जयपुर नगर निगम

JAIPUR

City Fact Sheet

SUSTAINABLE CITIES INTEGRATED APPROACH PILOT (SCIAP)

APRIL 2021

UN HABITAT
FOR A BETTER URBAN FUTURE

UNIDO

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Sustainable Cities: Integrated Approach Pilot

URBAN SUSTAINABILITY ASSESSMENT FRAMEWORK

City Fact Sheet - Jaipur

Prepared for:

Ministry of Housing and Urban Affairs
Government of India
सत्यमेव जयते

Jaipur Municipal Corporation-Greater

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UNIDO

Prepared by:

UN-HABITAT
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About SCIAP and USAF

The Sustainable Cities Integrated Approach Pilot (SCIAP) project, funded by GEF-6, is being implemented by UNIDO and UN-Habitat, in partnership with the Ministry of Housing and Urban Affairs (MoHUA) of the Government of India in Bhopal, Guntur, Jaipur, Mysuru and Vijayawada. The main goal is to infuse sustainability strategies into urban planning and management at the city level and create an enabling climate for investments in green infrastructure that would reduce greenhouse gas emissions, improve service delivery and enhance the quality of living for all citizens, thereby building resilience and strengthening the governance capacity of the cities.

A major component of the project is to develop an Urban Sustainability Assessment Framework (USAF) for spatial planning in India which is designed as a decision support tool for municipal commissioners and urban practitioners to support sustainable and resilient urban planning and management of cities in India. Urban diagnostics based on USAF cover 12 sectors, namely, urban form-public space and safety, housing and property, water, sanitation, solid waste management, transportation, social facilities and services, environment and ecology, clean energy, disaster risk management, governance and data management and finance and economy. The performance of these sectors is measured using national and international benchmarks, further refined by consultations with the pilot cities. USAF 'spatializes' several indicators for granular planning and to identify inequalities in service delivery, resource allocation, accessibility of essential utilities, and recreational opportunities, among others, within a city.

Furthermore, giving emphasis to spatially-informed planning, USAF equips city managers to model area-based development strategies and assess their impact on improving sectoral performance against benchmarks. Area-based development strategies developed through USAF, when combined with a financing plan, lay the ground work for capital investment plans thereby providing a critical link between urban planning, finance and governance. It can also help decision-makers prioritize projects to effectively direct resources towards targeted areas for maximum impact and benefit.

About this Fact Sheet

This fact sheet showcases preliminary analysis that has emerged after applying the USAF to Jaipur. It highlights how the city fares across twelve USAF sectors on its primary indicators, draws attention to where the city functions well and aspects that need attention as per the benchmarks of the USAF. For detailed strategic diagnosis for Jaipur, please refer to the City Profile and Diagnostic Report.

Please note that the data reported for the city is for the year 2018-19 & 2019-20 (data sourced from JMC SLB 2019-20/ notes on JMC development activities from various statkeholder consultations (2020) / Swachh Survekshan 2020/ Municipal Performance Index (2018-19)/ Ease of Living Index (2018-19)/ Draft Comprehensive Traffic and Transportation Study/ OpenStreetMap/ USGS (LandSAT Imagery)/ Global Human Settlement Layers (GHSL) from European Commission. Some of the data has also been sourced from the Jaipur District Census Handbook 2011).

USAF SECTORS

01 PUBLIC SPACE, SAFETY AND URBAN FORM

02 HOUSING AND PROPERTY

03 WATER SUPPLY

04 SANITATION

05 SOLID WASTE MANAGEMENT

06 TRANSPORTATION

07 SOCIAL FACILITIES AND SERVICES

08 ENVIRONMENT AND ECOLOGY

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10 DISASTER RISK MANAGEMENT

11 GOVERNANCE AND DATA MANAGEMENT

12 FINANCE AND ECONOMY

Framework Scoring

Each scoring range is based on benchmarks derived from national standards and linked to global standards wherever possible. For quantitative indicators, indicator value over and above the set benchmark is categorised as excellent performance. The USAF has evolved from an initial 3-point to a 7-point scoring gradient. The range of 3-point scale (low-medium-high) has been used to interpolate and expand to a 7-point scoring scale (very low to excellent performance). The division of scoring range for continuous variables (or indicators) into seven defined breaks is based on equal intervals between the threshold and benchmark set for each indicator. On the other hand, indicators which are discrete or qualitative in nature are bifurcated only into three classes (very low – medium – excellent performance) and binary questions (yes/no) are classified as either very low or excellent. Indicators assessed on a 7-point scale result in a performance score which is less coarse in nature and better represents the continuum, making it more reliable than a narrower 3-point scale. Expanding the mid-range performance (lower medium to upper medium) especially, captures the variation better for average performance city values.

For representation, the range of performance follows a spectral colour ramp and varies from two shades of red (very low - low) to two shades of green (high - excellent) with three shades of yellow in between (lower medium - medium - upper medium).

Very Low	Low	Lower Medium	Medium	Upper Medium	High	Excellent
(0)	(1)	(2)	(3)	(4)	(5)	(6)

There are some indicators that are not included in the performance score of the city and are labelled as 'descriptive indicators' in the benchmark column. These indicators can either be quantitative (with specified formula to measure it) or qualitative (yes or no), but do not have a set benchmark for scoring. The information from these parameters along with few other benchmarked indicators would be helpful in formulating the profile of the city.

Indicators for which data is either currently awaited or is unavailable are denoted as '**--**' against the depicted indicator.

Descriptive Indicator	(- -) Data awaited/unavailable

The USAF serves primarily as a guide for orienting the priorities of a city and directing its resources to meet the desired vision and goals as outlined in its master plan. The conclusions of the framework thus point to the weak spots with respect to the city's sustainable development goals and efforts to build resilience. As part of SCIAP, following the City Profile and Diagnostic Report, a Sustainable City Strategy shall also be prepared which would serve as the spatial strategic plan for the city with key actions and interventions to achieve the its vision and goals.

JAIPUR

Jaipur is located about 280km from the national capital, Delhi, and is well-connected by road, rail and air. Jaipur was founded in the year 1727 and is one of India's first planned cities. The old walled city today lies at the core of the city of Jaipur and was declared a UNESCO World Heritage City in 2019. It is the one of the most visited places in India attracting about an average of 3000 national and international tourists every day. Jaipur is also blessed with dominant natural features like the Aravalli hills that wrap around the northern and eastern periphery.

Jaipur Municipal Corporation (JMC) is the civic body that governs the city. In the year 2019, the process of dividing the administrative body was initiated with the intention of enhancing focus on tourism and heritage. JMC-Heritage consists of 100 wards and JMC Greater consists of 150 wards.

37.07 Lakhs
POPULATION

80 PPH
POPULATION DENSITY

484.64 SqKm
AREA

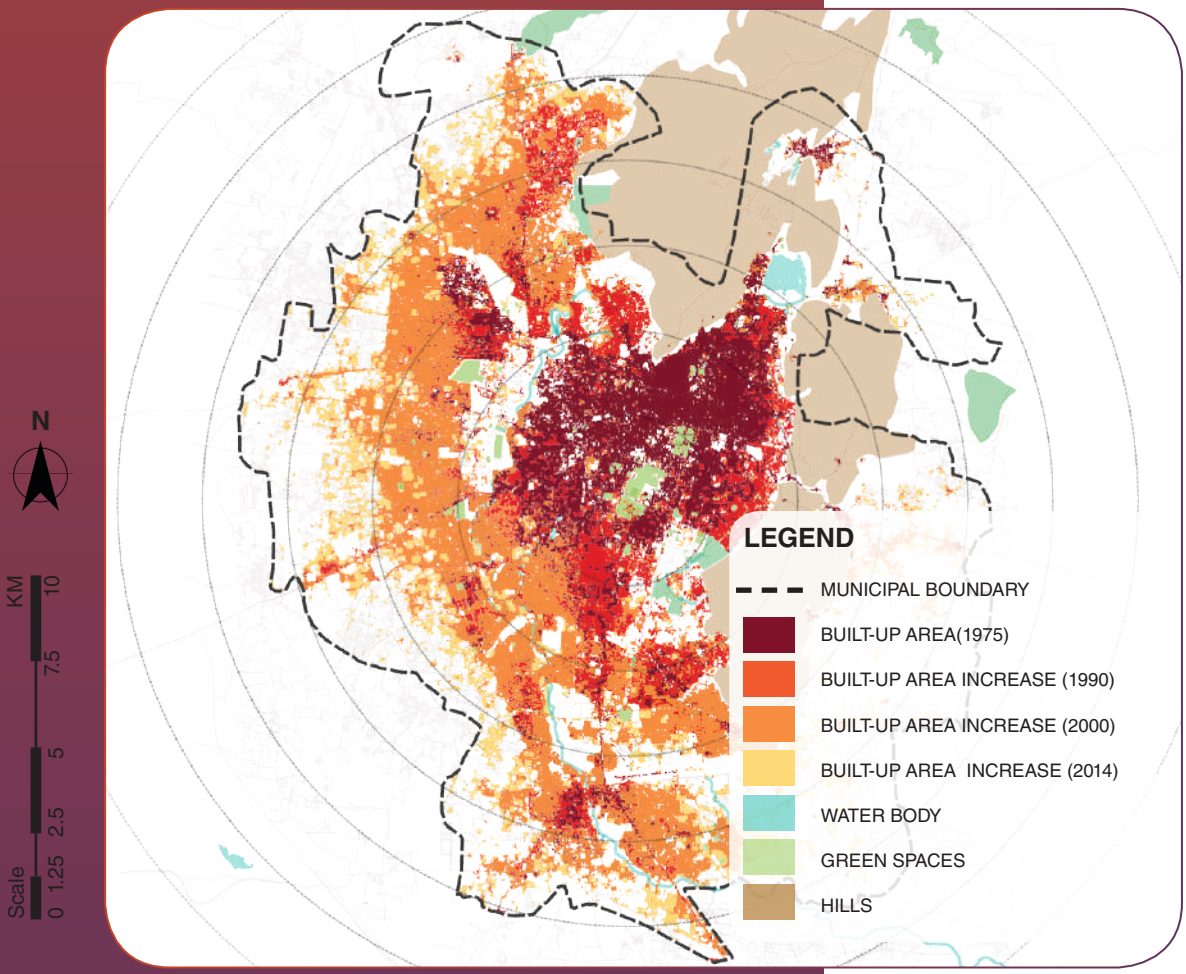


Figure 1.1: Multi-temporal classification of built-up presence (1975-2014)

The area of JMC is 484.64 sqkm with an estimated population of about 37.07 lakhs (2019). The overall population density of the city is 80 persons per hectare (PPH) and ward density ranging between 50 PPH – 582 PPH. The city had experienced a decadal population growth rate of 43% between 1991 – 2001 and 27% between 2001 – 2011. The population growth rate between 2011-2019 is estimated around 20%.

Figure 1.1 indicates that until the beginning of the millennium, Jaipur was centered around the walled city area contained within a 5km radius. However, between the years 2000 and 2014, the city grew by about 50% from the previous decade with built spaces reaching beyond the 15km radius.

Due to the presence of Aravalli Hills on the north-eastern side of the city, urbanization is directed towards the south and west. However, there are also some sparse developments on the eastern side beyond the hills.

The growth rate of Jaipur's population has been slowing down since the year 2001, but the trend of footprint growth rate suggests increasing urban sprawl.

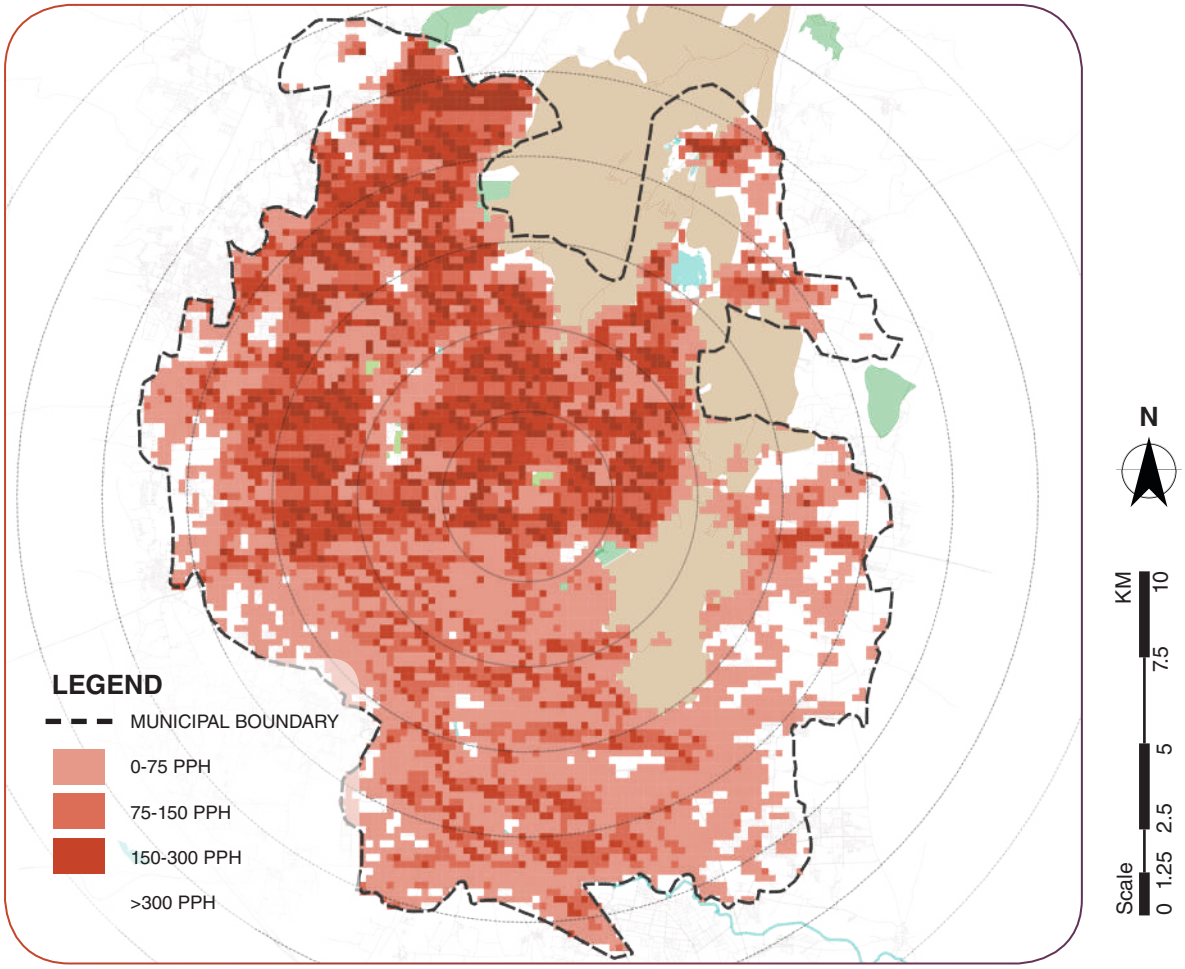


Figure 1.2: Residential population density estimates (2015)

01 PUBLIC SPACE, URBAN FORM & SAFETY

1.46 sqm
green area per capita

8% decrease
in built-up area per person in last decade

45% population
has access to parks and open spaces within a walking distance of 800m

100% reduction
in agriculture land in comparison to the last revision of master plan

94.8% roads
have streetlights

As per temporal data on built-form footprint, Jaipur is currently experiencing urban sprawl.

There are large contiguous areas within the JMC boundary that have almost no access to green pockets for its residents which has a direct impact on the health and quality of life.

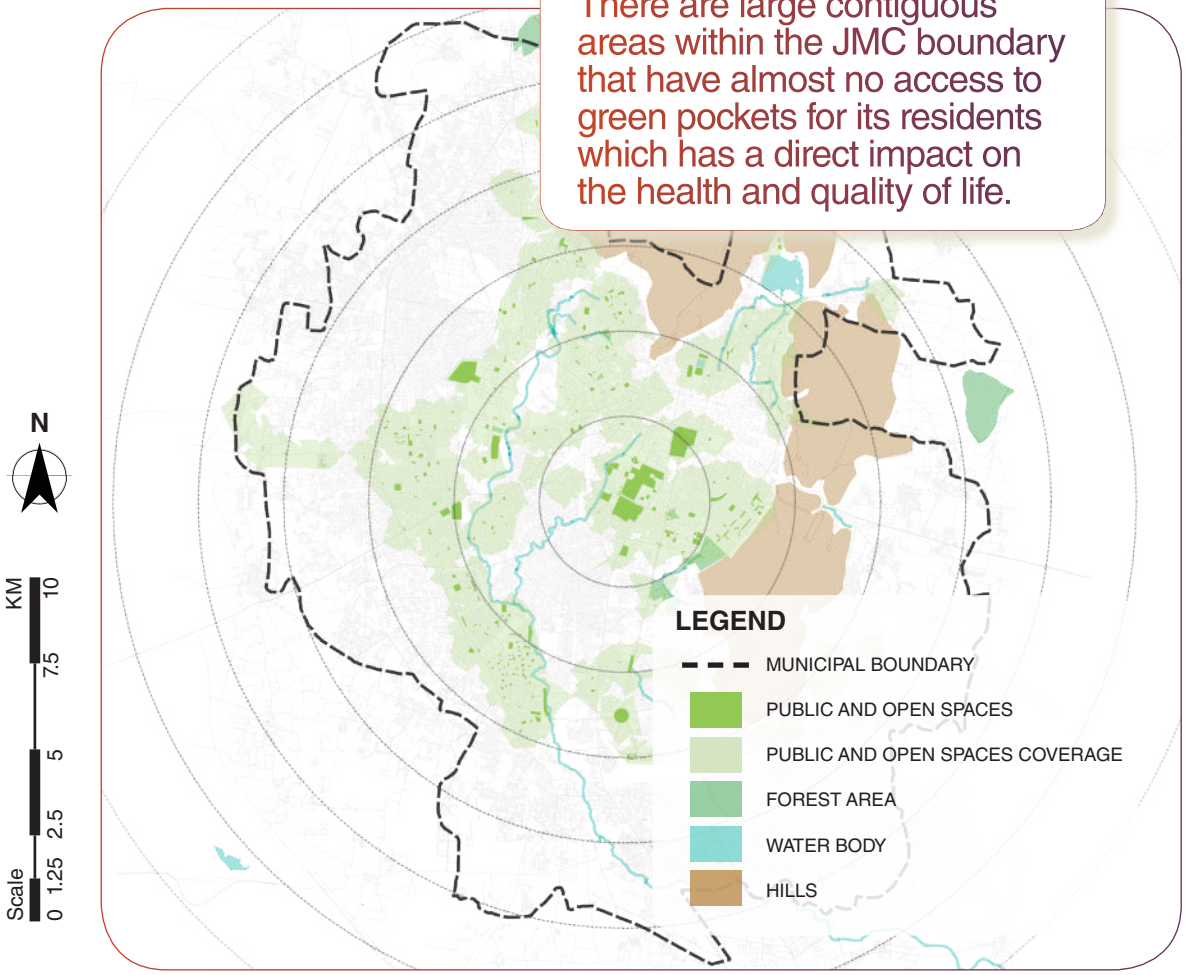


Figure 1.3: Population with access to park, public and open spaces within a radius of 800m

02

HOUSING AND PROPERTY

10.3% households living in slums

- -% city area falls under slums/ squatter settlements

As per data from JMC, There are 211 slum settlements distributed all over Jaipur.

Large infrastructure improvement projects such as the Dravyavati riverfront, although well-developed with parks and open spaces, have not actively addressed the inclusion of informal settlements.

03 WATER SUPPLY

82% households
have piped water supply connection

25%
extent of non-revenue water

No
water resource assessment and management

77% water samples
comply with national potable water quality standards

Jaipur's main water supply source, Bisalpur dam, is located about 120km away from the city and is highly vulnerable to droughts. Thus, it is imperative to prepare a water resource management plan for the city and identify alternate sources and SOPs prepared to handle extremities.

04 SANITATION

86%
sewerage connectivity

100% wastewater samples
passed the specified secondary treatment standards from the total samples collected in a year

93% households
have access to toilet facilities

- -% treated
before discharge to surface water bodies

15.49% recycled water
is used

UNIDO is currently working with JMC-Greater on the Delawas STP upgradation project which would positively impact GHG emissions in the city.

05

SOLID WASTE MANAGEMENT

23% dry waste
separated and classified for recycling/material recovery

65% total waste
disposed off in open dumps / controlled dumps, water bodies / is burnt

22% wet waste
collected is processed in compost plant

- -%
solid waste used for energy recovery (incineration)

>10%
of landfills undergoing remediation/remediated scientifically

Solid waste management is a key priority sector for the city and needs immediate attention in the area of waste segregation and processing including IEC.

Additionally, cost recovery in solid waste seems to be alarmingly low with a recovery rate of only 2.86% (SLB 2020)

06 TRANSPORTATION

35% population
has access to public transportation within 500m

14.4% road length
have footpaths with width more than 1.2 m

- - % increase/decrease
public transport ridership

- - km cycle track
per 1,00,000 population

3.82 km/sqkm
road density

- -% shared vehicles
running on clean technology

Improvement of urban mobility is one of the highest mid- long term priority of the government Jaipur attracts several outsiders each year and especially needs improvement its public transit system. The city also requires an NMT network plan to address the needs of its pedestrians and cyclists as well as air pollution.

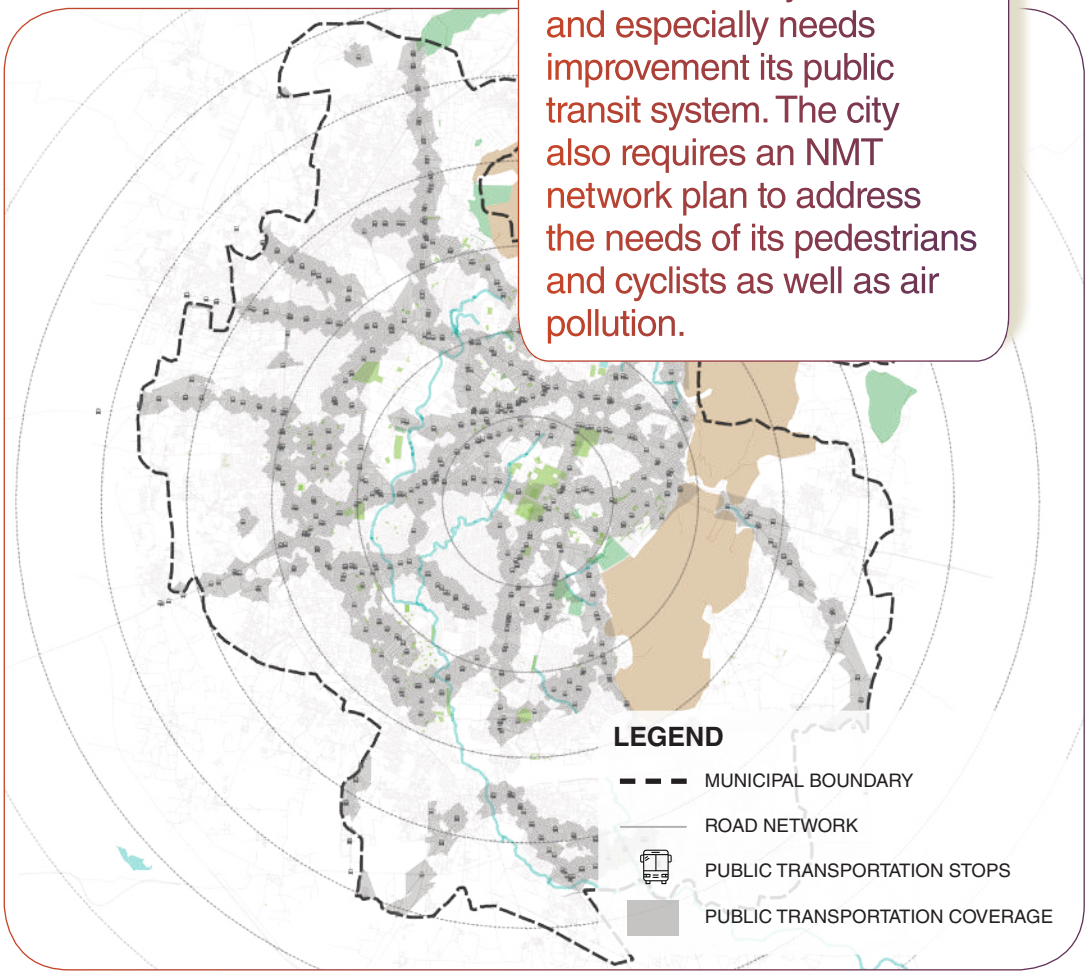


Figure 1.4: Population with access to public transportation within a radius of 500m

07 SOCIAL FACILITIES AND SERVICES

58% population has access to healthcare services

--% population has access to primary and secondary schools

77% female literacy rate

--% reduction in BPL cards

There are a total of 490 accredited public healthcare facilities across Jaipur. However, in the terms of accessibility to the population, as visible in the map, there are several under-serviced pockets in the city.

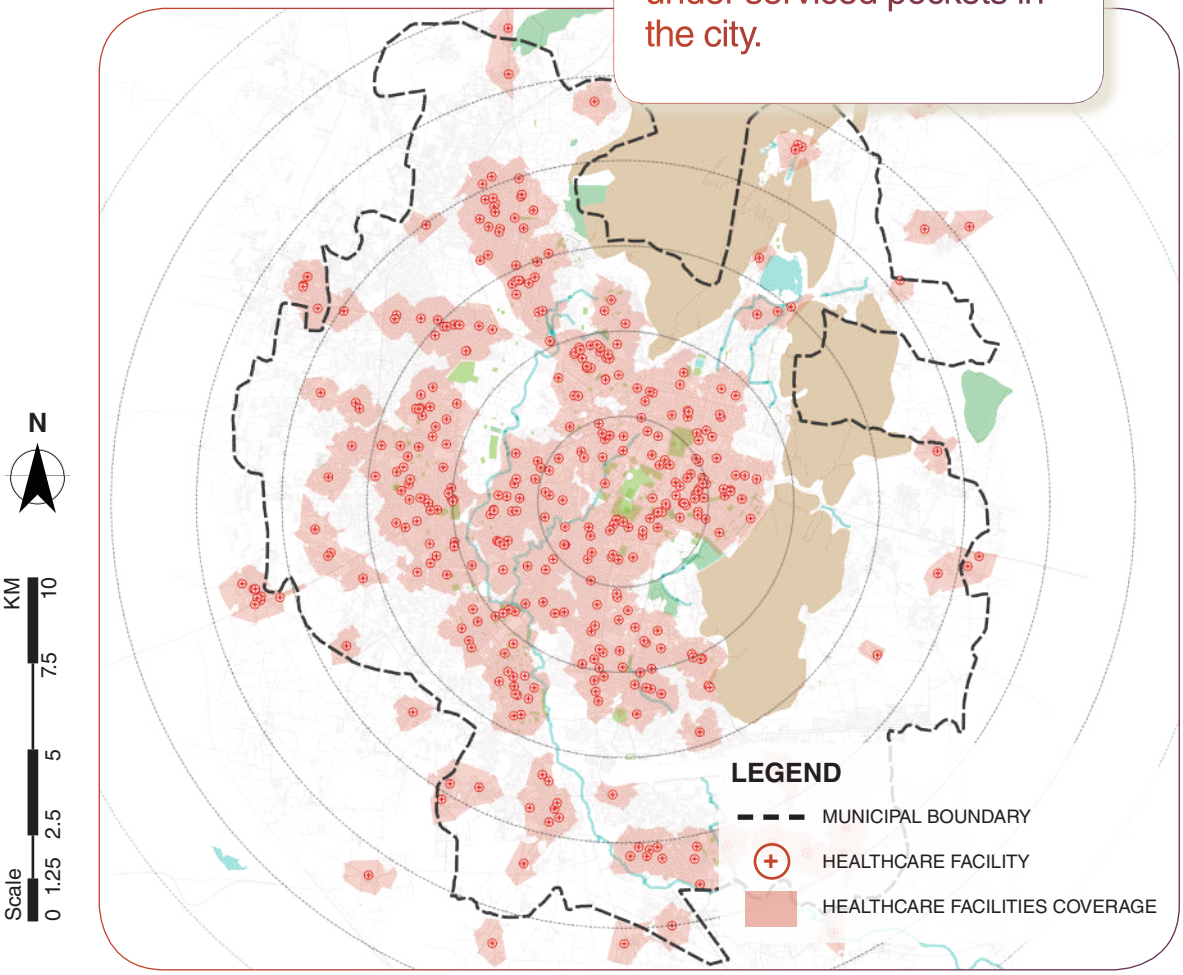
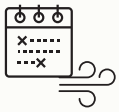


Figure 1.5: Population with access to healthcare facilities within a radius of 800m

08 ENVIRONMENT AND ECOLOGY

Presence of
Clean Air Action Plan



310 days
above mean AQI level in the year 2019

No
GHG emission monitoring system

- - %
tree canopy cover

No
local biodiversity strategy and action plan

All 3 incentives
for Green Buildings

51,36,817 $MtCO_2e$
annual (GHG) emissions

The total emissions (including CO_2, CH_4, and N_2O) added to 51,36,817 Mt CO_2eq which the highest among the five pilot cities in consideration.

09 CLEAN ENERGY

- - % households
with authorized connection to LPG for cooking

- -% households
have access to renewable energy and technology

0.14%
renewable energy share in total energy consumption

1395 kWh /capita
energy use in a year

44% streetlights
are energy efficient

The stationary energy sector/energy use emitted 33,82,336 $MtCO_2e$, accounting for 66% of the total GHG emissions.

10 DISASTER RISK MANAGEMENT

No
Disaster Management Plan at city level

No
hazard vulnerability maps/ risk maps (at city level)

Jaipur lies in one of the hottest regions of the country and is highly vulnerable to heat waves and droughts. Additionally, the city is also prone to urban floods.

Hence, there is an urgent need of a city level disaster management plan with updated hazard and vulnerability mapping.

-- % households
at risk due to placement in areas of non-mitigable risk

~40% buildings
have access to emergency fire services within a distance of 4km

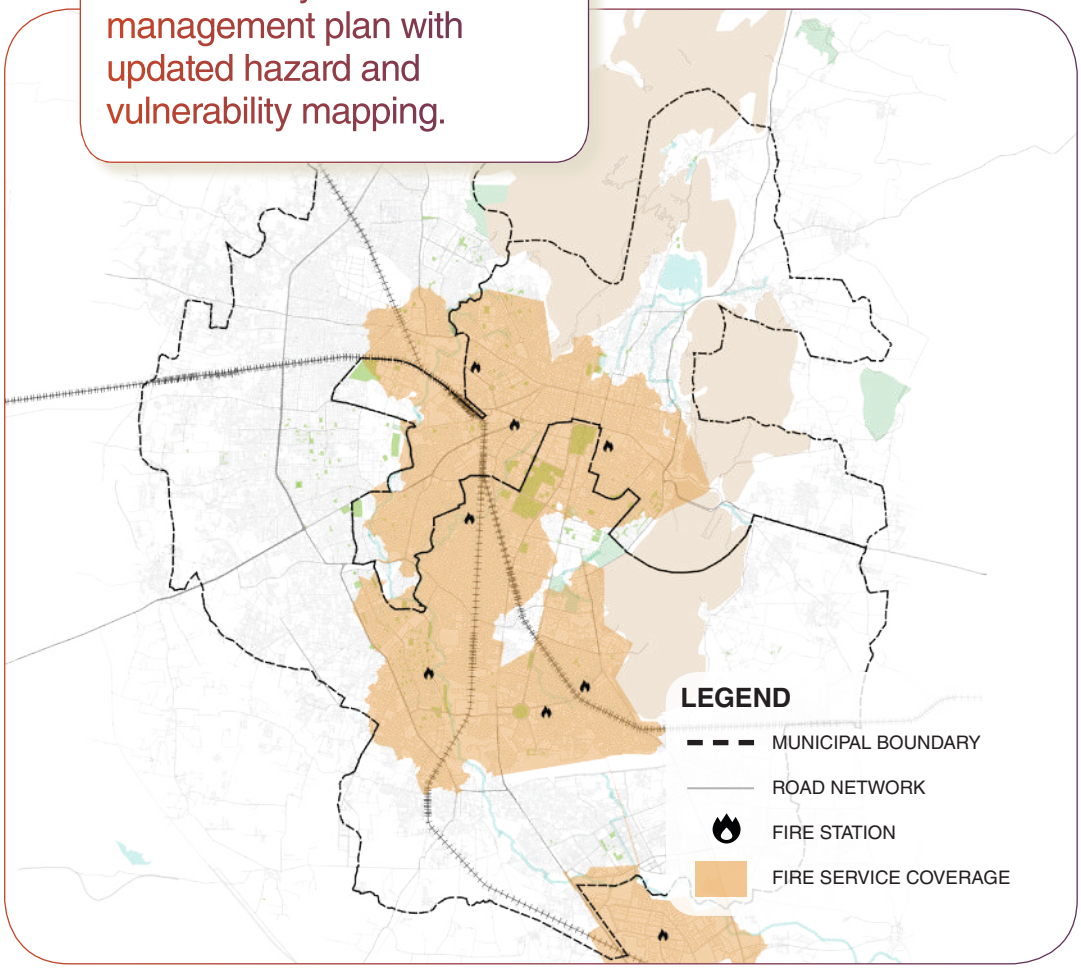


Figure 1.1: Population within a distance of 4km from a fire service facility

11 GOVERNANCE AND DATA MANAGEMENT

>15 functions
being implemented by ULB

-- services
managed through a command and control centre

-- planners
for every 14,000 population

Existence
of GIS database for the city

10 years
since the master plan was last updated

There is a strong need of inter-departmental data sharing and coordination to avoid duplication or inconsistencies in information.

Department of IT&C has undertaken the task of mapping the whole of JDA boundary on a 3-D GIS platform which would be a significant data assest for the various departments in Jaipur.

12 FINANCE AND ECONOMY

34%
property tax collection efficiency

-- /capita
GDP of the city

'A-'
Credit Rating

71% grants
received from central & state governments to total revenue

Currently the municipal collection of property taxes are not linked to GIS.

GIS maps from other departments such as JDA can be used as base layer to increase efficiency of tax collection.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