Annexure-2

Annexure 2 : Self Assessment Form

A	B	C	D	E	F	G	H	I	J	K
	Standard	Definition	Scenario 1	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 available)	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
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 stakeholder. 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	Limited direct interactions with citizens in the absence of policy framework. At present there is no formal procedure for involving the citizens in the development process. While preparing the Master Plan citizens objections/suggessions are recieved.	All the citizens participate in defining City's vision & inherent development interventions.	Define the policy framework to include citizen participation while envisaging development. Citizens to be consulted through feedback forms, seminar/workshops, focus group discussions, online mediums like Facebook, YouTube, , twitter and email. A dedicated website should be launched by MCJ to receive feedbacks
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	The city has one of the 51 Shaktipeeth and also known to be the regional center of sports infrastructure, sports manufacturing goods & surgical items. City is rich cultural & religious heritage and hosts famous classical musical concert "Shree Baba Harivallabh Sangeet Sammelan" represented by national & international music maestros since the past 100 years. Jalandhar is the state's biggest sports & surgical good manufacturing hub and has good sports infrastructure (stadiums, sports colleges). The city is home to various national and international players (Harbhajan Singh, Pargat singh) and is also a hub for sports training with private sports academies like Harbhajan Singh's Cricket Academy	Create conducive environment for hosting sports & cultural events; promoting economic growth & augmenting city's identity as Sports & Cultural Hub	Development of Sports Hub in Burlton Park Area; that can become a center of sports excellence and also provide cultural and public space for citizens facilitating cultural events/shows of the national & international repute.
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 attattempts 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	Jalandhar is internationally specialized in manufacturing of Sports Goods, Leather Goods, Hand Tools, Pipe Fittings and Surgical Implements etc. Large scale industrial units constitute only 0.23% of the total industrial units whereas the share of Small Scale Industries has been found to be of the order of 99.77%.The share of Small Scale Industrial Units was found to be 97.14% as compared to 2.86% large scale industries. Informal vendors which had been given license to regulate their activity/business are as follows Year:2012-13- 5700 in nos, Year:2013-14-6200 in nos,Year:2014-15-5300 in nos.	Promote economic growth of the city by creating state of the art sports infrastructure and support allied manufacturing industry coupled with creation of enterpreniural work force abreast with skills responding to current market needs.	Development of Sports Hub at Burlton Park and create employment oppotunities for ~ 6000 people. Creation of skill development and R&D center to enable training of around 800 personnels per annum on continuous basis. Promote local sports goods industry by creating Commercial/ Multipurpose arena.
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	Databases like student, teacher attendance & their ratio is monitored by www.epunjab.org. Our website ssajalandhar.org is used to communicate with schools regarding important instructions. Multimedia education is provided through ROT & SIT in high schools and secondary schools. Edusat language labs are running in all high and secondary schools.	Vision is to introduce computer education along with smart classes from class first onwards. For this city plans to establish computer labs with internet facilities in all schools and connect them with top universities like IIT & IIM to update students. City envisages to have two way interactive programme facility.	Convergance of E-Education initiative of Government of India for Jalandhar city to to the following 1. Replacing all Receive only Terminals ROT's with Sattelite Interactive Terminals. 2.Providing smart class facility to all the schools from class 1st to 12th . 3.Providing computer education starting from class 1st. 4.Providing rot or sit at primary cluster level schools. 5.Installing bio metric attendance system in each school.
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 centres 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 conveniences The city is able to foresee likely potential diseases and develop response systems and preventive care	Scenario 3	There are 176 (Government+Private) health facalities in the city. They are easily accessible as they are wide spread uniformly. There are 200 ambulance (Government+Private) to cater emergency services and can be accessed through robust telecomunication system.	City aspires to be healthy city with all adequate health infrastructure facilities catering to sports activities and eldely population.	Citywide IT enabled infrastructure for elderly for quick response and health service provision , alongwith specialised sport medicine/ injuries /rehablitation wing to be established.
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 homed 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 neighbourhoods 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 neighbourhoods have light industrial uses within them (e.g., auto repair, car_ 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	16.67% of the Residental land use is under mixed use,hence limited city residents enjoy the benefit of live, work, and shop in close proximity. The Master plan provides for encouraging mixed use development.Thiscreates ambiguity amongst both city authorities and citiy residents. Due to absense of dedicted mixed Land use category, citizens are not able to capitilize on such provisions as given in Master Plan.	In order to promote Work, Play, Live concept, Master Plan will clearly specify the areas that allows mixed use development and also provides for development control regulations for the same.	Increase the FAR and allow mixed landuse development alomg Arterial and Sub arterial raods falling in the Burlton Par and adjoining areas. The roads identified are (Balda Road, 120 Ft Road, JP Nagar Road, Kapurthala Road). The success of this mixed land use pilot project shall be replicated at city level by MCJ.
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 neighbourhoods. (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 centre, 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 centre 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 favour 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, walk able 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 walk able and inviting activity canters and neighbourhoods. Regulations encourage or incentivize re-development of under- utilized land parcels in the city center Buildings are oriented to the streets and parking is kept to a minimum, located below groun d or at the back of buildings Public transport and walki ng connects residences to most jobs and amenities Re sidential density is at an optimal with affordable housin g available in most areas	Scenario 2	Master Plan 2031 suggests that out of 55 wards (currently the wards are 60) only 7 wards of core city has higher density 150 person/acre (PPA) followed by 19 wards with 50-150 PPA and 29 Wards with less than 50 PPA.	Mixed Use Development with higher FAR to be promoted for compact development , creating larger green and recreational spaces and encourage public transportation system as a medium for commuting	

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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 neighbourhoods, 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	Master Plan 2031 suggests that existing landuse under Local Planning Area for Recreation and Public and semi public is 0.2% and 2.23% respectively. Most of residents living in walled city don't have access to open spaces/parks and are accordingly required to travel longer distance to have access to such areas.	City to create sports facilities at the neighborhood level and at city level with aim of development of sports and play areas for all age groups at appropriate levels. In addition, the existing sports infrastructure should be upgraded and efficiently re planned to improve the level of facilities	Development of Burlton Park area as sports hub to provide Sports & Cultural identity in sync with the residents vision. Canal area rejuvenation and Burlton park redevelopment shall provide green lung to the city at large and improved built form. Combination of both these spaces shall increase by 9% under recreational & open spaces in Burlton park and adjoining areas.
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 incomes 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 Afforable, moderate, and luxury housing are found clustered together in many areas of the city	Scenario 3	Housing is available from 2400 Rs/sq yard in under developed areas to 70,000 Rs/sq yard at niche areas. Growth rate of housing from 2001 to 2013 is 2.78 % and populationg rowth rate is 2.13 %. Some areas near old city area are affordable to lower & middle income groups	A wide range of a housing should be available covering all socio-economic stratas. The supply of housing should be growing at pace with population.	Encourage PPP format for developing housing and creating livable spaces by capitilizing Housing for All scheme in existing Slum areas like MithuBasti area of Burlton Park.
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	The city has covered under scenario 2, the city has very limited available option of PT and pedestrian facility is only available in Posh area only.	No organized public transport system is in place. Citizen's transit needs are sufficed largely by around 15000 shared and personalized autorickshaws and partially by around 140 private mini buses operating on 13 suburban routes. Pedestrian infrastructure is inadequate.	City to provide mobility for all categories of citizens. Public Transport to be progressively improved supported by an efficient NMT and Pedestrian infrastructure. This will help to reduce the average travel time and traffic congestion on roads. Public Transport to be based on Trunk and Feeder sytem to ensure maximum coverage. Last mile connectivity to be enhanced	The city has plan to introduce a fleet of 128 mini/midi/standard CNG buses complying with MoUD's Urban Bus Specification-II. Smart City Bus System (SCBS) to be equipped with all modern ITS components and operations to be monitored through central control room. Smart Card and real time mobile application facility to ensure provision of efficient and reliable SCBS. Shared Autorickshaws to be encouraged to ply on internal roads thus augmenting SCBS coverage and providing last mile connectivity. Smart Vehicle Actuated Signals to be employed along major SCBS routes to ensure smooth traffic flow and efficient bus operations.
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 streets 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.	Only 60% of Arterial and Sub-arterial roads have foothpaths. Footpaths on collector roads are largely missing. None of the traffic signals at intersetions have pedestrian phase and no mid-block pelican signals are provided. No Foot Over Bridges and Under Passes are provided. Existing footpaths are covered with various obstacles such as Trees, Electrical Poles and Transformers, temporary Vendors etc. thus restricting seamless pedestrian movement.	City to provide 100% footpath coverage with walkways free of all obstacles. Pedestrian phase to be included at intersections having high pedestrian movements and Pelican signals to be placed at strategic locations. Traffic Calming measures to be used to ensure pedestrian safety	Develop a comprehensive green network of spaces (36 acres) and NMT routes (24 kms)that will function as both well lit pedestrian and cycling routes with good quality public realm in the Burlton Park and adjoining area. Provision of multilevel car parking (1600 ECS) and Smart parking bays (1675 ECS) at GT road ,120 ft road , Adarshnagar park, Guru Ramdas market area, Basti Adda road and Kapurthala road thus more walkable spaces.
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	City wide IT connectivity is being extended to citizens through Government/Private IT sevice providers.	100% Wi-fi coverage throughout the city. High speed Internet connectivity for all at affordable prices.	Installation of Smart poles at 78 strategic locations across the city having capabilities of mounting wifi routers.Optical fiber/4G/3G/Copper based interconnectivity of all stakeholders through Digital India program.
13	**Intelligent 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 platform 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 platform 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	Online and offline governance services are not integrated properly. The city lacks two way communication between the citizens and government. The complaint redressal system currently is at a low scale. Currently MCJ does not cover core E-Governance functions through ICT based interventions.	City for its people by connecting Citizens, Governance & Planning. The city aspires to install a robust E-Governance system with • Development of Portal • Back of the system integration • Centralized Application system • Mobile enabled service delivery and Help desk for citizens with toll free number.	A centralised command and control center intergrating real time feedbacks from 78 strategic locations shall be established as part of the city survellance project. Customized dashboards for various line departments including Police, Fire, Health and other lined Departmentswill be established for quick decision making. MCJ is soon planning to launch city wide E- Governance project with functions as follows. 1) Core Functions including Birth & Death , Water Supply & Sewerage , Building Regulations , School Management , Property Tax, Licenses , Health & sanitation , Fire services , Rent/ Lease, Transport , Plantation in Parks , Advertisements & Hoardings , Verification services , Ticket sales , Works Management 2)General Administrative Functions including legal matters , RTI, MIS, Complaints and Grievance , RTS and Secretarial functions 3) Financial Management functions including Double entry accounting system and Budget 4) Personnel Management functions including Employees services and Pay roll pensions. Once E-Governance project is implemented this shall be integrated with the projects namely City Survellance and Public Transport & Traffic Management System Projects.
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 3	The quality of supply has improved consideably after implementation of APDRP project,this also includes installation of smart power meters at city level. Some of the KPIs are as follows 1. % of houses covered under Grid Power- 100% 2. Transmission & Distribution losses- 10.41 % 3. Hours of Scheduled and Unscheduled Outages- 3.5 hours/day	Electricity should be made available 24 x 7 in all parts of the city to all the citizens with smart metering for monitoring and transparency	"Ring Fenced" distribution network to augment existing power supply and to increase existing transformer capacity

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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 1	The City does not have any Renewable energy source at present	City aspires to achieve more than 10% of the power from Reneable Energy sources	Sourcing power from Waste to energy plant of 8 MW is proposed under MSWM project Installation of Roof top Solar based Power Generation (17.88 MW) in Burlton park and adjoining area and Inclusion of Jalandhar city in Solar City Mission of Government of India.
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 suffecient quantity and affordable across all sections of the society Unaccounted loss less than 15%.	Scenario 2	12 hours of piped water supply having good quality which meets Indian stabndards is provided in all parts of city. However city is envisaging to supply 24X7 water. Current unaccounted water is 20 %.	City aspires to supply 24X7 water to all its citizens with further improverment of quality of water to meet Internantional standards. City also envisage to reduce NRW from 61 % to 20% to meet MoUd guideline. Volumetric Based billing instead ofarea based billing is proposed in Burlton Park and adjoining area by installing more than 10,000 Smart water meters.	Convergence of Amrut scheme with Smart city mission to replace 65 kms of old water piped network for reduction in UFW, construct 10 new OHSRs for 24x7 water supply and installation of SCADA system in Burlton Park and adjoing area.
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 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 1	City does not have any provision of Bulk water Meters to measure discharge. Only 2.73% of properties have water meter connections. Treated waste water is not reused. Rain water harvesting is done but at very few government buildings. City lacks storm water management with frequent incidents of waterlogging during rainy season. Extent of non-revenue water in the city is 48%.	City envisages to install Bulk water meters by identifying District Metering Areas (DMAs) and Smart individual meters to reduce NRW. Policy implementation to ensure rain water harvesing .City aspires to use treated waste water for horticulture, Car washing etc. to reduce demand of fresh water.	In collobration with AMRUT scheme authority is under planning to procure 532 bulk smart water meters, 32 OHSR's, 1,24,782 Smart Individual Meters and installation of SCADA system for better management of supply. In Burlton park and adjoing area 2 inititatives have been proposed under Smart City Mission 1.Construction of 20 recharge wells at low lying areas to prevent water logging and storing water through Rain Water Harvesting measures. 2. 12 kms of Dual pipe for waste water reuse
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 before disposal However the treated water does not meet standards and is not recycled for secondary uses	All the waste water is collected and treated before before disposal It is also treated to a high standard and some is recycled	The city has zero waste water because all the waste water is collected, treated and recycled It meets standards an reduces the need for fresh water	Scenario 2	All 200 MLD sewage (100%) is collected and treated in 5 STPs before disposal. Treated water meets standards of PPCB. However city is still planning to recycle the treated sewage for multiple use & city aspires to collect all sewage which is generated by minimising leakage & linking the gaps in sewage network.	City is working towards100% utilisation of treated waste water (190 MLD) from 5 functional STPs,in order to reduce 100% reliance of fresh water demand from ground water.	12 kms of Dual pipe for waste water reuse is proposed in retrofitting area i.e Burlton Park & adjoining area which will reduce reduction in per capita fresh water consumption by 40 lpcd (about 30 % of per capita water demand). This pilot project will be replicated at Pan city level at later stages. In convergance with Amrut scheme 100 % sewage facility will be provided to city as well as identifying and replacing damaged sewage system to collect all generated waste water . Also enabling IT based system to ensure proper functionaing of system without any blockages.
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	Air pollution monitoring is done through 4 Ambient Air Quality monitoring stations in the city.These 3 stations operate for 3 days in the week for 24 hours Violation of pollution control standards of RSMP on annual basis is 125 %. Total Air Pollution in Jalndhar City is above the permissible National Standards and the main source of pollutions are Domestic Sources, Industrial Sources, Vehicular/Transport Sources and DG Sets.	The city aspires to improve air quality by resorting on clean and green fuels, enhanced enforcements to arrest air pollution with regular monitoring of the air quality parameters at strtegic locations.	Punjab Pollution control Board has planning to install real time continuous ambient air quality monitoring stations at important locations of Jalandhar so that realtime ambient air data is available for future planning and for public awareness.Introduction of CNG based city bus transportation system will reduce both the IPT led vehicular traafic and air pollution. It is estimated that there will be a reduction in CO2 emissions by 9% and NOX by 14% through utilization of CNG as clean and green fuel. Smart poles installed as part of city survellance system are capable of mounting Air-poluttion monitoring eqipments for regular monitoring and Micro management.
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 effeciency in buildings	The city promotes energy efficiency and some new buildings install energy effeciency systems that track and monitor energy use and savings	Most new public buildings install energy effeciency 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 effeciency strategies	All the existing old and new public buildings employ energy effeciency 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	Almost 95 % (65000 nos) of city's road are covered under sodium vapour street lamps. But there are no provision of Led lights or solar lights in the city. Also the city does have energy efficient public/institutional buildings.No Energy saving projects have been launched as the city is not part of JNN Solar Mission.	City aspires to have 100 % of roads covered with LED lights, with all the public/institutional buildingsto be energy efficient .The city requires to replace the existing old pumps witn the new energy efficient pumps . City also aspires to be included in the Solar City Mission of Government of India.	Authority have planned to procure Led street lights for remaing 5 % of City roads. Under the solid waste management project 8 MW waste to energy plant is proposed. Establishing Roof top solar infrastructure on Institutional area (1,49,564 sq mt) to meet energy demand from renewable sources in the Burlton Park & adjoining area.Energy saving upto 16.5% would be achieved due to replavement of old pumps to energy efficient pumps.
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	Funds under existing & ongoing APDRP scheme does not cover underground electric wiring. Existing underground cabling is done for a 2.5 kms stretch from Patel chowk to TV center. Also there is a proposal for underground cabling of 1.5 kms of 66 KV line from T.V. Center to Chari Mandi	100% Underground electrical infrastructure leading to improvisation in city's skyline & reliability of supply, reduction in T&D losses and Maintenance cost .	The proposed retrofitting area i.e Burlton Park & adjoining area (1010 Acres) considered for Area Based Development does not have underground electrical wiring. It is proposed to underground electrical cabling through Smart City Mission Funds. This pilot project will be replicated at Pan city level at later stages.

	Standard	Definition	Scenario 1	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 available)	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
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 populations	Sanitation facilities are available to 100% of the city's population	Scenario 3	As per data of census 2011, city has 95% properties have Sewer connections. But number of public & community toilets are 15 which does not cater to city's need to avoid open defication.	100% poipulation should have sanitation facilities with public toilets, community toilets as per Set standards to avoid open defication which promotes good healthy environment for the city.	In convergence with SBM, authority has finalised 45 public toilets locations in the city and has also proposal for providing 100% sewerage facility to all HHs. In the Burlton Park & adjoining area (ABD area), 10 public and community toilets (with 50% Male & Female) are proposed to be developed through SBM funding.
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	The following KPIs illustrate the basis for Assessment for waste management at city level **KPIs** **Present Satus** Household level coverage of SWM services No formal arrangement for DTD collection of Waste Extent of segregation of municipal services No formal arrangement by MCJ Extent of municipal solid waste recovered 52 %. Extent of scientific disposal of MSW Nil Extent of cost recovery in SWM services Nil Waste is collected and segregated from source by 900 unorganised Rag pickers and transported to dumping yard by authority. Partial waste (250 Tonnes per Day) is recycled for compost by M/s Punjab Grow more Ltd. but with less efficiency.	The authority envisages to improve the solid waste management, reduces land fill caused by waste so that it is minimal All the solid waste generated should get segregated at source and sent for recycling. Organic waste segregated waste should be sent for composting to be used for gardening in the city Energy creation through inorganic waste is considered.	Municipal Corporation of jalandhar has entered into an agreement with JITF to undertake solid waste management services Door-to-door collection of segregated MSW from waste generators and collection of user charges , creation of a complaint redressal system, creation of a MSW website, installation of vehicle and MSW tracking system through GPS chip, establishment of central monitoring system, establishment of MSW processing and smart energy recovery facility, waste-to-energy facility, smart MSW disposal facility for city. collect waste from DtD to energy. The funds under SBM for city's road sweeping machines and for waste transport is also allocated
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 .	Sceanario 2	Focused group discussions with administrative heads of educational institutions and civil society group have highlighted the safety and security concerns of women & elderly and delay in response mechanism from enforcement agencies. Incidences of petty crime such as theft, snatching and burglary has increased by 21% in 2014 as compared to 2013. City has few vulnerable pockets including Women Educational Instituions where there is high incidence of such petty crimes. The citizen poll analysis also suggest that 58% of the city residents have given priority to the safety and security.	The City has a Vision to create Safe and Inclusive spaces for all residents including women and elderly. The city agencies to be equipped with state of the art ICT based infrastucture for prevention and mitigation of the such incidences. Thus helping people to feel more secure and safe.	A robust City Survellance system is proposed to be installed as a part of Smart City project. Initially the system will monitor 78 vulnerable locations with state of the art cameras and sensors with a centalised data center & Command and Control center with customized dashboards for various line departments including Police, Fire, Health and other lined Departments.

Annexure-3

Annexure 3

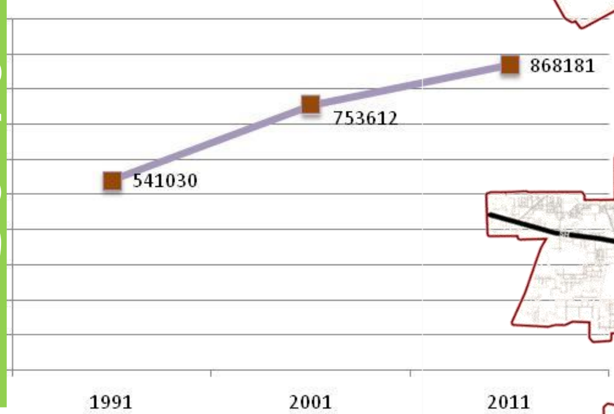
SMART CITY PROPOSAL

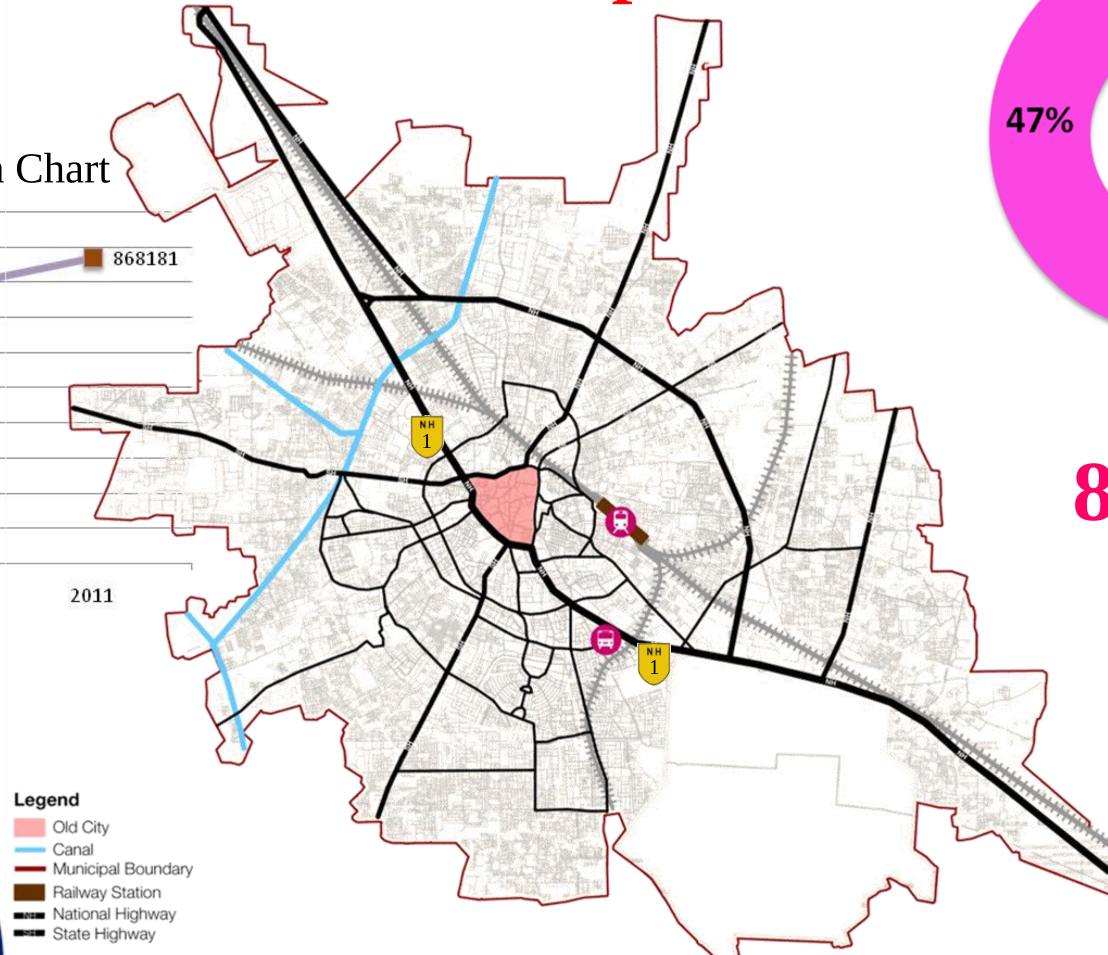
3.1 CITY PROFILE

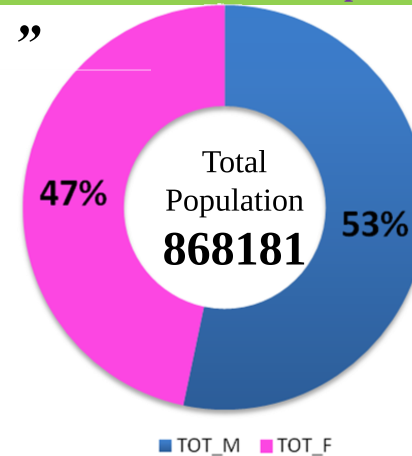
" *Jalandhar* known for its *sports* industry "

30 %

Jalandhar - Population Chart



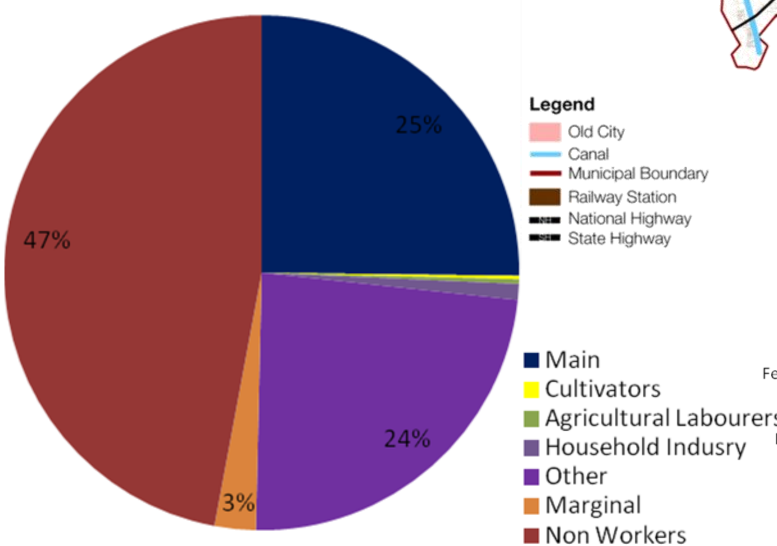




Sex Ratio

876 per 1000

Work Force Division



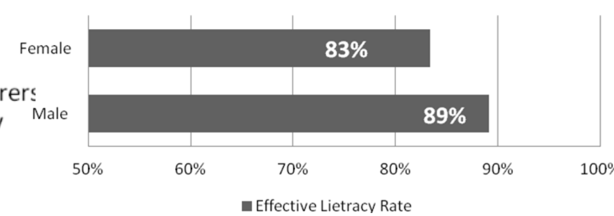
MCJArea

110

Sq. Km

***85.6* PPH**

6,70,852 total Literate Population



***186,009* Households**

***30,170* Slum Households .i.e.**

***16%* of total HH**

3.2a City Vision Development Process

1 CITY PROFILING

Internal Assessment – City Strength

- Identity
- Economic Base
- Cultural Heritage (In-tangible)

Internal Assessment – City Infrastructure

- Transport
- Water Supply
- Solid Waste
- Storm Water & Sewerage
- Power & Street Lights
- Education & Health

2 SWOT

Strength

1. State's biggest Sports & Surgical good manufacturing hub
2. Possesses good Sports Infrastructure

Opportunity

1. Land Availability to develop Sports Hub and Recreational Spaces
2. Potential to tap surging demand for Sports & Fitness goods /equipments
3. Potential for Skill development centers for industrial promotion

3 Citizen & Key Stakeholders Aspirations

Promote Development & Economic Growth (Poll 1)

Priority Sectors for City Improvisation (Poll 2)

CITY VISION

Vision & Context

" Healthy & Productive Jalandhar "
Leading Sports & Manufacturing Hub in Asia

To build up and diversify Jalandhar- **manufacturing based economy, sports culture & existing social infrastructure;** foster a **culture of entrepreneurship;** and develop inclusive places for **living, recreation & leisure** ensuring Jalandhar to be a **Healthy & Productive City to live, work & play.**

Strong Religious & Cultural Heritage - one of 51 Shaktipeeths (seat of Worship) of the Country & hosts annual International Music festival- **Shri Baba Harivallabh Sangeet Sammelan**

Quality Sports Infrastructure – **11** **Sports facilities have potential for development to International Standards**

Produced National & International Sportsmen -
21 Olympians &**12** International in Hockey; **3** Olympians & **12** International in Athletics; **19** International in Wrestling.

Prominent Sports Hub:
80,000 **Soccer Balls supplied for FIFA World Cup 2014 in Brazil.**

97.06% **of Industrial Sector Employment is in Small Scale Industries.**

Five Aims

Vision statement seeks to convey several key messages about what JALANDHAR aspires to be:

A **SPORTS HUB** where the young and talented can benefit from the world class Sports Infrastructure, training & event venues, availability of quality sports goods and channelize their energies into field of sports.

A **HEALTHY, ACTIVE CITY** where everyone can be supported to make healthy lifestyle choices.

ENTREPRENEURIAL & PRODUCTIVE Punjabi city where everyone has the opportunity to fulfil one's potential, to be skilled wealth creator and contribute to the local and wider regional economy.

A city where **MANUFACTURING** is and will continue to be at the heart of the local economy. Up-skill and increase existing manufacturing base.

A **LIVEABLE CITY** with smart and resilient infrastructure that will improve city's environment and make it more sustainable.

SPORTS HUB

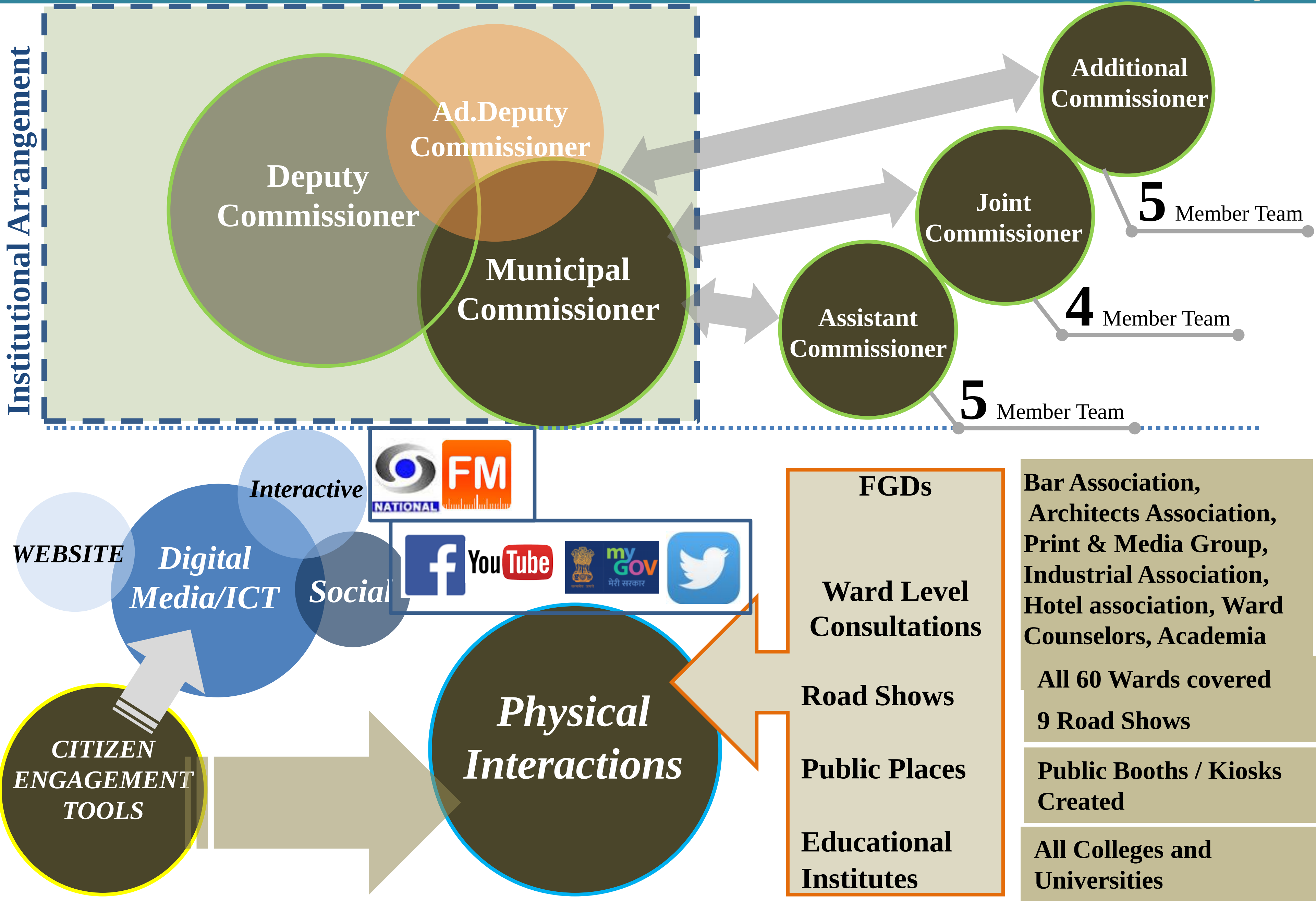
HEALTHY & ACTIVE CITY

PRODUCTIVE CITY

MANUFACTURING CITY

LIVEABLE CITY

3.3a Institutional Setup for Citizen Consultations



3.3b Citizen Consultations-Round-1


1 **50,000** Households consulted

2 **6 Road Shows**




3

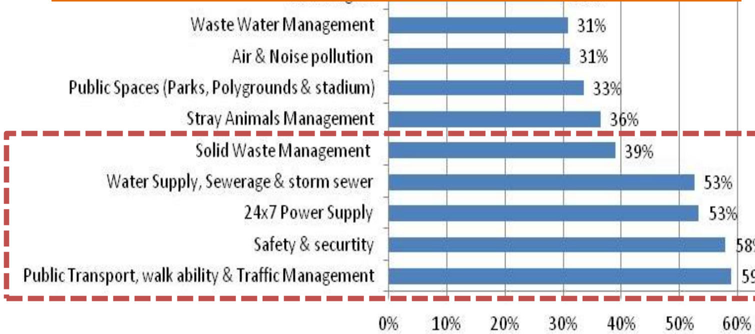
1394 LIKES	280 View	3581 VOTES	42 Tweets


4

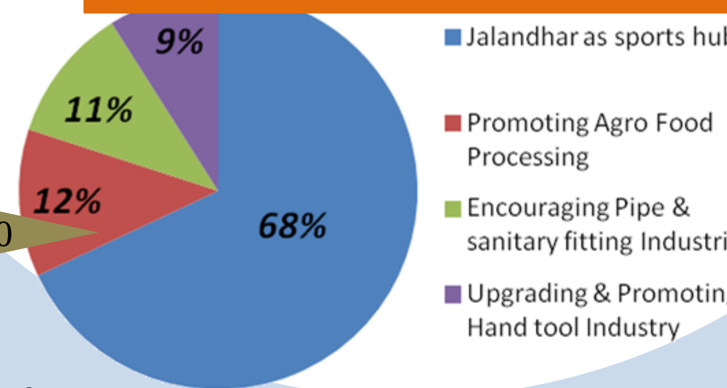
Logo = 93

Essay = 20

POLL 2: For Priority Sectors



POLL 1: For Vision Development



5 **FGDs, Seminar/Workshop - 14,549 Participants**

Public Booths

3.3c Citizen Consultations-Round-2

Online Contribution

Votes > 5,03,247

Hits > 3,50,911

http://www.smartcityjalandhar.org/

Offline Contribution

Road Show = 3

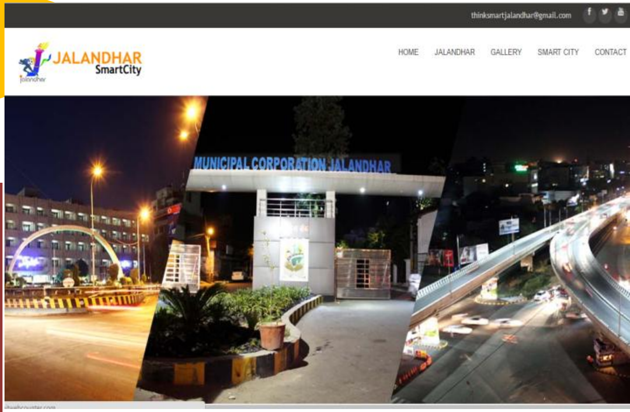
Rally = 1

Bulk SMS= 6,000

Signature Campaign = 682

OUTREACH

5,22,000+



More than 55% of population has participated in citizen consultation process (In Round-1 Total Citizen participation was only 2 %).

City Logo

Online Contribution

Facebook: Reach >4694

Twitter: Tweets = 197

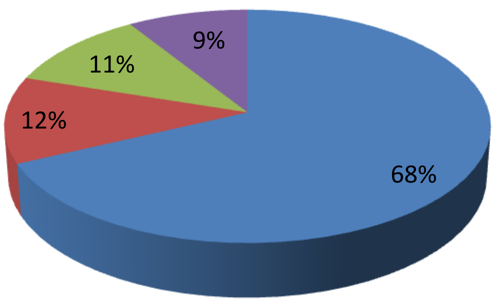
YouTube: Viewers = 2231

Online Suggestion 1348

Citizen Consultation

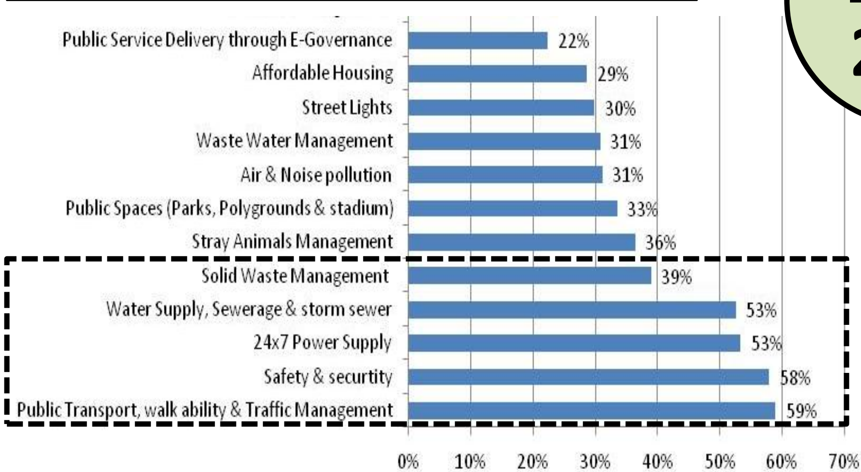
ROUND: 1

POLL 1: For Vision Development



- Jalandhar as a sports hub
- Promoting agro food processing
- Encouraging pipe and sanitary fitting industries
- Upgrading and promoting hand tool industry

POLL 2: For Priority Sectors



Model Town Area 16%

Old City Area 26%

Burlton Park area 58%

ROUND: 2

Which Project should be implemented first as part of Smart City project for Jalandhar City?

Solid Waste Management-45% votes

What things according to you should be done to improve water condition in the city ?

Rain Water Harvesting -95% Votes

What facility would you like to be there in Sports Hub

Multipurpose Stadium -62% Votes

What facility would you like to be there in Canal Area Rejuvenation ?

Trees and Plantation-69% Votes

What facility would you like to be incorporate for Visible Improvement

Organized parking lots -69% Votes

3.4 SWOT

Strength

1. State's biggest Sports & Surgical good manufacturing hub
2. Possess good Sports Infrastructure
3. Rich cultural & religious heritage
4. Established Media Hub
5. Adequate Education & Health Infrastructure
6. Strong NRI Community aspiring Quality of Life
7. Ranked no 28 in nation and No 1 in Sanitation in Punjab

Weakness

1. Public Transport & Parking
2. Storm Water
3. Limited Public / recreation spaces
4. Limited land for infrastructure augmentation

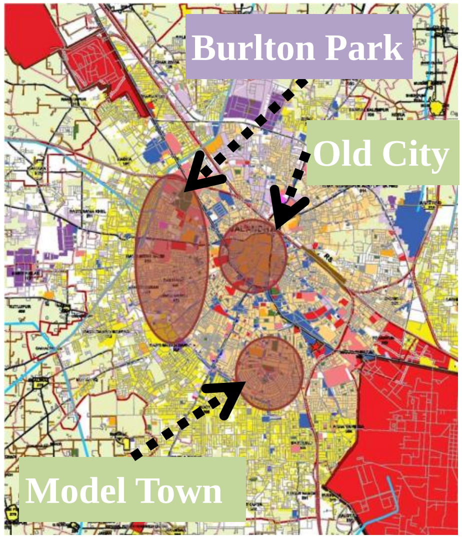
Opportunities

1. Land Availability to develop Sports Hub and Recreational Spaces
2. Potential to tap the surging demand for Sports & Fitness goods/equipments
3. Proximity to Industrial Hubs/Estates
4. Potential for Skill development centers for industrial promotion

Threats

1. Competition with neighboring countries & States
2. Outmigration of young population

3.5 Area Selection Process



Area Shortlisting

Parameters Identification

Evaluation

Selected Area

BURLTON PARK

Citizen Consultation

26% votes

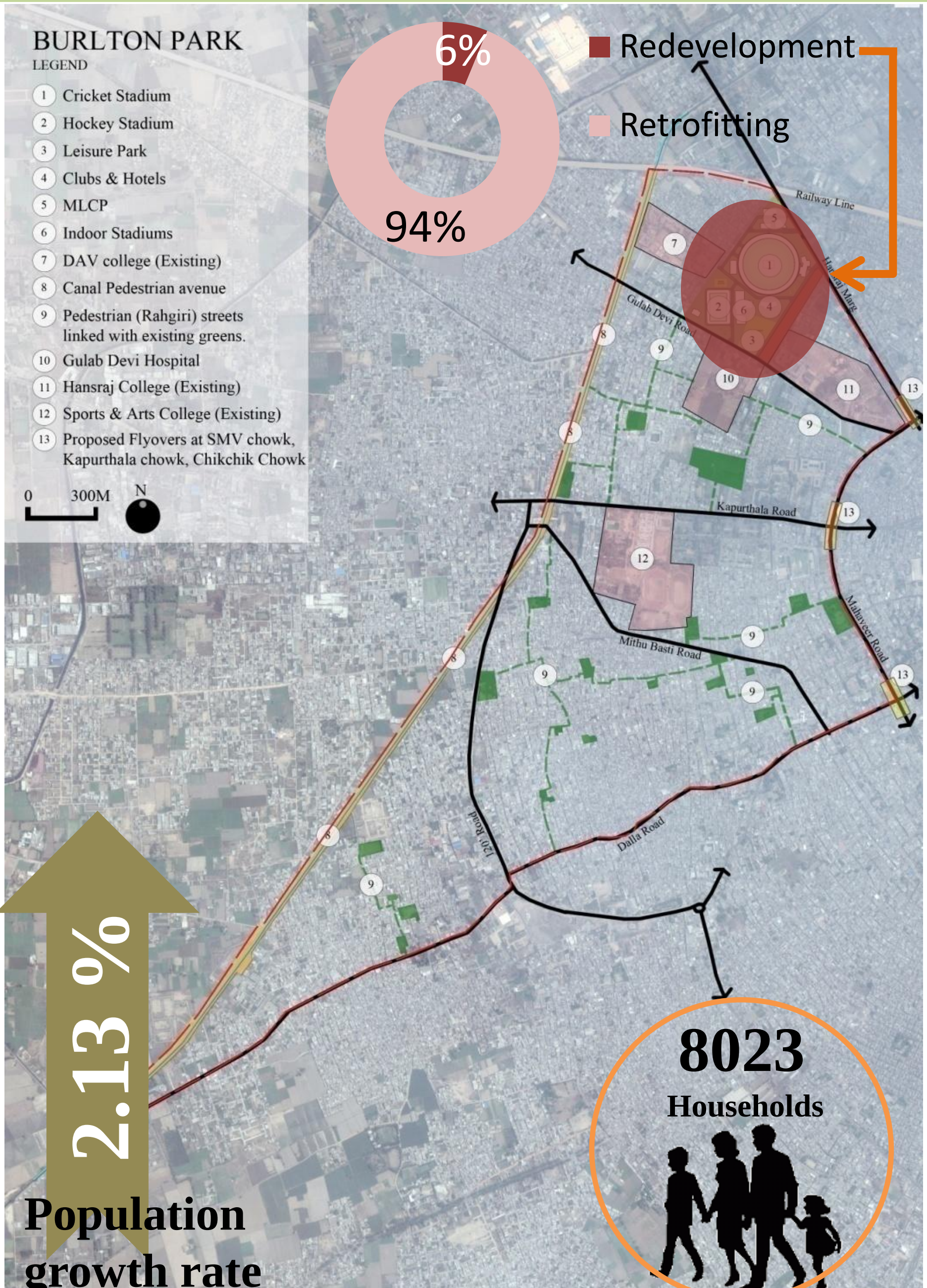
16% votes

58% votes

Parameters	Old City area	Model Town area	Burlton Park & the adjoining area
Alignment with Vision	Development can practically give a facelift to the area but no direct linkage with Vision.	No direct linkage with the City’s vision	Potential area to be developed as Sports Center & Innovation Hub
Mix of Land uses	Mixed land-use with predominantly commercial & residential	Predominantly residential with less commercial	Good mix of residential, institutional, commercial and recreation
Economic Impact on city	Limited economic impact on trading activities	Limited	Significant Job creation possible with sports and R&D infrastructure
Demonstration effect/ Scalability	Positive impact limited to old city	Limited possibility of high impact	Can be a model area, Scalable & Replicable with high impact
Density	High	Low	Moderate
Availability of Land	No	No	Yes

Area Based Development

3.6 ABD: Burlton Park & Adj. Area



Total Road Length

74 Km

Total Area

1010 Acres

Bulton Park better identified as

"Sports Hub of Jalandhar"

Open Spaces

36 acres

Per Capita

2.7 sq.m

Total Canal Length
(In Bulton Park)

4.8 Km

Industrial Units

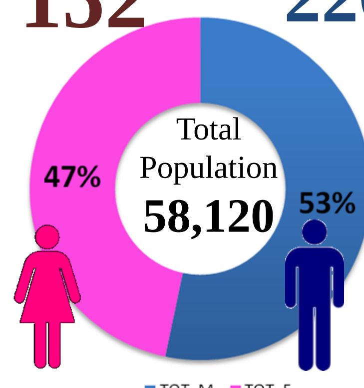
152

Commercial Units

2269

Total Street Lights
(Sodium Vapour)

5000



63 Acres

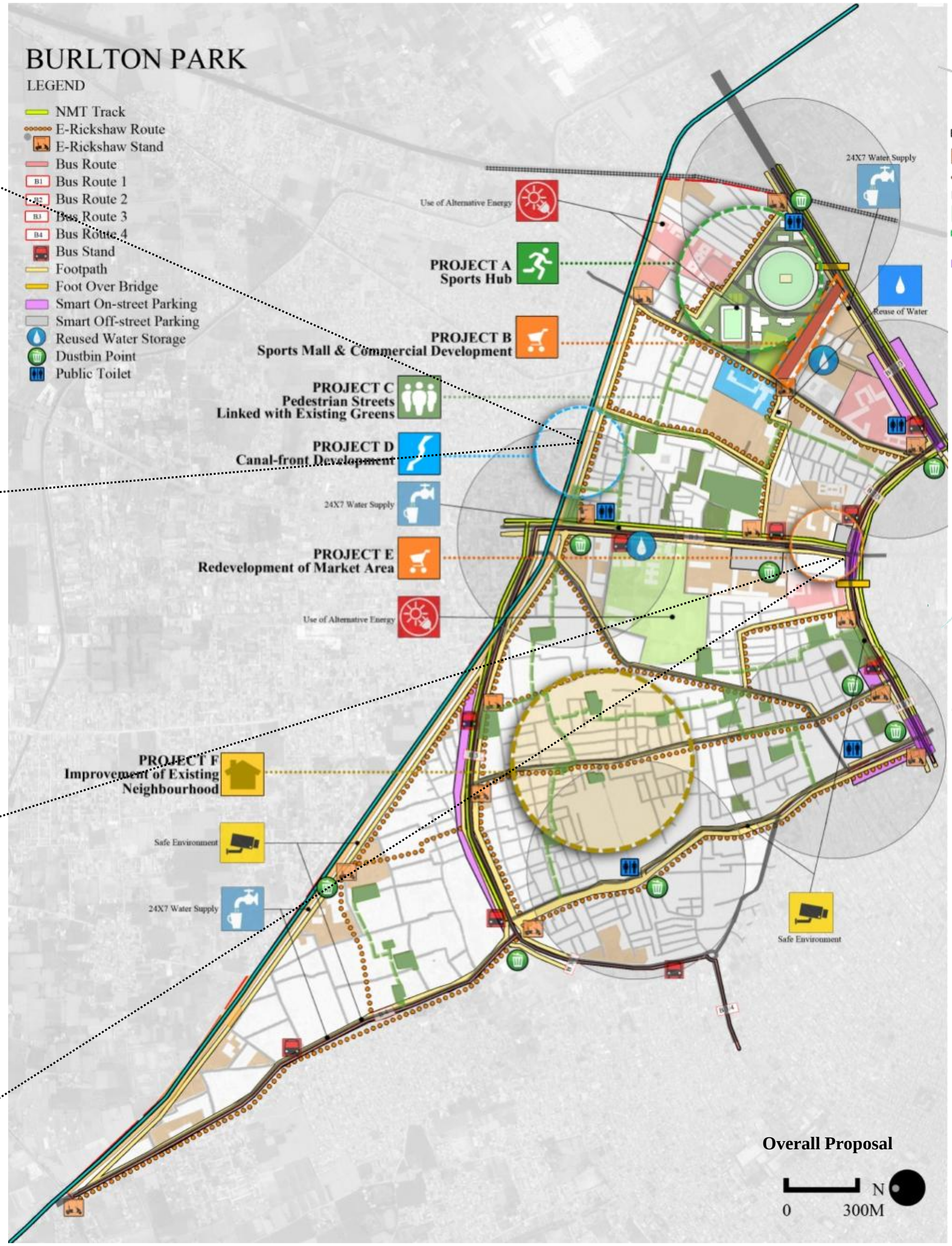
of land in Burlton Park is in possession with Jalandhar Municipality

3.6a ABD: Proposals

Jalandhar SMART CITY Proposal

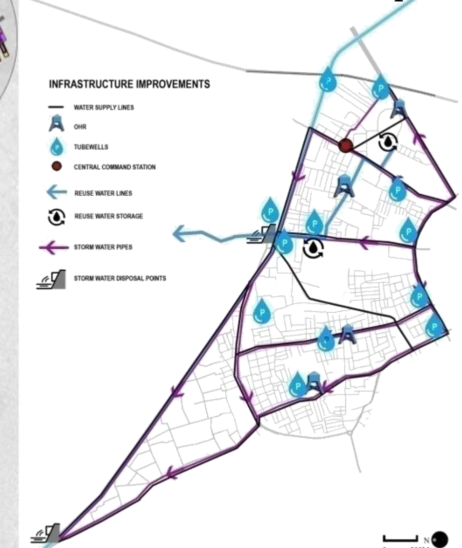
Canal Front Area

Market Area



Infrastructure Proposal Map 1

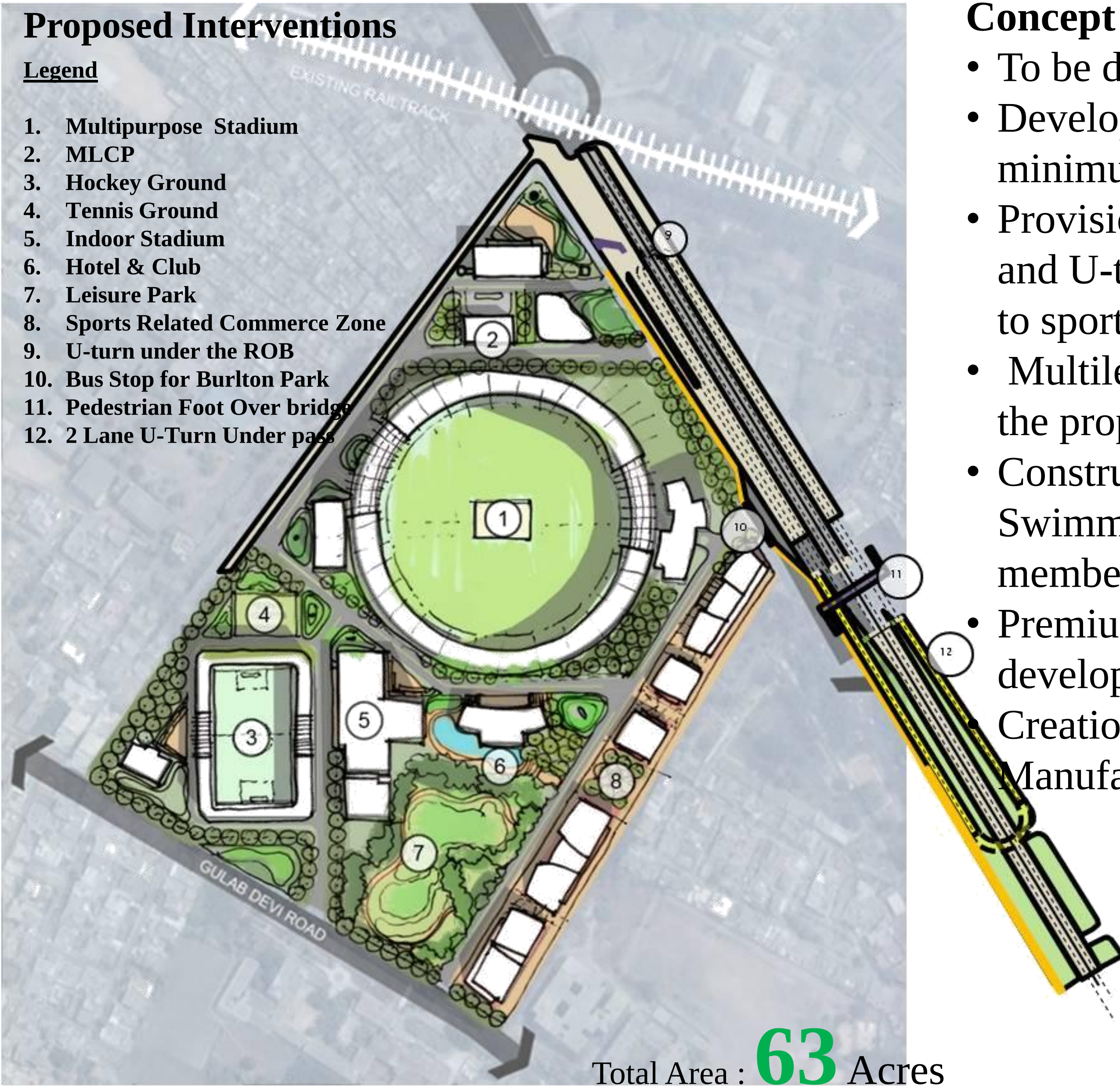
Infrastructure Proposal Map 2



Proposed Interventions

Legend

1. Multipurpose Stadium
2. MLCP
3. Hockey Ground
4. Tennis Ground
5. Indoor Stadium
6. Hotel & Club
7. Leisure Park
8. Sports Related Commerce Zone
9. U-turn under the ROB
10. Bus Stop for Burlton Park
11. Pedestrian Foot Over bridge
12. 2 Lane U-Turn Under pass



Total Area : **63** Acres

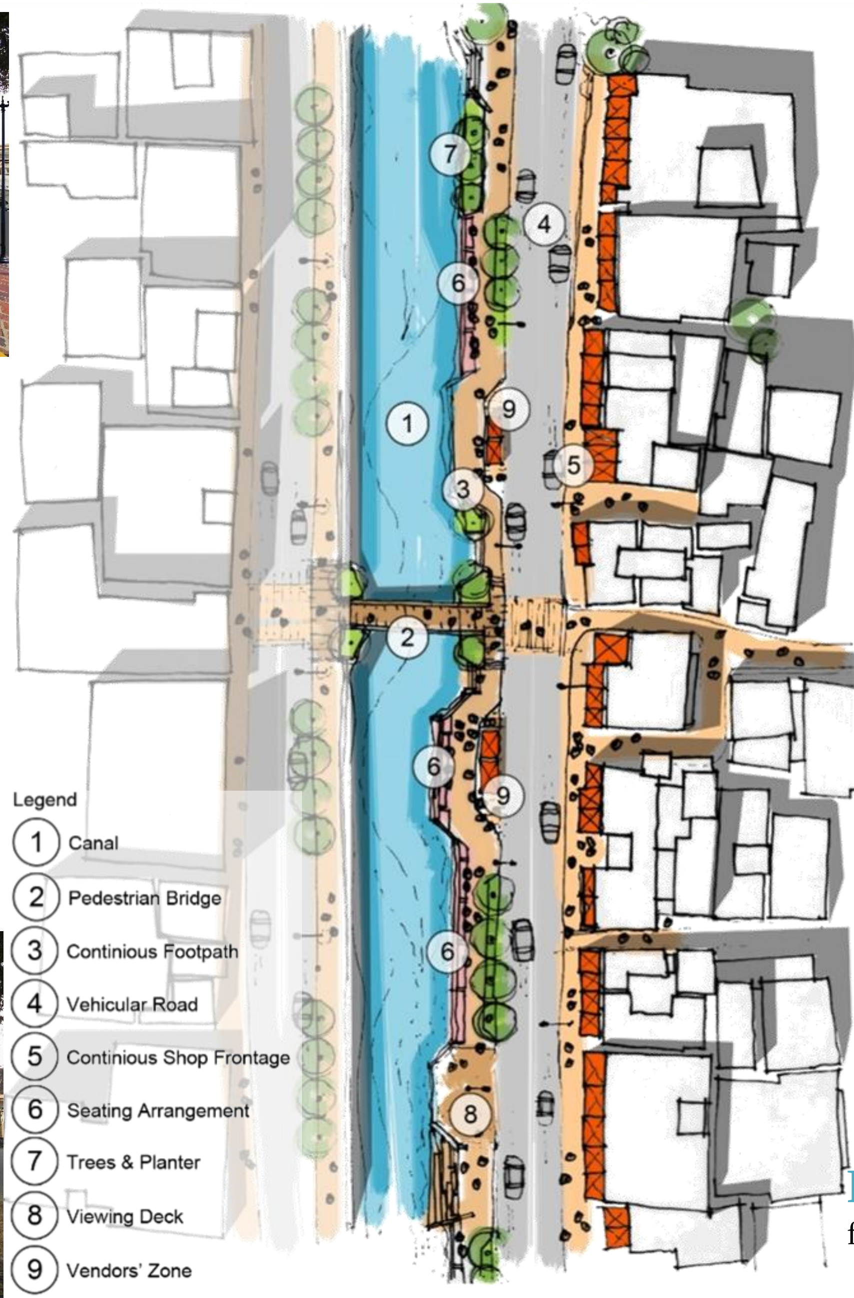
Concept

- To be developed on **PPP** model
- Develop a Multipurpose Stadium of minimum 36,000 seating capacity.
- Provision of Dedicated grade separator and U-turn on HansRaj Marg for access to sports complex
- Multilevel Car parking of 1500 cars in the proposed ABD area.
- Construction of Recreational Club, Swimming pool for minimum 2000 members.
- Premium hotel complex to be developed on 2 acres of land.
- Creation of Marts for Sports Goods Manufacturer

Bist Doab Canal Area Rejuvenation

Proposed Interventions

Existing Condition



24X7 safe, green and walk able promenade

4.8 km Stretch upgradation

40 acres Canal Area Development

Perennial water flow

Inclusion of **differently-abled, children and senior citizen** by providing **2 meter wide footpath with tactile paving and steel railing**

Resource Management

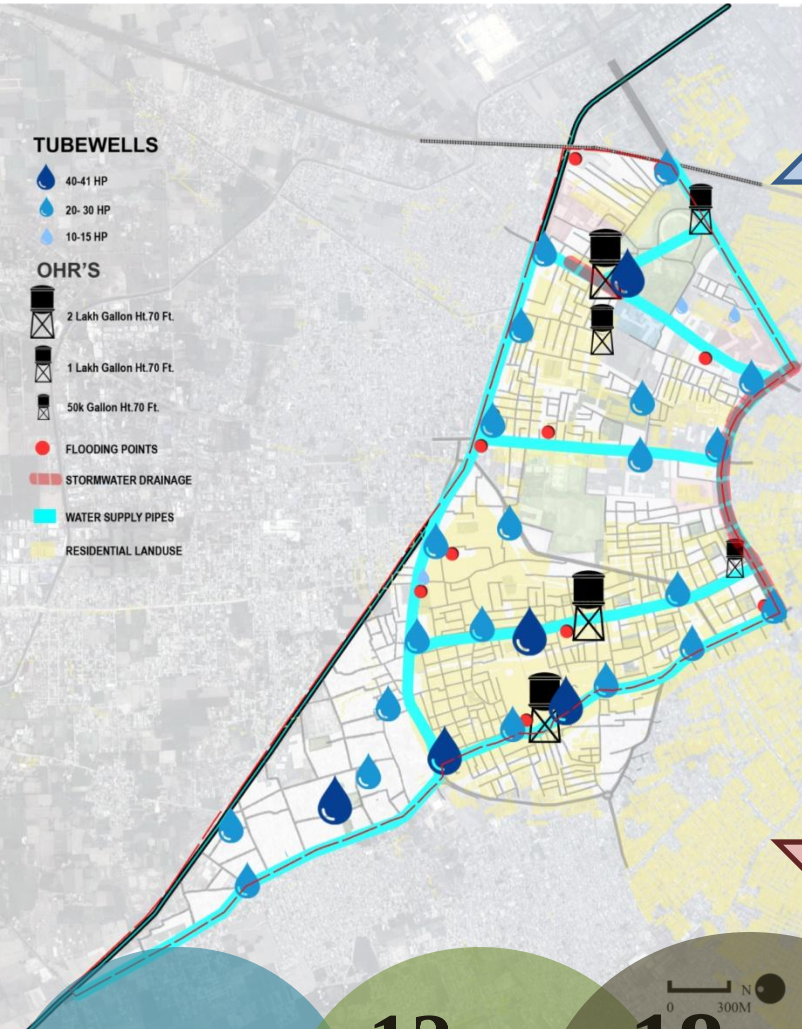
100% LED lights

Sitting spaces at every **250m**

2 nos Pedestrian bridge for better linkages

Facade treatment for existing buildings

3.9a Water Supply Infrastructure: Existing



High NRW

Low Pressure

41 TUBEWELL

12 Hours of Intermittent supply

18 MLD **Ground Water extraction**

1. **OHSR's** There are 6 OHSR's in the area having the combined capacity of 3.85 Million liters. These OHSR's are not being used due to bad condition of supply pumps

2. **Water Quality** There is no provision for checking water quality in the area.

3. **Water Transmission System** Water pumped from tube wells is transmitted through old worn out pipes having dia of 12" to 3"

4. **Customer Connections** Only 741 properties (6.4%) have metered connection.

5. **Summary of Present Water Supply Shortcomings**

a) Inappropriate and inadequate O&M and Water distribution
b) Some of old transmission pipes (Ward 43 &44 lines laid in year 1975-76) need major rehabilitation works
c) Inefficient equipment (high energy consumption)
d) Area Lacks Bulk and District Metering
e) ABD lacks Rain Water Harvesting & Aquifer Recharge

1. Migrating from area based charges to telescopic **volumetric charges**.
2. All the existing pumps older than 20 years, to be replaced, resulting in 16.5% power saving amounting to Rs 18 lakhs per annum
3. 65 kms of water pipe line should be replaced.
4. Construction of storage facility having capacity of 3ML (in addition to 3.86 ML) at different locations to ensure 24X7 water supply.
5. Installation of advanced type of AMR water meters for all consumers. .

47 Chlorinators to check the quality of water

Replacement of 65 kms of water pipeline

10 New OHSRs (3 MLD)

Replacement of 70 DI Valves

10, 000 AMR Readers

16.5% Power Saving

2 RFID Readers

5 MLD Reuse

6. SCADA system (to be converged with AMRUT) for better control & monitoring of water supply system. This will also include installation of District bulk meters to check and control pressures.
7. Reuse of 5 MLD of waste water after treatment from Basti Peerdad STP for uses, such as horticulture, car washing, landscaping in Burlton park there by reducing fresh water demand & inturn ground water depletion

3.10a Sewage – Storm Water Infra: Existing

SEWAGE INFRASTRUCTURE

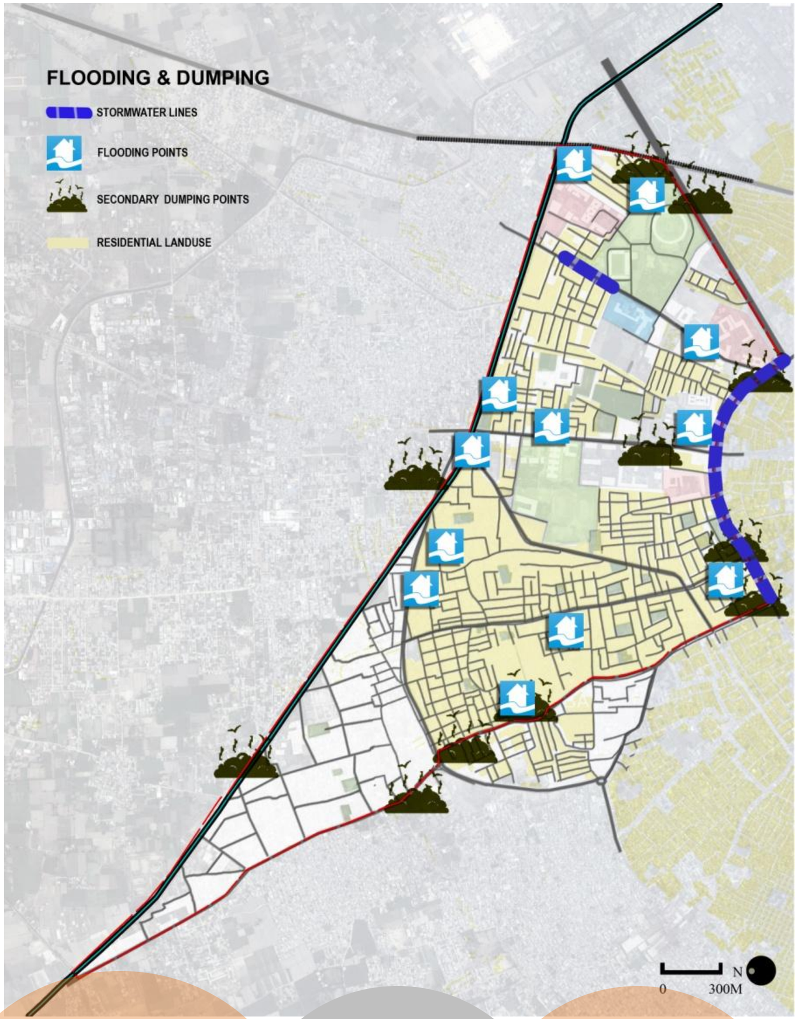
1. **Coverage of sewage network services** The total length of sewerage network in the area is 84 kms. Almost 100 % of the HHs is connected to network.
2. **Sewage Treatment** Complete treatment of sewage is done in Sewage Treatment plant.
3. **Seweage Transmission System** Sewage is transmitted through cement-concrete pipe networks having diameters from 79 inch to 12 inch.
4. **Summary of Shortcomings**

a) Lack of infrastructure for reuse of treated waste water.

b) Dilapidated sewer lines causing leaching and contamination of fresh ground water.

STORM WATER INFRASTRUCTURE

1. **Water logging areas** 20 water logging points in proposed ABD having detention time from 2 to 12 hrs.
2. **Strom water network** In the proposed ABD storm water network is laid only on 2 % of road i.e on Mahavir Marg.
3. **Recharge well** There is only one (non functional) recharge well on Gulabdevi Road having 20,000 lit/ hr capacity.



13.5 MLD Sewage Generation

33% Cost Recovery

3 Public Toilets

3.10b Sewage – Storm Water Infra: Proposal

SEWAGE INFRASTRUCTURE

1. **Replacement of sewage line** Sewage lines (**15 kms**) which have exceeded their design life
2. **Cleaning of Existing sewer** Super suction machine will be used to increase efficiency of sewage system.
3. **Sensors and SCADA** For efficient management & real time monitoring of sewage.
4. **Construction of Public–Community toilets** Constructing **9** public toilets in ABD area to avoid open defecation & improve sanitation condition.

STORM WATER INFRASTRUCTURE

1. **Construction of storm water drains** Constructing major drain under footpaths and internal drains (**70 kms** of length)on all the roads
2. **Rain Water Harvesting** through Recharge wells & creation of Small water bodies at public places to minimise effect of flooding and to increase ground water level. Recharge wells are proposed at **20** low elevation levels.
3. **Sensors** Sensors for auto start and closure with centralized monitoring system, to guide pumps to start whenever the water level increases from certain level.

40 HP Pumps at 20 Low Elevations

9 Public Toilets to be constructed

Existing Situation

Sl. No	Ward number	Local Roads	Sub-Arterial & Collector Road			Arterial Road
		40 watt Tube Points	*70 Watt Sodium*	*150 Watt Sodium*	*250 Watt Sodium*	*400 Watt Sodium*
1	24	7	12	28	8	0
2	37	12	215	392	44	9
3	38	25	146	369	6	0
4	43	38	202	557	21	12
5	44	48	348	388	11	0
6	45	39	216	384	16	18
7	46	16	116	375	10	38
Total		**185**	**1255**	**2493**	**116**	**77**

4125 number of sodium vapor street lights covering almost **90 %** of roads in ABD

Proposal

1. **LED Lights-** Migrating from Sodium Vapour Street lights to LED lights will improve visibility, extend service life and save power.
2. **Poles -** Modification of existing poles vis-à-vis specifications required for LED lights.
3. **Sensors -** Brightness sensor which will turns on when it is dark & Central monitoring station which will control of all street lights

To be Converged with Pan City Proposal for LED street Lighting

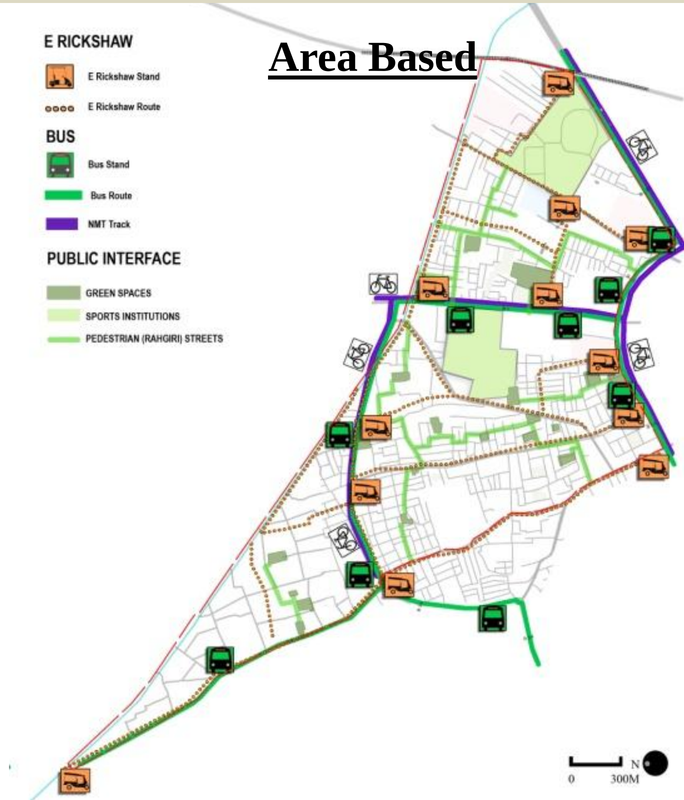
Rs 30 Lakh/ annum
Saving from LED lights

100%
Roads will have LED lights & sensors

3.12a Transport : Area Based Proposal

Following proposals in Transport is considered

- Integration of Public transport buses infrastructure to Feeder system(Trunk and Feeder system)
- Provision of dedicated E-Rickshaw stands to provide maximum Public transport accessibility in the area
- Provision of "Dial a Rickshaw and App based personalized Rickshaw Booking through mobile phones
- E- rickshaws to be fitted with GPS for Real time monitoring and management by SPV
- E-rickshaw will replace old diesel autos in the area to provide haphazard and pollution free environment
- E- rickshaw to be regulated through SPV for Route permits and Licenses to run in the area
- E-Rickshaw booking App to be managed by SPV



Existing

Proposed