opportunities for all children in the city (Guideline 2.5.10)	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 3	The city has one of the best educational facilities in the state. Prestigious institute like Institute of Management Technology are present in the city. The city has literacy rate of 74.4%(Census 2011). There are 156 Primary, 53 Secondary, 23 Senior Secondary Schools, 24 management institute, 12 engineering colleges and 6 medical colleges in the city.	Ensuring provision of Technology enabled Modern Education accessible to all section of the society* Enabling assessment and monitoring of all educational facilities to improve Primary and Secondary Education	1. Ensuring adequate teacher student ratio through a government mandate. 2. Ensuring good coaching facilities, encouraging best in the fields to open centers in Ghaziabad 3. Providing state of art physical and IT infrastructure
5 Health	A Smart City provides access to healthcare for all its citizens. (Guideline 2.5.10)	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 2	City has 17 hospitals and dispensaries in which 367 beds are available and 5 doctors are there , according to these figures there is 1 bed for a population of 3000 and 1 doctor for a population of 22000but according to code there is requirement of 2300 beds and 220 doctors.	Adequate and accessible Health Facility for all. Ensure responsive management of Medical Emergencies Safeguard citizens from Health Risks especially for vulnerable citizens Periodic Monitoring of Hospital Data-base on ailments and diseases	Connectivity across Health centers and hospitals with database of citizens Mobile healthcare vans. A emergency response system that connects with ambulance services.
6 Mixed use	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)	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 2	The current Master Plan for Ghaziabad - 2021 that describes the comprehensive position of current land use distribution and also recommends proposed land use The city administration is moving from regimented to flexible and floating land use concept IA proposal of charging an impact fee in case there is a construction against the government rules id made.	Achieve Increased density with maximum and optimum utilization of land resource based upon its location and demand New formal large scale development to ensure dense and compact development with good pedestrian and Public Transport accessibility and mix of use.	Promotion of high density development near transit centers/ transit oriented development. Regular interventions to promote mixed use developments. Promotion of Mixed Income Commercial and Residential Development

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7 Compact	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)	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	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	Area adjacent to Delhi and along the existing metro rail corridor shows high rise high density development. The old city area is also congested and shows high density development.	The City aims to develop along the line of transit oriented development where the MRTS and RRTS will be the backbone for the city development structure. Nodes created through these two rapid transit will have dense and high rise development. NMT and Pedestrian movement will be on priority.	1. TOD node along the RRTS corridor 2. High-rise high-density development along the Metro corridor 3. Pedestrian and NMT friendly road sections. 4. Bi-Cycle Docking Station with easy rent out facility to promote cycling. 5. E-Rickshaw station at walkable distance from the residential area and also near the commercial areas.
8 Public open spaces	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 & 6.2)	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	Per Capita green space- (Benchmark laid down by the Ministry of Environment is 15%) No. of parks in the city- 100-101 Condition of those parks- Poor, Major problems- not properly maintained, Lack child friendly infrastructure Accessibility- Good	The city aims to provide accessibility to parks with child safety facilities to all residents at a distance of 10-15 minutes.	1.Rejuvenation of public parks 2.Promoting use of open spaces.
9 Housing and inclusiveness	A Smart City has sufficient housing for all income groups and promotes integration among social groups. (Guidelines 3.1.2)	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 3	No. of people living in slums- 333962 (7.13% of total population lives in slums) Total Population of all who lived without roof at the time of Census 2011 numbers to 12,328 (0.26% of the total population) Any government initiatives- Housing pattern of the city- Ghaziabad caters primarily to the mid-segment and affordable housing segments. It is home to established housing clusters such as Kaushambi, Vaishali and Indirapuram while upcoming residential corridors include Raj Nagar Extension and developments along the NH-24 beyond Indirapuram, including the Crossings Republic township. Lack of land options has restricted new launches in the Kaushambi, Vaishali and Indirapuram clusters. Recent	City wishes to satisfy housing requirements of all income groups. The housing structure should be planned and inclusive of all facilities.	1. Samajwadi Aasara Yojna (UP Government initiative) Affordable houses ; 2000 houses to be constructed by GDA this year (Eg. Koyal Enclave awas yojna, 504 flats to be allotted) 2.GDA Madhuban Bapudham Scheme 846 Draw Result on 2 December. 3.The housing department has also approved two projects of private developers which would construct the 1,700 in Ghaziabad 4.Redevlopment of affordable houses in the area 5. Redevelopment of slums 6. Ghaziabad aims to be a slum free city by 2027.

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10 Transport	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 & 6.2)	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. That 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 1	Private vehicle ownership Public transport options and conditions Average traffic speed- 25-30 kms per hour and during peak time 15-25Kms per hour. The traffic flow in Ghaziabad is about 30000 PCUs per day due to three national highways - NH-24, NH-58 and NH-91 Traffic Congestion- Very high Daily AC bus services between	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.	1. Introducing the concept of smart mobility, and making moving around the city less taxing. 2. Introducing smart traffic management and smart parking systems. 3. Conceptualising 'Happy streets' with no vehicle zones and designated vendor zones. 4. Ensuring last mile connectivity through e- rickshaws and feeder buses. 5. Building cycling tracks on selected roads.
11 Walkable	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 & 6.2)	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 2	Condition of Roads- Footpaths are encroached in major areas of the city. The roads in some areas have bumps and cracks and hence difficult to walk on. Some areas have good footpaths and availability of cycling tracks.	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.	1. Building pedestrian walking facilities such as, street lighting, footpaths, disabled friendly footpaths, engraving on Zebra crossings etc. in the area selected under ABD. 2. Conceptualising 'Happy streets' with no vehicle zones and designated vendor zones.
12 IT connectivity	A Smart City has a robust internet network allowing high-speed connections to all offices and dwellings as desired. (Guideline 6.2)	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 Wi-Fi services to provide opportunity for all the citizens to connect with high speed internet across the city.	Scenario- 2	Existing Wi-Fi zones- 0	The city eventually wants to reach Scenario 4, where it gives hi speed internet connectivity across the city.	1. Establishing 8 Wi-Fi zones across the city
13 ICT-enabled government services	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 & 3.1.6 & 5.1.4 & 6.2)	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. System 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 2	1. Grievance redressal response time has come down after development of online public grievances section on Nagar Nigam website, Public views, opinions, updated and feedbacks are also welcomed via e-mail 2. Usage of the city website has increased drastically due to quick registration and easy access to statutory documents 3. A lot of citizen services are provided online now	The city aspires to reach Scenario 4 where 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.	1. online citizen portal to provide all administrative services at the tip of smart phone 2. Command and control center to control over traffic signaling, disaster management, efficient infrastructure services, safety & security
14 Energy supply	A Smart City has reliable, 24/7 electricity supply with no delays in requested hookups. (Guideline 2.4)	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 2	1. No scheduled outages across the city 2. 1-2 hours of unscheduled power outages in a day due to overloading of transmission network 3. 12.45% increase in percentage of population covered by grid based power 4. 100% metering achieved across the city	the city tends to reach to Scenario 4 where Electricity is available 24 x 7 in all parts of the city with smart metering I.	Strengthening of network and system improvement in progress by M/S L&T under RAPDRP Part B-Scheme

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15	Energy source	A Smart City has at least 10% of its electricity generated by renewables. (Guideline 6.2)	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 is 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 2	Currently there is no production of electricity through renewable sources of energy.	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.	1. Solar roof tops for buildings (residential complexes, Govt. organizations, Schools and colleges, commercial complexes etc.) having 300 sq. mt. or above Built up area 2.Solar Panels to be installed on street lights in the are selected under ABD
16	Water supply	A Smart City has a reliable, 24/7 supply of water that meets national and global health standards. (Guidelines 2.4 & 6.2)	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	1. Distribution network coverage- 68.82% 2. Current water supply distribution network – 1,911km 3. NRW decreased to 30% 4. Per capita availability of water increased to 119.5 lpcd 5. Water supply increased to 214 ML/ day	Rain water harvesting systems mandatory for all newly constructed buildings. Water supply management by SCADA system. According to the Master plan of Ghaziabad, the city encourages rain water management by providing a 10 percent rebate on houses with rain water harvesting involved.	1. Ongoing projects to increase water supply distribution network to 2,089km 2. SCADA- to detect water leakages 3. Online monitoring of water quality. 4. Rainwater harvesting mandatory for all government, educational, public parks in ABD, if the total BUA is equal to or more than 300 Sq m.
17	Water management	A Smart City has advanced water management programs, including smart meters, rain water harvesting, and green infrastructure to manage storm water runoff. (Guideline 6.2)	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 2	1. Water availability is 214MLD. 2. Water pipelines are 191 Km long. 3. The household coverage of water is 68 percent.	1) Mandatory rain water harvesting for all new constructed buildings. 2) 100 percent smart meter installations by 2019. 3) Ensuring 100 percent household coverage of water by 2019.	Rain water harvesting in ABD projects. Smart meters to conserve water consumption in pan city. The Ghaziabad master plan of 2021 has initiated a 10 percent rebate on houses with installed rain water harvesting solutions.
18	Waste water management	A Smart City treats all of its sewage to prevent the polluting of water bodies and aquifers. (Guideline 2.4)	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 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 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 and reduces the need for fresh water.	Scenario 3	1) Waste water is discharged into the Hindon river which has had an adverse impact on the quality of the river water. The dissolved oxygen is as low as 0.4mg/l. 2) 100 percent treatment of collected water by sewerage treatment plants.	100 percent household coverage. 100 percent sewerage connection and treatment. 100 percent treatment of drinking water.	The government of India under its Yamuna Action Plan Phas-1 has allocated funds to open to promote a sewage treatment plant amounting to 269.5 million liters per day. Ghaziabad is covered under this action plan. Furthermore, the smart city model proposes smart solutions to treat waste water in the area selected under ADB. Installation of effluent treatment plants in 107 industries.
19	Air quality	A Smart City has air quality that always meets international safety standards. (Guideline 2.4.8)	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	According to a survey by Numbeo – air quality in the city is very low: 13.46. 2.5 particulate matter in Ghaziabad – more than Delhi.	Increased air quality and 0 percent violation in air pollution control norms of SPM and RSPM. To get to scenario 3 till 2019.	1) Reduction in pollution as a consequence of decreased traffic congestion by adopting measures like Last mile connectivity via e rickshaws and shuttle busses. 2) Secondly we propose to incentivise the installation of Integrated Building Management Solutions in newly constructed buildings by providing tax rebates of upto 10 percent on property tax. 3) furthermore, as a part of the pan city project in the smart city proposal we are installation smart air quality meters and dashboards to disseminate and analyse real time data on air quality in the city.

Feature	Definition	Scenario 1 (BASE)	Scenario 2	Scenario 3	Scenario 4 (ADVANCED)	Self-assessment of the city (for Pan-City Solution) 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	Input/Initiative that would move the city from its current status to Advanced status (Scenario 4: Column G)
20 Energy efficiency	A Smart City government uses state-of-the-art energy efficiency practices in buildings, street lights, and transit systems. (Guideline 6.2)	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 2	There are no energy efficient solutions being promoted in the city.	City wide installation of LED lightings. Mandatory installation of solar panels on newly constructed buildings.	1) Solar panel powered street lights as a part of the pan city development program. 2) development of plants to utilise bio waste to produce bio gas energy. 3) we propose to promote initiation of grid connected solar power projects in association with the UP government's policy of promoting solar power driven energy consumption.
21 Underground electric wiring	A Smart City has an underground electric wiring system to reduce blackouts due to storms and eliminate unsightliness. (Guideline 6.2)	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 1	No underground wiring.	Underground electric wiring covering 100% City area reducing T&D losses and maintenance cost.	We propose to have underground electric wiring in the Sahibabad industrial area where the ABD retrofitting project is going to be undertaken. We look to replicate this policy throughout Ghaziabad Please write the benefits in a few words
22 Sanitation	A Smart City has no open defecation, and a full supply of toilets based on the population. (Guidelines 2.4.3 & 6.2)	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	15 open defecation spots in the city. Write about sanitation network- % population that has access to toilets- % population defecating in open	Open defecation free city. Providing clean public toilets. Write more data please.	Initiated the building of a solid-waste compost plant in association with Ecowise in Pratap Vihar. Furthermore, the smart city project involves the censored waste pick-up trucks in the area selected under the ABD project.
23 Waste management	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 & 6.2)	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	Less than 50% door to door collection. Open air garbage bins. 800 tonnes of garbage that is generated everyday is being dumped into open spaces Absence of land filling site for disposal of waste. Ranked 67th out of 73 cities in Swachh Bharat Waste management plant (please mention if operational)	100 percent door to door waste collection. 100 percent waste collected is recycled. Energy creation through collected waste.	Ghaziabad is going to get 12 waste collection centres by June. 100 % Door to door collection of waste by Oct 201 Smart waste management – GPS tracked garbage trucks. Write more initiatives please.
24 Safety and security	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)	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 2	140 low resolution cctv cameras, which are non-functional. The level of crime as perceived by people was 84.38 out of 100 on a scale where 0 means very safe and 100 means extremely unsafe. Citizen safety drives- Crime Rate- Any other government survey-	CCTV surveillance cameras per acre covering most parts of the city. Increase in community policing programmes. Safe Refuge Points at transit stops and major public places with panic buttons for women's safety.	1) CCTV surveillance in areas with high crime rate as a part of the pan city project. 2) Adopting UP state's pilot project of a safety and security app aimed at providing heightened safety and security for women. 3) Furthermore, an MoU with the Ghaziabad police has been signed to promote cooperation with the GMC in the smart city project. 4) Introduction of an app with a detailed crime history of every individual by the Ghaziabad Police.