

Sustainable Development and Emerging Issues of Jaipur as Sustainable Smart City - A Geographical Perspective



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Abstract

Smart city portal was started with an aim to provide latest news information about the smart city mission of the Government of India. The smart city proposal would include city wide smart urban solutions as well as identification of areas within the city for specific area development and its implementation. Upon shortlisting Jaipur can claim to work towards becoming one of India's connected cities under the smart city initiative. The dream of Rajasthan Govt is to transition Jaipur into a smart and sustainable city in phases. The smart city proposal would include city wide smart urban solutions as well as identification of areas within the city for specific area development and its implementation. JMC will carry out three rounds of stakeholder consultations over the period of next two months. In the round 1 Citizen's views and suggestions would be documented and incorporated to arrive at City's Vision and define goals in terms of their aspiration to see their city in next 20 years followed by strategies to achieve these goals. The stakeholders are expected to highlight suggestions/ideas on improvement of city services such as water supply, transportation system, sanitation, housing, health, education, energy, open spaces, air quality, safety and security etc. In the next stage i.e. Round 2 of stakeholder consultations, which will be carried out during the month of October, JMC will seek similar kind of feedback from citizens on area development and pan city smart solutions. Jaipur citizen and community is its biggest strength. Your views and feedback is very critical and important in this process. So at this stage, the citizens are urged to participate in the forum and share their views on Vision for Jaipur City, Goals and Strategies to achieve this. Your views, opinion and solutions on urban issues faced by Jaipur would not only support a better future, but it will also make Jaipur strong contender for getting shortlisted as one of the first 20 cities in India to implement Smart City Solutions in Phase 1. The present paper tries to explain about how urbanisation is taking place in Jaipur city and emerging strategies and plans in reference to sustainable development of Jaipur as smart city.

Keywords: Development, Infrastructure, Mission, Smart City, Sustainable, Introduction

Jaipur has been selected in the list of 100 Smart cities under the Smart City Mission of Ministry of Urban Development (MoUD), Government of India launched in June 2015. Moving forward the city is in the process of preparing a Smart City Proposal (SCP) as a requirement to participate in the Smart City Challenge, which needs to be submitted within 100 days timeframe. Under the Smart City Challenge, top 20 cities will be selected from 100 shortlisted cities based on the SCP. The smart city proposal would include city wide smart urban solutions as well as identification of areas within the city for specific area development and its implementation. Upon short listing, Jaipur can claim to work towards becoming one of India's connected cities under the smart city initiative. The dream of Rajasthan Govt. is to transition Jaipur into a smart and sustainable city in phases. The conceptualisation of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents. A smart city would have a different connotation in India than, say, Europe. Even in India, there is no one way of defining a smart city. Some definitional boundaries are required to guide cities in the Mission. In the imagination of any city dweller in India, the picture of a smart city contains a wish list of infrastructure and services that describes his or her

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level of aspiration. To provide for the aspirations and needs of the citizens, urban planners ideally aim at developing the entire urban eco-system, which is represented by the four pillars of comprehensive development-institutional, physical, social and economic infrastructure. This can be a long term goal and cities can work towards developing such comprehensive infrastructure incrementally, adding on layers of 'smartness'. In the approach of the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of 'Smart' Solutions. The focus is on sustainable and inclusive development and the idea is to look at compact areas, create a replicable model which will act like a light house to other aspiring cities. The Smart Cities Mission of the Government is a bold, new initiative. It is meant to set examples that can be replicated both within and outside the Smart City, catalysing the creation of similar Smart Cities in various regions and parts of the country. The core infrastructure elements in a smart city would include: i. adequate water supply, ii. assured electricity supply, iii. sanitation, including solid waste management, iv. efficient urban mobility and public transport, v. affordable housing, especially for the poor, vi. robust IT connectivity and digitalization, vii. good governance, especially e-Governance and citizen participation, viii. sustainable environment, ix. safety and security of citizens, particularly women, children and the elderly, and x. health and education. As far as Smart Solutions are concerned, an illustrative list is given below. This is not, however, an exhaustive list, and cities are free to add more applications.

Objectives of the Study

1. To study the City of Jaipur as a smart city
2. To study sustainable smart growth of Smart City Jaipur.

Methodology and Database

The study entails the collection of secondary level data. Secondary data have been collected from the different publications and web surfing.

Study Area

Jaipur is the capital and the largest city of the Indian state of Rajasthan in Western India. It was founded on 18 November 1727 by Jai Singh II, the ruler of Amer after whom the city is named. As of 2011, the city has a population of 3.1 million, making it the tenth most populous city in the country. Jaipur is also known as the *Pink City of India*. Jaipur is located 280 km (174 miles) from the Indian capital New Delhi. Jaipur forms a part of the west Golden Triangle tourist circuit along with Agra (240 km, 149 m). Jaipur is a popular tourist destination in India and serves as a gateway to other tourist destinations in Rajasthan such as Jodhpur (348 km, 216 m), Jaisalmer (571 km, 355 m) Udaipur (421 km, 262 m). The city of Jaipur was founded in 1726 by Jai Singh II, the Raja of Amer who ruled from 1699 to 1743. He planned to shift his capital from Amer, 11 kilometres (7 m) from Jaipur to accommodate the growing population and increasing scarcity of water. Jai Singh consulted several books on architecture and architects while planning the

layout of Jaipur, under the architectural guidance of Vidyadhar Bhattacharya.

Jaipur was planned based on the principles of Vastu shastra and Shilpa Shastra. The construction of the city began in 1726 and took four years to complete the major roads, offices and palaces. The city was divided into nine blocks, two of which contained the state buildings and palaces, with the remaining seven allotted to the public. Huge ramparts were built, pierced by seven fortified gate. Jaipur is a standout amongst the most socially rich legacy urban areas in India. Established in the year 1727, the city is named after Maharaja Jai Singh II who was the primary organizer of this city. He was a Kachhwaha Rajput and ruled the region in the vicinity of 1699 and 1744.

During the rule of Sawai Ram Singh I, the city was painted pink to welcome the Prince of Wales, later Edward VII, in 1876. Many of the avenues remained painted in pink, giving Jaipur a distinctive appearance and the epithet *Pink city*. In the 19th century, the city grew rapidly and by 1900 it had a population of 160,000. The wide boulevards were paved and its chief industries were the working of metals and marble, fostered by a school of art founded in 1868. The city had three colleges, including a Sanskrit college (1865) and a girls' school (1867) opened during the reign of the Maharaja Ram Singh II

Jaipur As a Smart City

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such as water supply, transportation system, sanitation, housing, health, education, energy, open spaces, air quality, safety and security etc. In the next stage i.e. Round 2 of stakeholder consultations, which will be carried out during the month of October, JMC will seek similar kind of feedback from citizens on area development and pan city smart solutions.

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Jaipur's Heritages

1. Hawa Mahal
2. Amber Fort
3. Jaigarh Fort
4. Nahargarh Fort
5. Jal Mahal
6. City Palace
7. Rambhag Palace
8. Albert Hall Museum
9. Abhaneri Step Well

Jaipur's heritage character is acquiring a new identity. The city has made it to the list of top six smart cities in the world. There are 600 entries from 123 countries and Jaipur is the only Indian city to make the cut.

Urban local bodies are the primary agencies for administrating the infrastructural needs of the people and fairly Large Capital Investment decisions being thrust upon them. This study explores the Indian Government's 7.3 billion Smart City mission aimed at applying smart solutions to improve infrastructure and service delivery in Indian cities. It covers various aspects of the internet if Things, including how it will be put to work to create smart energy, smart transportation, smart infrastructure and smart buildings, smart security, smart or connected homes, and smart healthcare. The study provides a summary of the key financial mechanisms and operating models that will be used by the relevant stakeholders in the implementation of smart city projects. Also included are insights into key drivers and challenges impacting smart cities.

Jaipur, popularly known as the Pink City, spans an area of 111 km² and has a population of 30.46 lakh. In the power domain, Jaipur has a consolidated score of 8.17. The city needs to improve its consumer metering, billing and collection efficiency and also take up progressive steps in the utilization of renewable energy sources. In the areas of water, safety and disaster management, the city has consolidated scores of 6.67, 7.33 and 7 respectively. Jaipur is required to considerably improve its technology intervention in water and disaster.

What we need in Jaipur to be Smart

1. Heritage and Tourism
2. Smart Transport

3. Quality of Life
4. Smart Management
5. Latest Technologies
6. Smart Mobility
7. Smart water and Waste
8. Smart Governance
9. Smart Energy
10. Smart Healthcare
11. Smart Buildings

Heritage and Tourism

1. Smart and Green Concepts in Public Areas
2. Smart Heritage Walk
3. CCTV Cameras
4. Smart Parking
5. Smart Technology
6. Restoration in Old Heritages

Smart Transport

1. Smart Signage
2. Intelligent Parking System
3. Smart Cabs
4. Public Bicycles Sharing
5. Public Buses
6. Electric Vehicles
7. Metro

Smart Technologies

1. Smart Power
2. Wi – Fi
3. Charging Stations
4. Data Displays
5. Mobile Transactions

Quality of Life

1. Distances and Transportation
2. Relaxation and Entertainment
3. Civilize Environment
4. Food Choices
5. Health Care
6. Education

Key Recommendations

1. Encourage Open Collaboration and Social Involvement
2. Be more citizen-Centric
3. Practice Land Pooling
4. Convene a Smart City Stakeholder Group
5. Advocate Shared Services
6. Identify the Right Funding Model
7. Recognize the Right Business Models

Infrastructure plays a major role in the urban development. Some cities have fully grasped the possibility of becoming "Smart City". Smart Cities can be identified and ranked along the six main axes or dimensions.

1. Smart Economy
2. Smart Mobility
3. Smart Environment
4. Smart People
5. Smart Living
6. Smart Governance

Smart City Project of Jaipur

The city of Jaipur would rank number one in the Smart City Mission. She also said that under the 'Swachh Bharat Mission' too Rajasthan is ahead of other States. Bikaner has already become 'Open Defecation Free' (ODF) district in the State with as many as 7 other districts shortly to become ODF.

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Highlights

Jaipur is selected as the first lighthouse city of South Asia catapulting it into an elite club with cities like Hamburg, Barcelona and Adelaide. This initiative in partnership with CISCO has created I.T. enabled services, Wi-fi, hotspots installation of video surveillance cameras, interactive kiosks, remote e-governance solutions and parking management systems.

Solar Power Plants (Grid interactive Type) first phase was launched today. Few government buildings will be covered initially under this project. A project of restoration and rejuvenation of 14 Baoris (traditional step well) so as to develop additional sources of water, augment ground water table and preserve the heritage is being taken up at an estimated cost of Rs 4.37 crores contributed by JDA was also launched.

A project of Real Time Information display system 'Public Information System (PIS) in Bus-Q-Shelter (BQS) for providing live information to the commuters has also been started today. The project has been started in 10 different locations and it will be extended further to cover all the Bus-Q-Shelters.

The government is keen to promote non-motorized transport in the city. Public Bike Sharing Scheme is being brought in Jaipur on PPP mode. Project worth Rs. 42 crore are being implemented in Jaipur by JDA which shall provide smart solutions to the citizens. This includes completion of WIFI hotspots at 29 various public locations across the city, installations of Video Surveillance Cameras with analytic solutions at 20 places, installations of Virtual Interactive Kiosks at 4 places and Remote E-Governance solutions at 2 places, parking management at 4 locations at busy market places and malls with a total cost of Rs.18 crores in first phase.

Area Based Development

Sustainable Mobility Corridor

The estimated cost of the project is Rs 132 crore aims to provide Non-Motorized Transport facilities and provide safe road infrastructure for pedestrians, cyclist, differently abled citizens and motorist.

Heritage and Tourism

Adaptive reuse of heritage buildings – Jalab Chowk, town hall & old police headquarters including development of open space for Govind Dev Ji temple.

Smart Civic Infrastructure

1. Waste water recycling & rain water harvesting for public buildings, monuments and parks.
2. Efficient water Management using smart meters and automated online residual chlorine monitoring system.

3. Smart toilets, smart collection of solid waste & citizen awareness campaign.
4. Assured electricity supply with 15% from solar energy.
5. Safety of citizens include video crime monitoring, incident alert app, helpline and SOS mobile number, panic buttons.
6. GIS based property inventory & online payment of property tax.
7. Air quality & weather monitoring with an app.
8. Entire area to be WiFi enabled.
9. Mobile application to report street problems like traffic violations, solid waste issues, etc.

Pan City Proposal

Smart multi-model mobility

1. Open Standards based fare card/ticketing system.
2. Jaipur multi model public transit central operations & management center.
3. Passenger information / Journey planning.

Smart Solid Waste Management (SWM)

1. Operations monitoring of street waste collection and cleaning.
2. Fleet and asset management system.
3. SWM operations management centre.

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