



Smart City
MISSION TRANSFORM-NATION

S.No	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)
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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-2 1. In the present practice, city undertakes citizen consultation with select stakeholders time to time for few projects and policies before implementation in the city. 2. The decisions are taken in meetings of the council where citizen's voice is represented indirectly through the elected ward members. 3. In the arena of improvising the citizen participation of the city, recently a broad level consultation has been taken from citizens for Smart City Mission.	1. Few Consultations were organized for projects like CDP, IHSDP, RAY and SFPOA, PMAY, etc. 2. Total 36.34% participations were recorded on various platforms (offline/online) as the voice of citizens for under citizens engagement programme for preparation of Smart City Proposal.	SCENARIO-4 1. Wider Citizens engagement (involving maximum stakeholders at each level City/Ward/Zone/Sector specific groups) for developing various initiatives such as Policies, Strategies, Plans and Projects using various on-line and off-line platforms 2. Each of the initiatives of Municipal Corporation are developed through Multi-stage Consultation Exercise 3. Maintaining the initiative-wise database of citizen engagement to provide inputs for any change in Policies, Strategies, Plans and Projects	1. Development of a Model Multi-stage and Multi-level (awareness, suggestions/aspirations and Feedback on Drafts) citizens engagement mechanism for initiatives of Municipal Corporation 2. Establishing Management Information System for Collection, Collation, Validation and Analysis of citizens in-put during various stages of any Multi-stage citizens engagement programme
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 emphasize 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-1 1. Sagar has rich natural heritage as Lakha Banjara Lake; and fort, Chhatris and few historic buildings represents the built heritage present in its vicinity but improperly conserved. 2. The main identity of Sagar is its economic base of trade and small scale industries. 3. Sagar is Regional Education hub and famous for housing the oldest university "Dr. Harisingh Gaur University" of Madhya Pradesh. 4. The glimpses of the Bundelkhand Art and Culture can be seen prominently in the city.	1. Lakha Banjara Lake is one of the largest urban lakes with an area of 82 Ha. The fort was built in the year 1735 AD. 2. Sagar houses the oldest university "Dr. Harisingh Gaur University" of Madhya Pradesh (students strength-more than 50000), Sagar with Engineering (1 Government and 5 Pvt), Medical (1 Government), Polytechnic colleges (1 Government) and ITI (22 institutes) which acts as centre of educational facilities for the entire Bundelkhand region. 3. Katra bazaar, Naya bazaar, Saboolal Market, etc. are major commercial markets.	SCENARIO 4: 1. To Preserve the built and natural heritages and transform into potential tourist attraction centre that reflects the glory of Bundelkhand art and culture. 2. Innovative enhancement and capitalization of infrastructure resources for promoting built heritage. 3. To revive the traditional trade, commerce and small scale industrial setup with transforming city as a Business hub.	1. Transforming the Lake abutting fort into a cultural centre which preserves, promote and market Bundelkhand's rich art forms. 2. Conservation and beautification of Lakha Banjara lake. 3. Façade treatment of buildings in old Katra Bazar in line with Bundelkhand's vernacular architectural features. 4. Development of Smart Business Centres for enhancing trade and commerce.
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-1 1. Sagar is an economic centre of Bundelkhand region with trade and small scale industrial setup as its major economic base but fails to reflect its economy at state and national levels. 2. It serves as a market centre for entire Bundelkhand region for various agricultural products. 3. City has better workforce participation but opportunities are limited to informal sector. it lacks in providing employment opportunities for the educated youth.	1. WFPR is 37.55%, which is better than the state and national WFPR of 34.18% and 35.11% respectively, and also satisfy the URDPFI standards i. e. 33% of total population.	SCENARIO-4 1. To establish large range of job opportunities for all sections of society. 2. To support and uplift the existing trading and community service businesses by introducing smart interventions. 3. To build a highly skilled and flexible workforce. 4. To develop an entrepreneurship promoting environment in the city.	1. Creating smart infrastructure and supportive environment for businesses and nurturing entrepreneurship. 2. Developing the CBD outside the confined area of the core 3. Establishing a knowledge based economic hub for employment generation. 4. Develop Incubation and skill development centers in co-ordination with major industries, institutions and schools using existing resources and tools like incentives for private developers for development of economic generation activities. 5. Diversifying the city economy with preserving the historic heritages and promoting tourism activities.

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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 specialized 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-2 1. Sagar has adequate Primary and Secondary education facilities in its vicinity which established it as educational center of Bundelkhand region. 2. Schools are in partially dispersed manner across the city and do not support walkability much. 2. The Govt. education facilities are regularly and private educational institutions are time to time assessed and monitored by Education Department of Government of MP through an education portal gives open access for its database of schools such as School-MIS.	1. There are 60 Schools with 757 classrooms in Sagar which consists of 19 primary schools, 24 middle schools, 8 High schools and 9 High Secondary schools. 2. 29:1 student teacher ratio in primary education. 3. The Aanganwadi provide basic health and education facilities to children and women. 4. Education portal of MP government (http://www.educationportal.mp.gov.in/).	SCENARIO 4: 1. To maintain and improve the educational facilities with enabling ICT in education. 2. To providing a platform for curiosity to become innovation through IT enabled Research Centre. 3. To ensure that the education facilities are available at easily reachable and walkable distance. 4. Increase employment and improve city education system. (Providing research platforms for R& D) 5. The Mid-Day meal and other health programs being run through Aanganwadis can be monitored by transforming Aanganwadis into E-Aanganwadis.	1. Promote schooling amongst the lower income people through awareness and identification of volunteers in the city. 2. Strengthening and monitoring of on-going programs targeted towards education for all. 3. Mapping of all Education facilities and identification (10 Minute walk). 4. Development of Schools with Smart Classrooms and Technology enabled Facilities, 5. Achieving a healthy student Teacher ratio 20:1 6. Transforming Aanganwadis into E-Aanganwadis
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 specialized health advice with maximum convenience. The city is able to foresee likely potential diseases and develop response systems and preventive care.	SCENARIO-2 1. The Health facilities are dispersed across the city but marginally adequate and unable to ensure availability at easily reachable distance. 2. State Health Department provided Sanjeevani - 108 Helpline in collaboration with GVK-Emergency Management and Research Institute, to facilitate immediate help in emergency situation. 3. State Health Department also operates Janani-Express and Mobile Medical Units in the District with the help of NGOs.	1. There is 1 District Hospital, 1 Medical college, 12 Intermediate nursing home, 20 clinic, 18 PHC, 13 Allopathic hospital in vicinity of Sagar. 2. To setup an individual health monitoring systems for all the citizens that can foresee likely potential diseases and provide responsible preventive care. 3. To develop a quick emergency response system with minimum response time and provision for green corridor in critical accidental situations. 4. To introduce smart technologies in health sector.	SCENARIO-4 1. To ensure sufficient health facilities are available for all sections of the society at affordable cost and accessible distance. 2. To setup an individual health monitoring systems for all the citizens that can foresee likely potential diseases and provide responsible preventive care. 3. To develop a quick emergency response system with minimum response time and provision for green corridor in critical accidental situations. 4. To introduce smart technologies in health sector.	1. Transforming the current Government owned health centers to the Smart health centers. 2. Upgrading the hospitals/ health centers in terms number of doctors, medical equipment, Ambulances etc. 3. City will have IT linked Smart District Hospital with Telemedicine centre and app based treatment facilities. 4. Develop a quick emergency response system having GPS enabled helpline numbers and Smart apps linked to the Ambulance vehicles and other departments providing important services to ensure coordination in crucial situations.
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: 1. Mainly mixed land use can be observed along the streets of Katra area i.e. in the CBD area but in other parts of the city too retail and office buildings can be seen in close proximity with residential areas. 2. The major commercial activities can be observed along the Sagar road, Pannalal Sahityacharya Marg, Gujrati bazaar road, Kotwali road, Nehru marg, link road and in Sadar bazaar area. The area around these roads can be considered as main CBD area of the city. 3. Apart from basic needs for work and other services, citizens need to travel a considerable distance by the means of automobiles. 4. Land-use rules allow mixed land-use development up to certain extent in certain areas only	1. Sagar Development Plan 2031. 2. The main market of Sagar 'KATRA' bazaar has 62% of buildings as mixed use.	SCENARIO 3: 1. To develop NMT and walkability dominant cluster of housing, retail and office buildings along with light industries. 2. Encourage and promote mix land-use in new development in the city. 3. To achieve Increased density with maximum and optimum utilization of land resource based on its location and demand.	1. City wide implementation of TOD Policy. 2. Through giving some relaxation/ advantages in the development control regulations for adopting mix land use in development. 3. Develop new areas with provision of amenities and offices within 10 minutes of walking distance. 4. Allowing establishment of non-polluting light industries near residential areas.

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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 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: 1. Multiple high density clusters in the inner parts of the Sagar city portray its compactness. 2. Compared to growth in outskirts, walking from one building to another is easier in inner parts of city. 3. Formal and informal development at periphery does not encourage compact development. It is in sprawling manner and can be called automobile oriented. 4. Public transportation facility in Sagar is under progress; therefore, city does not encourage dense and compact re-development of underutilized land parcels in inner parts. 5. Except nationalized policies city do not have specific norms to support compact and dense development.	1. Sagar is a very compact city with a net density of 542 PPH. 2. The habitable area is only 30% of the total Municipal area because of growth constraints on all sides.	SCENARIO-3 1. To achieve highly dense and compact cluster of buildings supporting walkability and PT. 2. To control sprawl development at periphery and support compact development of under-utilized parcels in the old as well as new city area. 3. To encourage mix use developments which encourages walk to work concept.	1. Encourage and incentivize redevelopment of underutilized and incompatible land use. 2. Proper implementation of development plan with respect to compact development supportive regulations and TOD policy. 3. Update regulations with adding compact development supportive norms for new development and re-development.
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 neighborhoods.	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 1. City have variety of public open space like community level, neighborhood level and housing area parks, playgrounds, Small stadium, etc. present for citizens but offers limited use for all sections of population. 2. Although open spaces are in considerable amount but are in poor conditions and lacks in fulfilling URDPFI norms. 3. City has a huge lake in its core to attract citizens for recreational activities. 4. Open spaces are in dispersed non-uniformly and far from residential areas making them inaccessible.	1. Per capita open space is 7.31 sqm that is less than 10-12 sqm under URDPFI norms. 2. There are total 67 parks in the city , among them 1 is community level, 3 are neighborhood level and rest are housing area parks. 3. City has 22 playgrounds and 1 stadium promoting sports. 4.The periphery of lake is 5.5 kms.	SCENARIO-4 1. To ensure integrated green and public open spaces to be available for all sections of the society. 2. To well maintain all the public spaces in the city and ensure maximum use. 3. To develop a network of city heritage, recreational and green open spaces that depicts the natural and cultural identity of Sagar.	1. Management and maintenance of the existing public open spaces with involving citizens of the localities across the city. 2. Development of Ambedkar Park and Chandra Park under AMRUT mission. 3. Developing a city level recreational park through identifying and preserving open land parcel consists of dense vegetation on population basis. 4. Lake front development as recreational green buffer along the periphery of Lakha Banjara lake.
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-2 1. The Available housing is isolated based on income. 2. Sagar city failed to fulfill the housing demands with respect to the population growth. A considerable rise in demand has been seen in recent years. 3. HIG and MIG can afford and feed their housing needs but LIG and EWS working in informal sector are unable to afford and are forced to live in informal settlement. 4. Recently through PMAY scheme of Gol, local government took remarkable step towards fulfilling the demand of affordable houses.	1. Affordable housing units created –1777 units under RAY and 360 units under IHSDP 2. The City has 42887 persons living in slums 15.7% of total population. 3. 7968 HHS are under slums which is about 15.2% of total HHS in the city. 4. Construction of 16751 housing unit under PMAY scheme is under process.	SCENARIO-4 1. To ensure access to adequate and affordable housing for all sections of the society. 2. To maintain the pace of housing demand and supply rates meet each other for preventing informal settlement formation. 3. To encourage cluster housing development of all sections of the society.	1. Provide soft loans to make ownership accessible for weaker section. 2. Promoting investment in housing sector based on PPP Models. 3. Enforcement of regulations to enhance integration of housing clusters for affordable, moderate and luxury sectors. 4. Adopting innovative low-cost building technology to reduce overall cost and achieve affordability.

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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. 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-1 1. The personalized vehicles have major share in model split of trips of Sagar city. 2. Intermediate Para-Transit (IPT) feeds the transportation need of the Sagar city in absence of public transportation facility. 3. City streets are unsafe and motivate use of personalized vehicle due to longer trip lengths and absence of pedestrian and NMT supportive infrastructure. 4. City streets need maintenance and proper connectivity.	1. Currently there are 220 registered autos, 265 Tata magic's and 50 E-rickshaws working as IPT in Sagar. 2. DPR for 43 city buses sanctioned under JNNURM to run on 5 routes and cover 56 kms of road network and under implementation. 3. Modal split of Trips – Pvt Vehicles – 88% (2 wheelers – 55%), NMT- 12% 4. City has 55 kms of major road network out of 225 kms of total road network.	SCENARIO-4 1. Ensure Transit Oriented Development Principles to promote Pedestrianization/NMV and reduce Travel Times and Distances. 2. To strengthen the road network with reinforcing pedestrian friendly infrastructure for citizens. 3. To establish well connected and affordable public transportation facility for citizens. 4. To achieve public transport mode share of trips at least 50% of the total trips. 5. To ensure last mile connectivity for citizens with integration of various transportation modes.	1. Repairing and reconstructing city roads wherever required and expanding road network through constructing new roads. 2. Execution of proposed city bus systems with ITS technology based operation for better management. 3. Provision of Battery Operated Cycle Rickshaw, Bike sharing scheme, Park and Ride scheme, smart parking and encouragement to other non motorized for achieving last mile connectivity. 4. Use of IPT as feeder services for supporting public transport system. 5. Multimodal transit hub development to integrate bus station, railway station, NMT and Bike sharing and other modes.
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-1 1. City roads lack to facilitate all road users and inclined towards facilitating vehicles. 2. Pedestrian friendly infrastructures facilities like marked crossing, signalized pedestrian crossing sidewalks, etc. are absent in most part of the city. 3. Shops, restaurants, building entrance and trees are not properly aligned, do not encourage sidewalks. 4. Improper intersection design with lack of signalized pedestrian crossing and traffic rules enforcement makes walking unsafe	1. Only 6 kms of city roads having pedestrian footpaths.	SCENARIO-4 1. To provide improved pedestrian and cycling friendly infrastructure facilities on all major streets of the city with integrated public transportation. 2. To frame a strictly enforceable strategy to enforce traffic rules and regulations. 3. To transform the CBD area into non-motorized area. 4. Ensure road safety to pedestrians using smart monitoring system. 5. Provision for pedestrian friendly infrastructure in new development.	1. Empower the enforcement of traffic rules by taking strict actions and imposing heavy penalties. 2. Improving the improper geometry of the roads with suitable measures. 3. Installation of signals and proper demarcation of pedestrian crossing at all the important junctions. 4. Install solar power based streetlights and CCTV cameras on sidewalks and pedestrian areas. 5. Provision for Multilevel Parking outside core Katra Area to promote walkability. 6. Completing the Street network with footpaths for pedestrian and dedicated cycling and NMT lanes to improve accessibility. 7. Make compulsory provision in development policies for dedicated pedestrian friendly infrastructure in new development.
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 wifi services to provide opportunity for all the citizens to connect with high speed internet across the city.	SCENARIO-2 1. 4G Reliance hotspot facility is available in some parts of the city to provide high speed internet connectivity.		SCENARIO-4 1. To ensure high speed internet facility accessible to all the citizens across the city. 2. To increase options for affordable broadband facility.	1. Increase the availability and speed of broadband in the city (Develop required infrastructure to improve the speed, availability and cost, use of OFC Network), 2. Provision of free public Wi-Fi hotspots throughout 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. Public services like Birth, Death, Marriage registration, etc. and other essential government services are linked with online platform of SMC. 2. Occurrence of delay in service delivery is reduced and limited to certain sectors. 3. The integration of services and billing is under progress. 4. SMC is linking their online platform with e-nagarpalika portal for providing maximum services to citizens and will become operationalize from April 1st 2017.	1. Information related to SMC budget, Balance sheet, Audit reports, facility to view documents, print & collect key documents, e-tenders, apply for various services etc. is available online. 2.SMC has introduced Automatic Building Plan Approval System (ABPAS) for on-line submission and approval of building plans. 3. Door to door collection vehicle tracking facility. 4. SMC official website & Mayor Helpline for grievance redressal, information sharing & incidence reporting available.	SCENARIO-4 1. To provide all major services though online and offline platforms on single click. 2. To improve Quality of life of the citizens by improving efficiency of Urban Operation and Services. 3. To develop city government as Responsive and Transparent government.	1. A Centralized Control Centre recording all the complaints, collection of various bills and taxes of various departments and transfer it to the concerned department. 2. Multi-mode communication facility like mobile application, SMS, automatic response collecting telephonic helpline no., whatsapp no. etc. for available services. 3. Integration of these features with Pan City Proposal

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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. 24 x 7 supply of electricity is available in the city without any scheduled outage due to load shedding. 2. One scheduled outage for average duration of 20 min for preventive maintenance every month.	1. State has been declared as 24 x7 power supply state.. 2. Increase in total no. of electricity connections : 56982 to 65946 3. AT&C losses has reduced from 38% to 28.58%. 4. Frequent breakdown outages in the city.	SCENARIO-3 1. To provide 24 x7 Energy Supply in all parts of the city 2. To Improve Monitoring and Transparency of supply through Smart Metering of 100% connections. 3. To reduce T & D losses introduce smart techniques in distribution.	1. Smart metering in every household for improving overall efficiency in distribution, tax collection and transparency. 2. Installations of Underground Electric cables all over the city for safe distribution and also to reduce T & D losses.
15	Energy source	A Smart City has at least 10% of its electricity generated by renewable. (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-1 1. Currently city does not have any remarkable contribution of renewable source of energy. 2. The solar contribution to be strengthened through Net Metering Policy of GoMP.	N.A	SCENARIO 4: 1. To enable environment for solar technology penetration in the city both at ULB and Community Level. 2. To ensure city's 10% energy consumption should be generated through renewable source. 3. To develop long term strategies, encouraging use of renewable energy sources and reduces grid based demand for power in the city.	1. Promote investment in Solar Power Generation in the city either through ULB or through PPP mode. 2. Provide single window clearance facility for speedy implementation of solar power projects. 3. Install solar power plants in all government buildings, public buildings and on barren government land through ULB or PPP mode. 4. Encourage citizens to install solar panels on roof and solar power plants on barren private lands through giving incentives.
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. Sagar city has intermittent water supply system, but lacks in supplying water to all households and fulfilling the per capita requirement of water as per norms. 2. The extent of non-revenue water is high due to non-metering of connections and unauthorized connections/distribution losses.	1. 65% of population has water supply connection with per capita water supply of 125 liters/day. (1hr daily supply) 2. The extent of non revenue water is 35%. 3. The existing treatment capacity of Water treatment plant is 82.5MLD and is proposed to be increased by 92.4 MLD by 2021. 4. Existing Water storage capacity is 21 MLD and is proposed to be increased by 30 MLD by 2021.	SCENARIO-4 1. To ensure 24x7 Water Supply of potable water reachable to all sections of the society at affordable cost across the city. 2. To reduce Unaccounted water losses to be less than 15%.	1. Development of planned water supply network throughout the city. 2. Implementation of SCADA enabled water supply system for reducing unaccounted loss of water.
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 city 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 re-usage 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-1 1. City has less no. of metered connections but corporation is making efforts for installing water meters in water supply connections. 2. Currently city does not have any provision for collection and management of storm water except certain laws for rain water harvesting system development. 3. There is no provision for recycling of waste water.	1. Water losses up to 32% due to leaking water lines or water theft. 2. 25% of city is covered by drainage network which also serves as storm water drainage. 3. 2000 meters out of 6150 proposed Smart water meters has been installed in Zone-I and for rest of the city installation is under progress.	SCENARIO-4 1. To achieve 100% smart metering at all the water supply connections. 2. To adopt Smart Mechanisms for monitoring of water supply system. 3. Provisions to Initiate recycling of waste water generated in the city for secondary uses. 4. To develop and promote rain water harvesting system.	1. Dual Piping in Distribution Network for Re-use of Recycled waste water. 2. Installation of Smart Consumer Water Meters. 3. Mapping of Water Supply Asset and Management through SCADA, developing Real- Time pressure and Flow monitoring and Control, Leak Deduction Sensors, Real-time monitoring of water quality. 4. Promotion of rain water harvesting system development by means of giving incentives/relaxation in bye laws.
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-1 1. Presently city does not have sewerage network and sewage treatment facility. 2. Septic tanks and open drains serves as sewage carrier for the city but they terminates into the natural water body (Lake) which pollutes environment.	1. The implementation of Sewerage network and STP development is in progress under AMRUT Mission of Gol.	SCENARIO-3 1. To facilitate every household with the smart technology equipped Sewerage system in the city. 2. To achieve 100% collection, Treatment and Recycling of Waste Water generated in the city.	1. Development of sewer network of 225 km length and STP of 36.72 MLD treatment capacity is in implementation stage under AMRUT scheme. 2. Initiating use of DEWAT system for waste water recycling and Re-use through Dual Piping.

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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 specializing 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 specializing 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 1. MPPCB is implementing 'National Air Quality Monitoring Programme' for Sagar city. 2. The air quality status of the city is overall satisfactory and good in recent measurement. (as per the AQI rating monitored by MPPCB in first quarter and march month of 2017)	1. Sagar has wo air quality monitoring stations in residential areas. 2. The average AQI in the city is measured as 59.6 in recent measurement. 3. The presence of NO2 concentration: 13.5 ug/m3. 4. The presence of SO2 concentration: Measured as 2.0 ug/m3 5. PM10 concentration: 59.6 ug/m3 6. PM2.5 concentration: it is measured as 26.03 ug/m3 at one station and 19.06 ug/m3 at other one. (all data is measured in 1st quarter and march month of 2017)	SCENARIO-4 1. To achieve International Safety Standards in Air Quality of the city. 2. To increase the coverage of real time pollution monitoring to all parts of the city. 3. To ensure continuous Air Quality Mapping and Monitoring for opting preventive measures and reducing health risks.	1. Environmental Sensors on Major Roads on Smart Poles and public places.(1 per 3 Km) 2. Monitoring of emissions form Vehicles, Industries and other sources.
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 counseling 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-1 1. Currently Sagar city do not have any provision for controlling, promoting or supporting energy efficiency in the buildings. 2. City initiated conversion of old street lights with LED lights.	1. About 300 streetlights replaced with LED lights and others are under progress.	SCENARIO-3 1. To promote and support the energy efficient techniques in buildings as well as transit systems at local as well as community level. 2. To transform public, semi-public and important private buildings into energy efficient buildings. 3. To ensure 100% energy efficient street lighting feeds through renewable source of energy.	1. Provision for Solar Power Terrace Installations on existing and upcoming buildings. 2. Energy Efficient Street Lighting on major Roads on Smart Poles equipped with Solar Panel and ambient light sensors.
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 1. Electric wiring system is completely overhead in Sagar. 2. Presently city does not have any plan or provision for transforming overhead electric wiring system into underground.	N.A	SCENARIO-2 1. To transform more than 40% of overhead electric wiring system will be laid underground to reduce T & D losses.	1. Construction of under-ground ducts based transmission system for power and communication in convergence with IPDS
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-3 1. The city has achieved Open Defecation free status under Swachh Bharat Mission & CM Swachhta Mission implementation. 2. Although city is having ODF status but it is achieved by the means of providing community toilet facilities.	1. City accomplished target of constructing 7460 toilets under Swachh Bharat Mission. 2. 100% coverage of toilet facility (through community toilets and individual toilets) has achieved which was 78% earlier. (As per the SAAP under AMRUT)	SCENARIO-4 1. To ensure every household in the city have access to individual toilet facility. 2. To modifying the traditional community toilets and public toilets into environment friendly bio-toilets. 3. To maintain the status of being ODF city.	1. By speeding the process of providing subsidies to households for constructing individual toilets. 2. Promoting the construction of smart green toilets like bio-digester toilets, permeable reactive barrier (PRB) toilet, solar-powered, self-cleaning toilet, bamboo toilet, EcoSan toilets/urine diverting dry toilets (UDDT).
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-3 1. Sagar municipal corporation performs 100% door to door collection of solid waste throughout the city. 2. Collection and transportation of waste to treatment plant is being tracked and monitored. 3. Segregation of waste at source started as pilot project in 7 wards and for rest collected waste is segregated at treatment plant. 4. Waste is recycled and processed to produce Bio-Gas, Compost and RDF	1. Sagar city produces 98 MT of solid waste per day and practises 100% collection and transportation of waste to recycling plant. 2. Geo-fenced waste transport vehicles with app based controls introduced in Sagar.	SCENARIO-4 1. To ensure the 100% segregation of waste at source. 2. To Achieve "Zero- Waste" Status to reduce landfill caused by waste.	1. Spreading awareness about segregation of waste at household level with provision of giving incentives. 2. Integration of present solid waste management system with the proposed centralized command and control centre for real time monitoring.

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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.	<p>SCENARIO-2</p> <p>1. Induction of Dial 100, woman helpline (1090), Nirbhaya mobile, Baaz Mobile, Shakti Mobile helpline facilities and 24x7 CCTV cameras based surveillance of various locations throughout the city, ensures safety to citizens.</p> <p>2. City demands more efforts to uplift the safety standards, as streets and corners in some parts of the city are unsafe during some times of the day specifically for woman, children and senior citizens.</p>	<p>1. Total reduction of 5% has been seen in crime rate of the city in last 3 years.</p> <p>2. The response time of Dial 100 PCR vans for redressing complaints is reduced to less than 10 min.</p> <p>3. City have 8 nos Dial 100 PCR vans for redressing complaints and about 183 nos of surveillance cameras were installed at 35 locations throughout the city.</p>	<p>SCENARIO-4</p> <p>1. To ensure safety in all parts of the city to all sections of the society at all times of the day.</p> <p>2. Improve the emergency response capabilities of the existing system to reach in all parts of the city within 5 min response time.</p> <p>3. Enhance the safety and security of the citizens through technology enabled methods or systems.</p>	<p>1. Centralized law enforcement command and control centre with feeds from security cameras.</p> <p>2. Surveillance Cameras for Incidence Detection on major roads and Public Open Spaces.</p> <p>3. Computer Aided Dispatch (CAD) & AVL(Automated vehicle location) of emergency and Police Vehicles.</p> <p>4. One Stop Centres for Women's affected by Violence.</p> <p>5. Street Lights on all Roads and Public Places</p>