



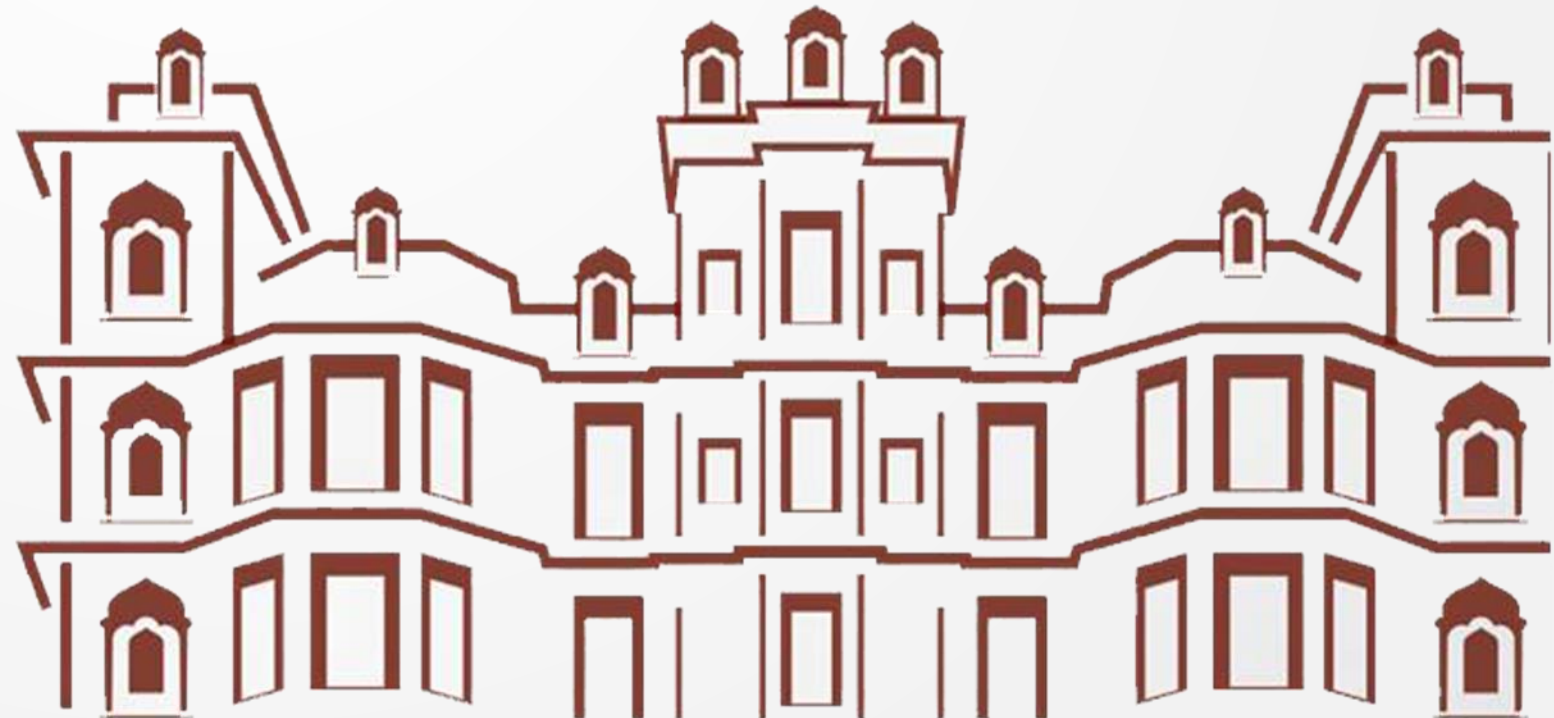
हम सबका सपना, स्मार्ट इन्दौर हो अपना

Indore – Smart City

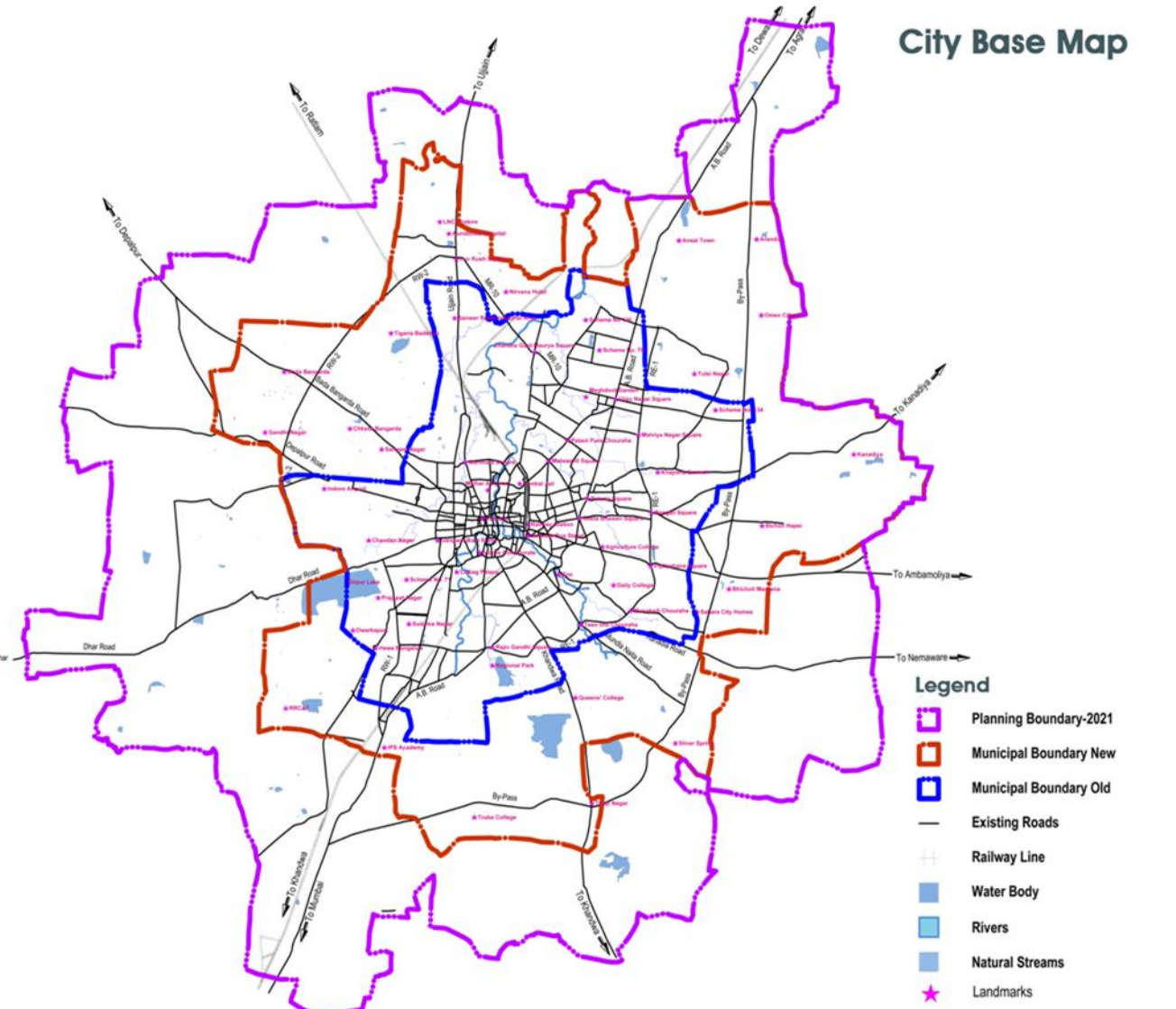
Technical Consultant:
Mehta and Associates



Indore Municipal
Corporation



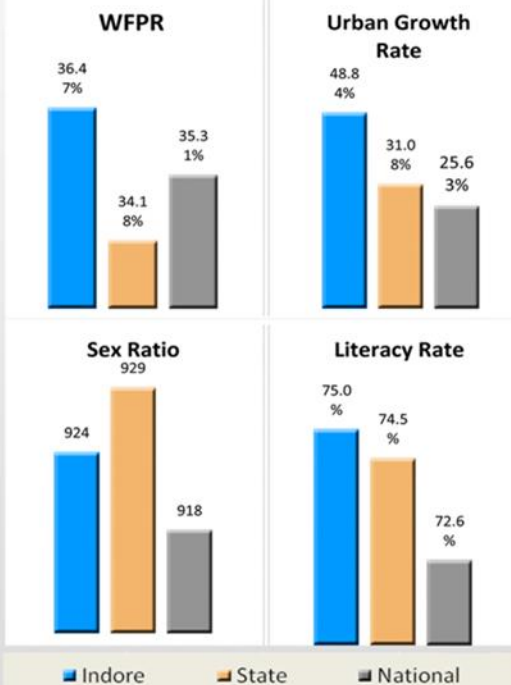
City Profile



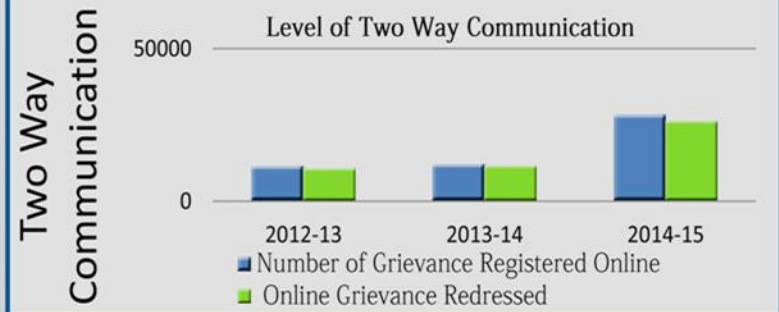
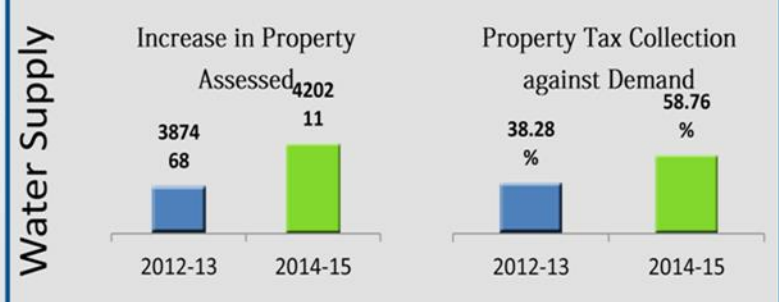
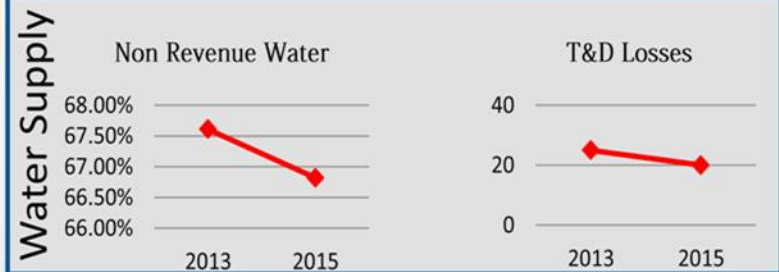
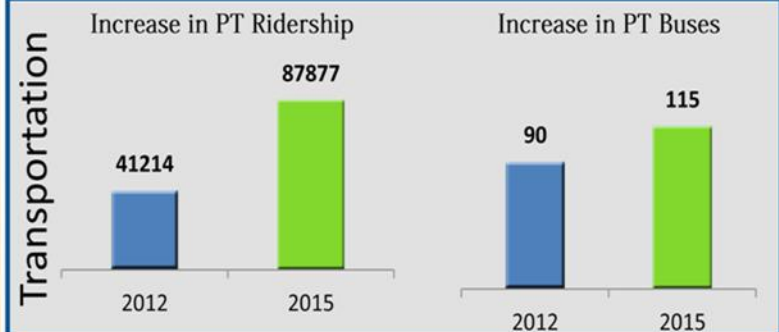
- Old Municipal Boundary**
Area - 131.00 Sq. Km
Population (2011) - 19.64 Lakhs
- New Municipal Boundary**
Area - 276.00 Sq. Km
Population (2011) - 21.95 Lakhs
- Planning Boundary**
Area - 505.25 Sq. Km
Population (2011) - 23.50 Lakhs

Population (New Municipal Area)

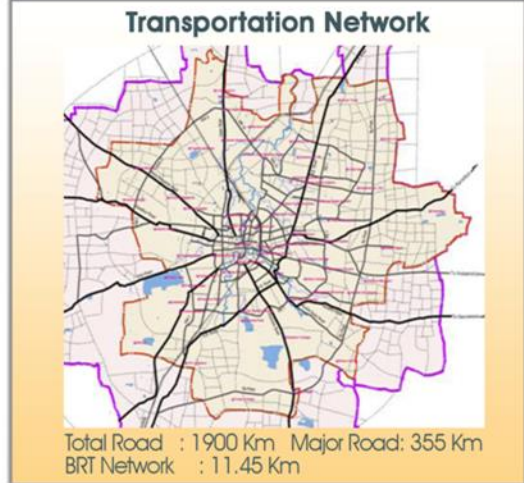
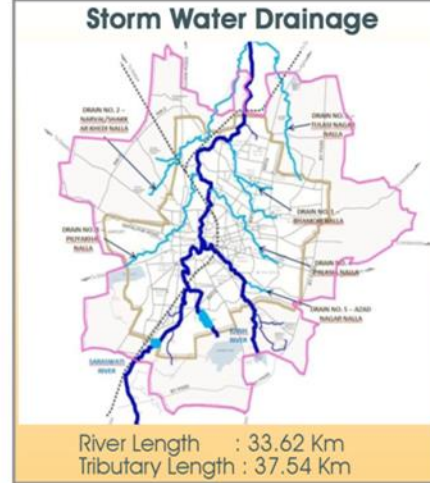
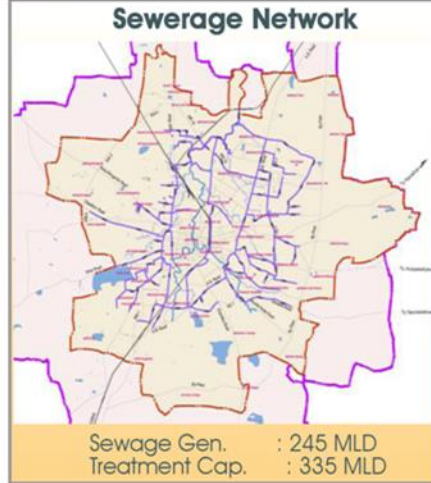
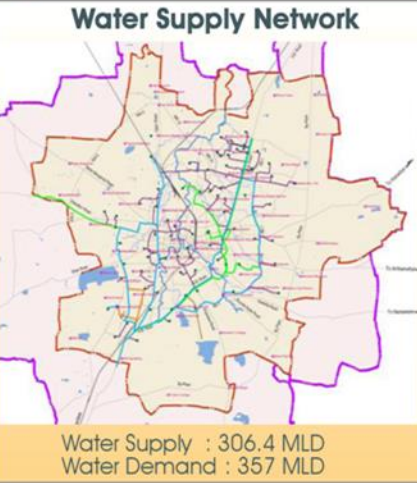
2015	- 26.45 Lakhs
2021	- 32.00 Lakhs
2041	- 60.00 Lakhs



Key Performance Indicators



1.3 City Physical Infrastructure Map



Citizen Consultation

CITIZEN ENGAGEMENT SUMMARY

Total Engagement
591965

Indore conducted one of the widest citizens consultation in the country.

ROUND 1

Duration:
15th Sep – 25th Oct

Agenda:
Vision and Goals

Total interactions:
253180



MEDIUM OF ENGAGEMENTS

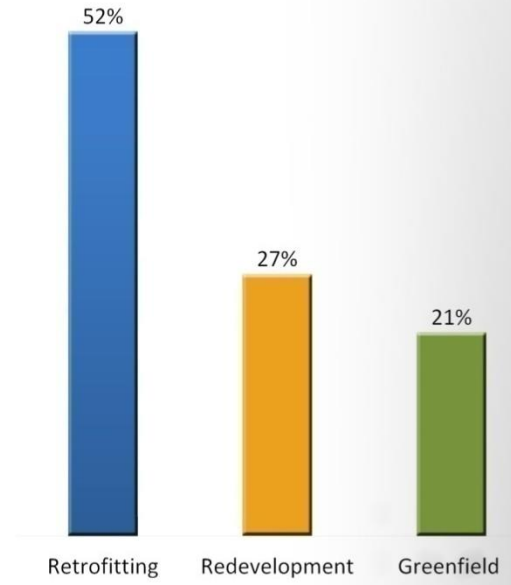
CONSULTATION INCLUSION

Profession	%
Student / Youth	28%
Working Professional	19%
Other / General Public	19%
Housewife	16%
Service Provider	7%
Senior Citizen	5%
Businessman/Industrialist	4%
Traders	2%

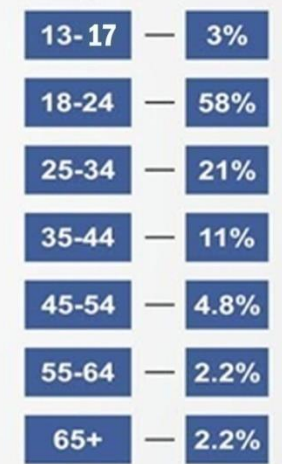
CITIZEN PRIORITY- SECTOR WISE

Sector	%
Larger Focus on Indore's Heritage & Culture	15%
Public Transport & Walkability	14%
Appropriate Waste Management	11%
More Open Space	11%
Citizen role in decision making	9%
Proper Sewerage Facilities	8%
Affordable Housing	8%
Uninterrupted Power Supply	7%
Better Water Supply	6%
Technology Enabled Delivery of Public Services	6%
Safety & Security	5%

CITIZEN PRIORITY- TYPE OF AREA DEVELOPMENT



Age Group Wise Distribution



Sex Wise Distribution



121662

87738

140141

2220

36732

1437

16573

3910

6500

59952

87165

306



Citizen Consultation

4.1 ROUND 2 CITIZEN ENAGEMENT



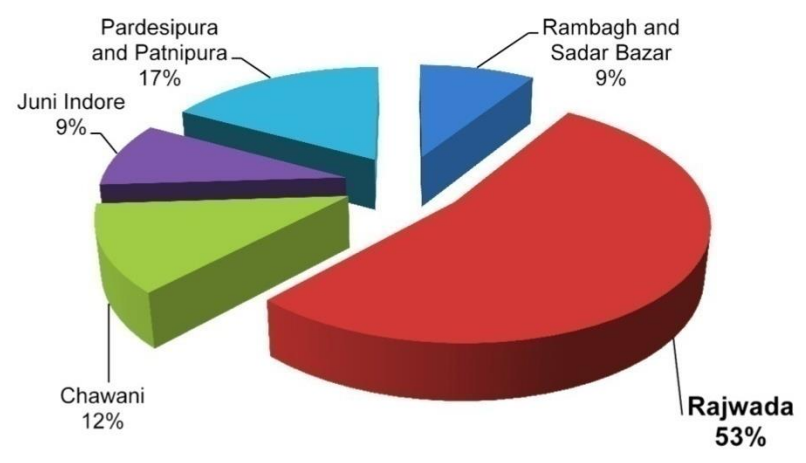
Round 2

Duration:
26th Oct – 15th Nov

Agenda:
Finalization of Area and Pan-City

Total Interactions:
173989

Citizen Engagement Area Preferred For Development



4.2 ROUND 3 CITIZEN ENAGEMENT

Round 3

Duration:
15th Nov – 6th Nov

Agenda:
Draft Smart City Proposal

Total Interactions:
164796

More than 80% Population has been covered in selected area for Area based development through Door to Door Consultation in round 3

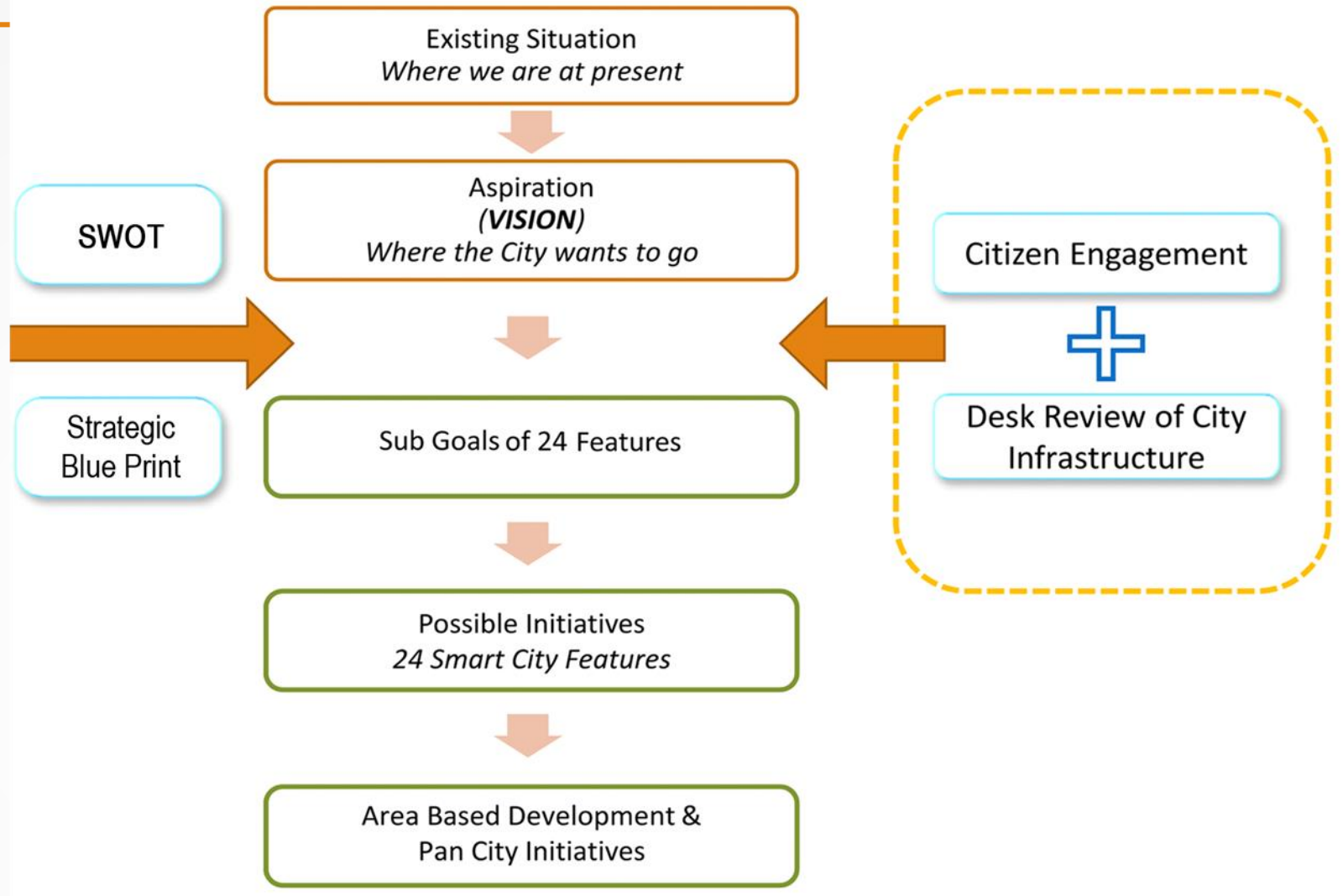


Strategy and City Vision

City Level Self Assessment

S. No	Smart City Feature	Scenario 1	Scenario 2	Scenario 3	Scenario 4
1	Citizen participation		Existing Situation		Aspirations
2	Identity and Culture		Existing Situation	Aspirations	
3	Economy and Employment		Existing Situation		Aspirations
4	Education			Existing Situation	Aspirations
5	Health			Existing Situation	Aspirations
6	Mixed Use		Existing Situation		Aspirations
7	Compactness		Existing Situation	Aspirations	
8	Public Open Space	Existing Situation		Aspirations	
9	Housing and Inclusiveness		Existing Situation		Aspirations
10	Transport		Existing Situation		Aspirations
11	Walkability	Existing Situation			Aspirations
12	IT Connectivity		Existing Situation		Aspirations
13	Intelligent Government Services		Existing Situation		Aspirations
14	Energy Supply			Existing Situation	Aspirations
15	Energy Source		Existing Situation		Aspirations
16	Water Supply		Existing Situation		Aspirations
17	Water Management	Existing Situation		Aspirations	
18	Waste Water Management		Existing Situation	Aspirations	
19	Air Quality		Existing Situation	Aspirations	
20	Energy Efficiency	Existing Situation		Aspirations	
21	Underground Electrification	Existing Situation	Aspirations		
22	Sanitation			Existing Situation	Aspirations
23	Waste management		Existing Situation	Aspirations	
24	Safety and Security		Existing Situation	Aspirations	

Existing Situation Aspirations

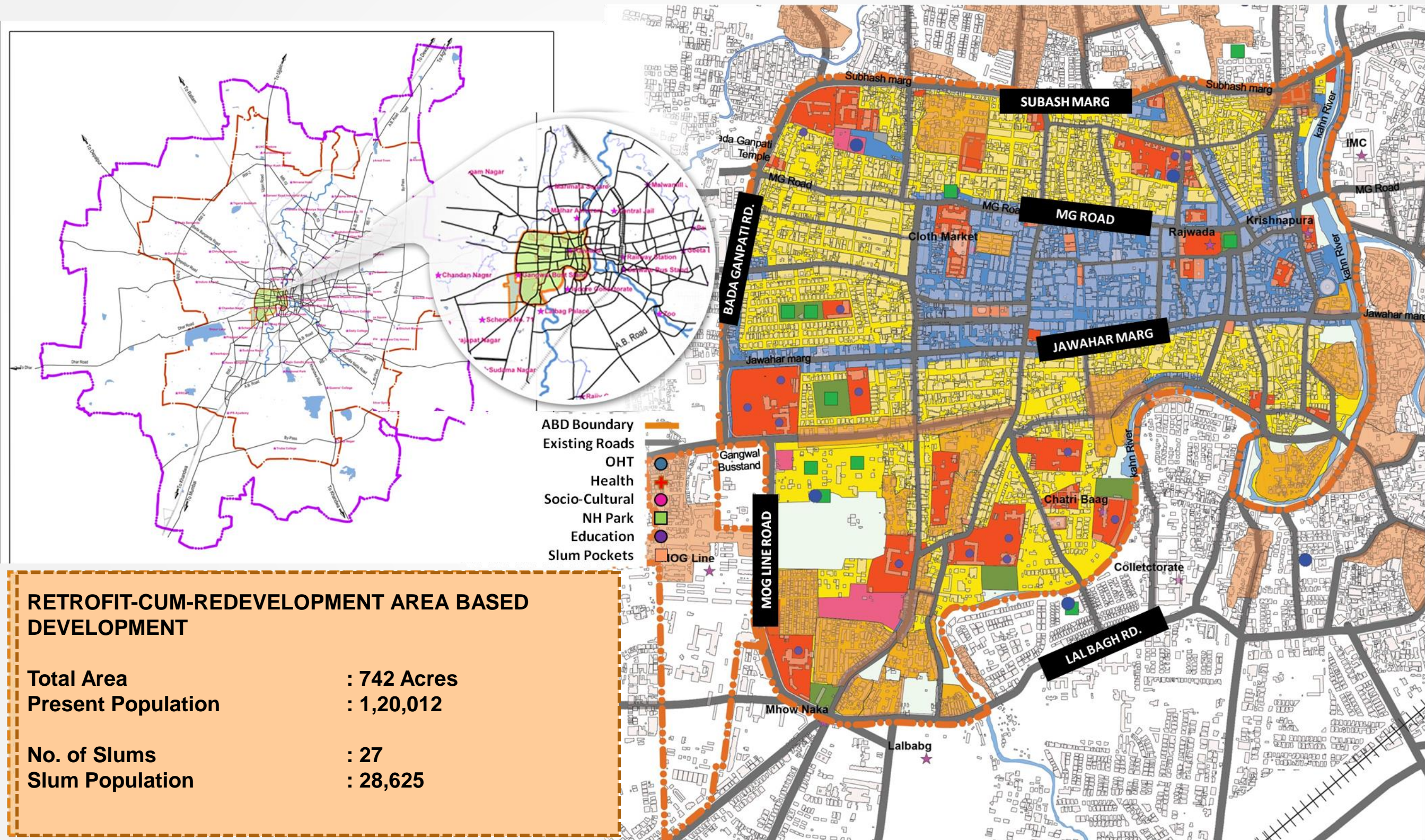


VISION

“Inheritance, Innovation, Inclusion, Incubation and Investment”

“An ideal world-class smart commercial metropolis that thrives on investment opportunities, incubating business and ideas, rich inheritance and inclusive development”

Area Based Development - Existing Situation

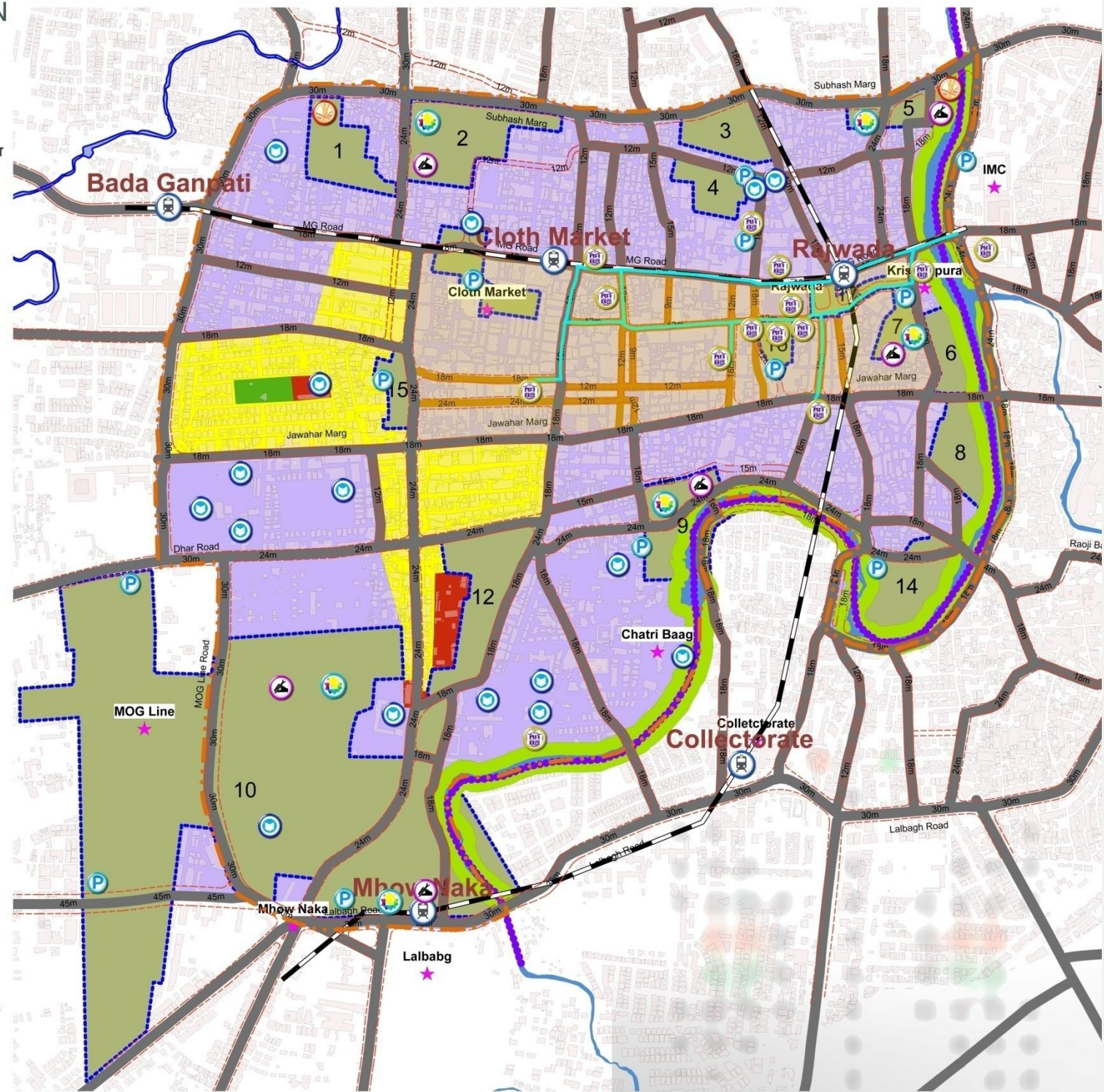


Area Based Development - Proposal

Smart City
RAJWADA RETROFITTING CUM REDEVELOPMENT MASTER PLAN
 AREA BASED DEVELOPMENT PROPOSAL AREA

PROPOSED FEATURES AND COMPONENTS

- 1. Identity and Culture**
 - Heritage Walk
 - Conservation of Built Heritage
 - Development of Plazas
- 2. Economy and Employment**
 - Incubation & Plug n play centres
 - Skill Development Centres
- 3. Transportation and Walkability**
 (Improvement of Roads, Intersections & Pedestrian)
 - Pathways/Crossings, Monitoring of Air Quality)
 - No Vehicle Zone (16% of Selected Area)
 - Smart Parking (Capacity 7200 ECS)
- 4. Redevelopment of Public Land**
 (Compact Developed on TOD Principles, Mixed use, 3 FAR)
 - Redevelopment Parcels (16 parcels, 164.45 acres)
 - Development of 67.74 acres of Public Open Space
 - 85.30% of built-up area to be Green Buildings in Redevelopment
 - 65% of the terrace covered with Solar Power
 - Rain Water Harvesting & Reuse
- 5. Water Supply, Water Management, Waste Water Management and Sanitization**
 - 24/7 Water Supply System
 - Re-use of Recycled Water (Dual Piping)
 - 100% Smart Metering with SCADA System
 - Public Toilets
- 6. Solid Waste Management**
 - 100% Door to Door Collection
 - Waste To Energy Plants
- 7. Power Supply & Efficiency**
 - Smart Power Grid for 24/7 un-interrupted Power Supply
 - Smart Energy Meter
- 8. Underground Electrification & Utility Shifting**
 - Underground Ducts for Laying of Utilities incl. Power Lines
- 9. IT Connectivity & IT Enabled Govt. Services**
 - Public Wi-Fi Hot Spots
 - Area Command and Control Center
- 10. Health & Education**
 - Smart Classrooms
 - Upgradation of School Facilities
 - Improvement of Health Facilities
- 11. Safety and Security**
 - Energy Efficient Street Lighting
 - Fire Hydrant System for Dense Areas
 - Multi-Use CCTV Camera



LEGEND

- BRT Line
- Metro Line
- TOD Development
- Existing Residential
- Existing Public & Semipublic
- Existing Recreational
- Building Foot Prints
- Rivers
- Natural Streams
- Landmarks
- Pedestrian zone

Area Based Development - Proposal

PROPOSED COMPONENTS AND ACTIVITIES

Enhanced Transportation and Mobility

Development of roads and junctions as per street design guidelines (integrated with underground ducting, smart signalization, surveillance, traffic management)

P Multi-Level Parking
equipped with smart components (integrated with IT solutions and pan city solutions)

MIT Multi Modal Interchange Facilities and network
(integration of NMT, public bike sharing, e-vehicle, traffic management)

NMZ Pedestrianization of streets and Non-Motorized Zone
(pedestrianization of market area and heritage precinct designed as per street design guidelines and smart pedestrian infrastructure)

Heritage conservation and Promotion of Tourism

Conservation of all built heritage, facade regulations in heritage influence area

HWS Development of heritage walk street circuit with signage and tourist infrastructure

Development of Plazas and Green open spaces

Environmental upgradation and Green open spaces

RFD River front development
Development of green buffer, BRT network along river and Recreational openspaces

ROS Recreational Open Spaces
Community and neighbourhood open spaces

Redevelopment of Public land

EGB Energy Efficient and Green Mixed Use Buildings

CAH Compact and Affordable Housing
65% roof covered with solar power units, Ample smart parking and universally accessible spaces

Economy and Employment generation centres

IC Incubation Centre, Skill development Centre and Plug n Play Facilities

Social Infrastructure

SHI Strengthening of health Infrastructure

SEI Strengthening of Educational Infrastructure

Physical Infrastructure

UWS Upgraded water supply with smart water management system and drainage network

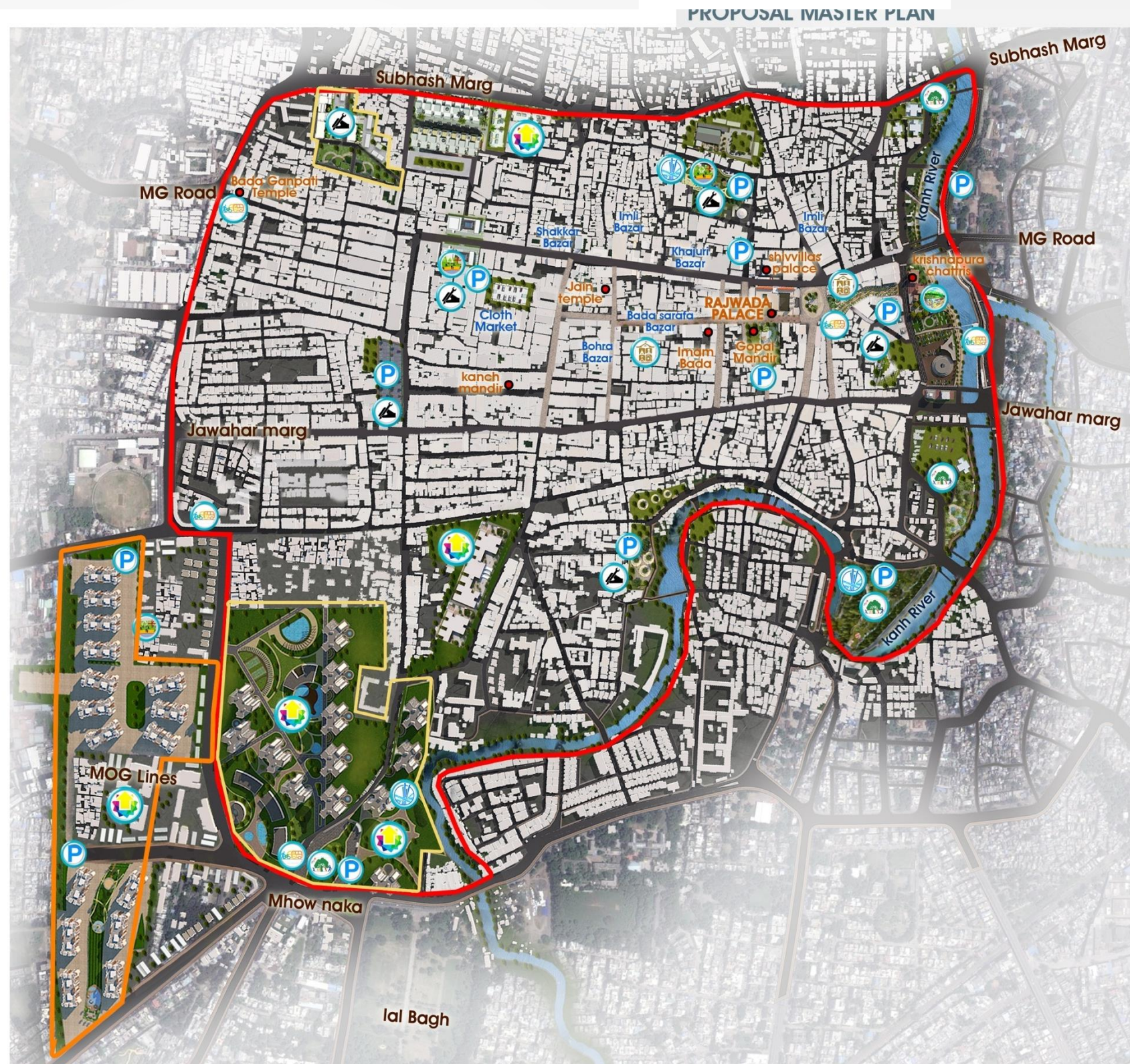
100% sewerage coverage with decetralized treatment

Smart waste management system

Redevelopment Proposal Area

EGB Energy Efficient and Green Mixed Use Buildings

CAH Compact and Affordable Housing for slums
65% roof covered with solar power units, Ample smart parking and universally accessible spaces



Area Based Development - Heritage and Culture

Smart City

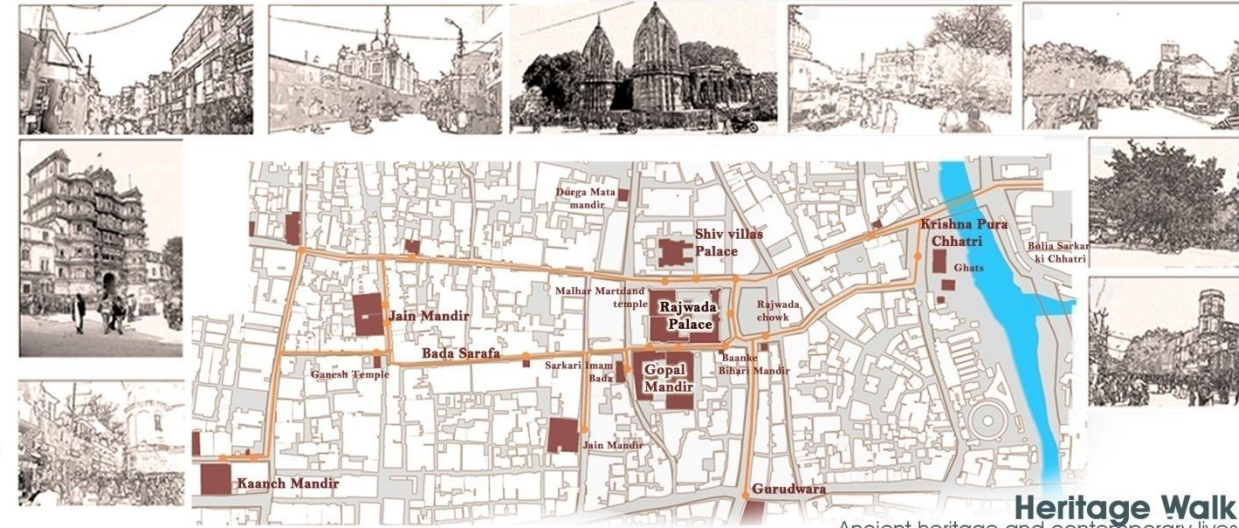
8.1 RAJWADA AREA AND SURROUNDINGS

Rajwada heritage precinct and pedestrian zone



- Rajwada Circle
- Fruit Market
- Bakshi Gali
- Subhash Marg
- Subhash Chowk
- Pandrinath
- Jawahar Marg
- PY Road
- Imli Bazaar
- Adaa Bazaar
- GDC Area
- Hamilton Road
- Juna Pitha
- Bartan Bazaar
- Raj Moholla
- Bartan Bazaar
- Naliya Bakhal
- Labaria Bheru
- Bada Ganpati
- Bajaj Khana Chowk Area
- Gopal Mandir Area
- Sarafa Bazaar
- Jinsi
- Kila Road
- Khajuri Bazaar
- Lodipura
- Itwariya Bazaar
- Mohan Pura
- Mukeripura
- Bombay Bazaar
- Peepli Bazaar
- Bohra Bazaar
- Veer Savarkar Market
- Mhow Naka Area
- Nandlalpura
- Krishnapura Chhatri

Heritage precinct
pedestrianized street network
Plaza



Heritage Walk
Ancient heritage and contemporary lives



Transformations



URBAN FORM FEATURES

- Inclusive Designs
- Universal Accessibility
- Walkable Environment
- Integrated Public Transport
- Economy Inducive
- Transit Oriented Dev.
- Sustainable Infrastructure
- Mixed-Use & Compactness
- Renewable Energy
- Safety & Security

Area Based Development - No-Vehicle Zone

Urban Form - Pedestrianization - Public Plaza - Heritage Area Conservation



URBAN FORM FEATURES



Universal Accessibility



Sustainable Infrastructure



Integrated Public Transport



Renewable Energy



Walkable Environment



Mixed-Use & Compactness



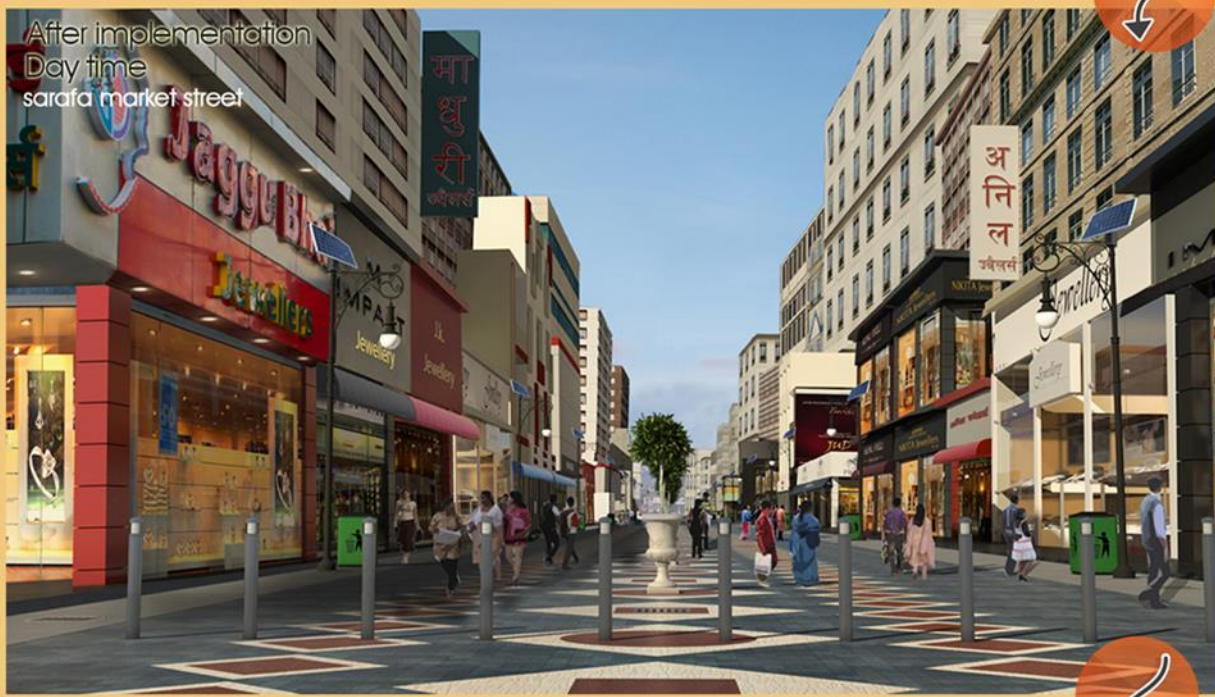
Economy Inducive



Safety & Security

Area Based Development - Transformations

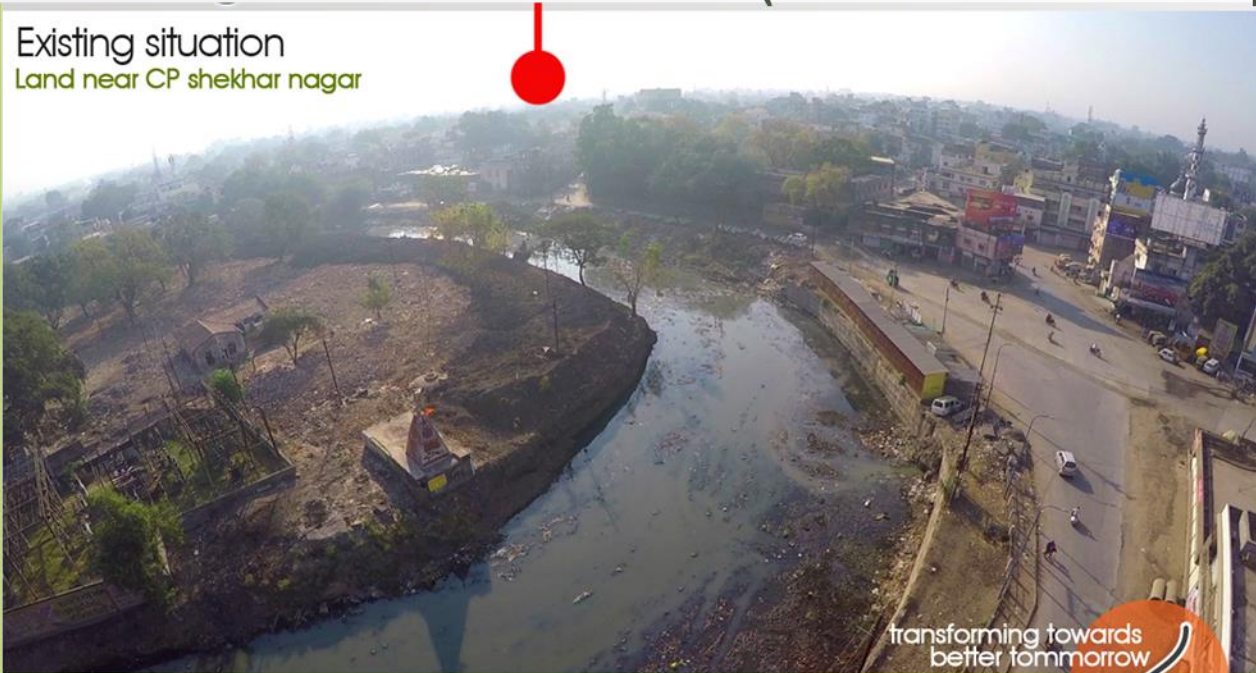
Transformations of Market Area (Pedestrianization)



Area Based Development - Transformations

Transformation of Kanh River (River Front Development)

Existing situation
Land near CP shekhar nagar



transforming towards
better tomorrow

After implementation
Land near CP shekhar nagar



Revitalization of Natural heritage and Culture

Treatment System

Existing situation
Kanh River near Krishnapura Chatris



transforming towards
better tomorrow

After implementation
Kanh River near Krishnapura Chatris



Area Based Development - River Front Development & Public Open Spaces

Smart City
REGION TRANSFORMATION

1. Development of Sector Parks
2. Improvements in Other Existing Parks
3. Development of School Play Grounds
4. A large chunk of Green Urban Park is proposed to be developed near CP Shekhar Nagar by clearing the site adjoining the River Banks, and also at the other government lands available at Nandlalpura, Harsiddhi, etc.

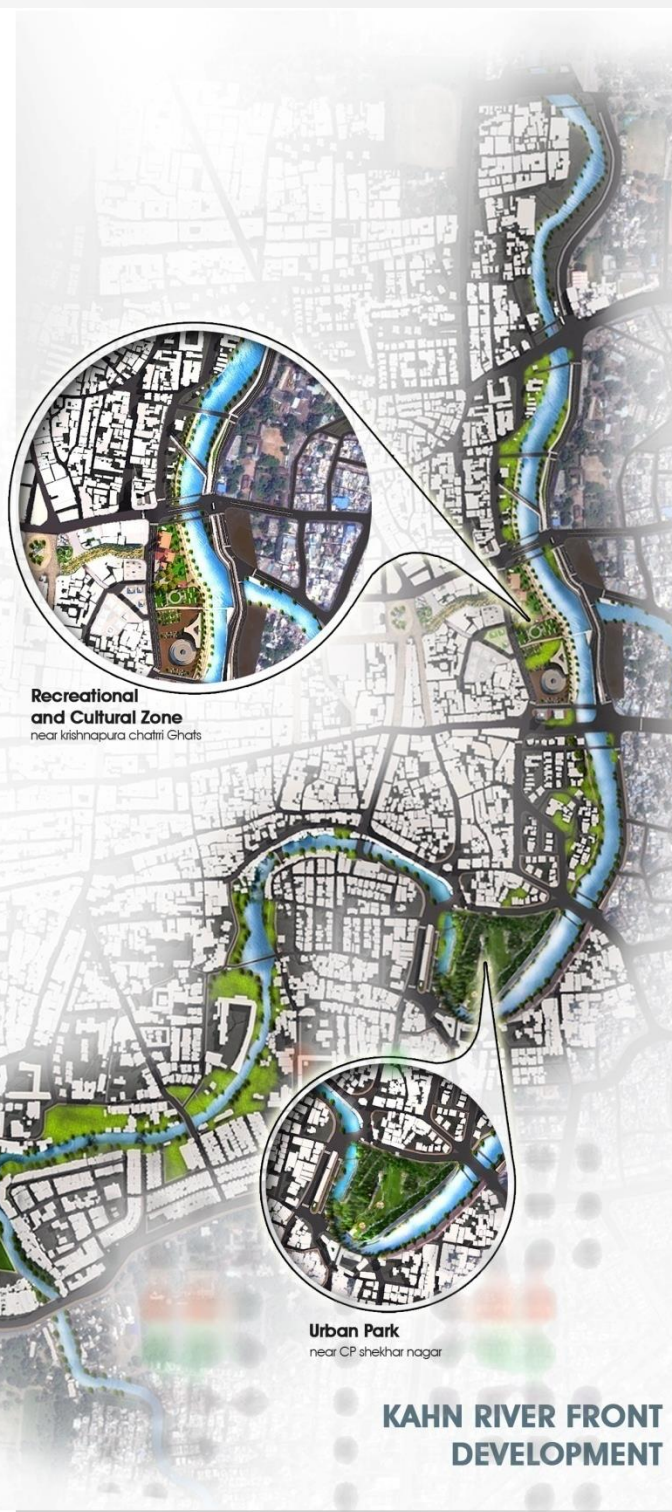


10.1 RAJWADA AREA AND SURROUNDINGS



Revitalizing kahn river
Channelisation of River
DEWATS - Decentralized Wastewater Treatment System

Revitalization of Natural heritage and Culture



Area Based Development - Redevelopment of Public Land

Smart City
URBAN TRANSFORMATION

11.1 REDEVELOPMENT OF PUBLIC LAND

16 Pockets Identified across the Area
 Area Under Redevelopment: 164 Acres
 Development on TOD Principles
 Open Space Developed: 33.68 Acres
 50% of the Redevelopment Area will be developed as mixed-use, high density (3.0 FAR, residential density of 375 DUs/ Ha



Sustainable, Energy Efficient and State of the Art Mixed Use Compact High-rise Housing Development



transforming towards better tomorrow



REDEVELOPMENT PARCELS



11.2 REDEVELOPMENT THROUGH POLICY DRIVEN STRATEGIES

TOD Station Areas and Corridor Areas redevelopment on TOD Principles
 Redevelopment in Non-TOD Areas
 Minimum Redevelopment Area (permission through amalgamation) - 2000 Sqm
 Mixed Land Use - Lower floors
 Maximum Ground Coverage - allowed - 30 %
 Current FAR - 1.5
 Additional FAR - 1.5 (incentive on Premium payment)
 Minimum Open Space - 10%

Features of Development
 Redevelopment on TOD Principles
 Development of Complete Road Sections
 Incentivizing through Various Mechanisms

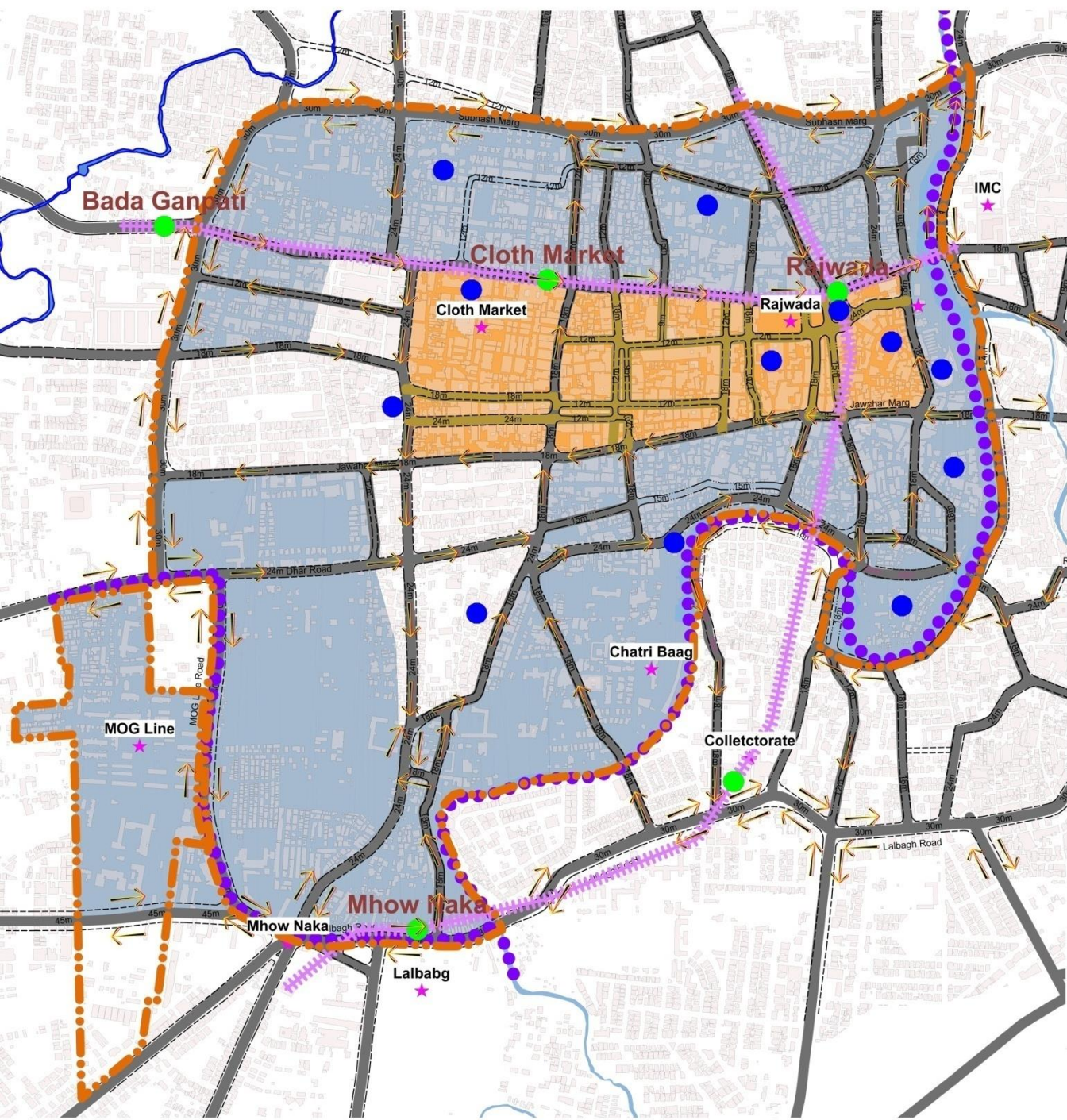


- Green cover & Open public spaces
- Improving the Community living
- Walkability & Cycling Facilities
- Energy efficiency in Redevelopment
- Energy source- Use of Renewable solar energy
- Housing & inclusiveness in Redevelopment buildings
- Rain water harvesting & Reuse
- Compact & High Density development

Area Based Development - Transit Oriented Development



12.1 TOD & WALKABILITY



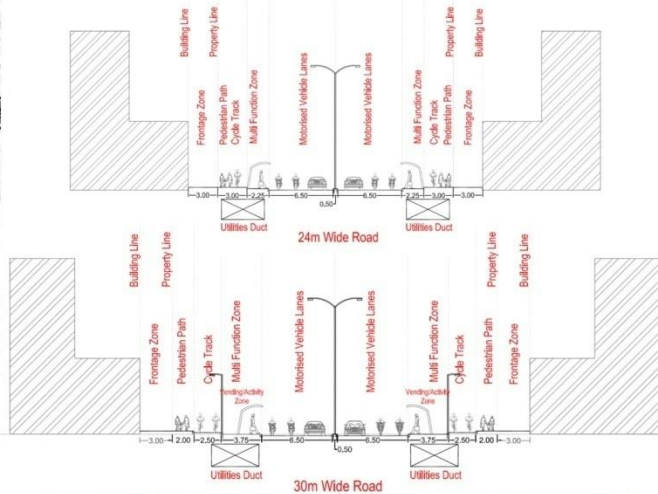
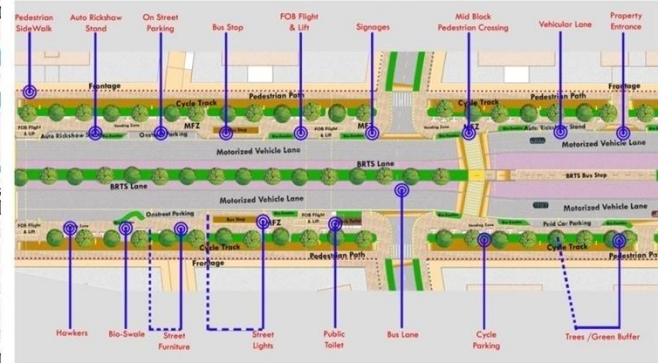
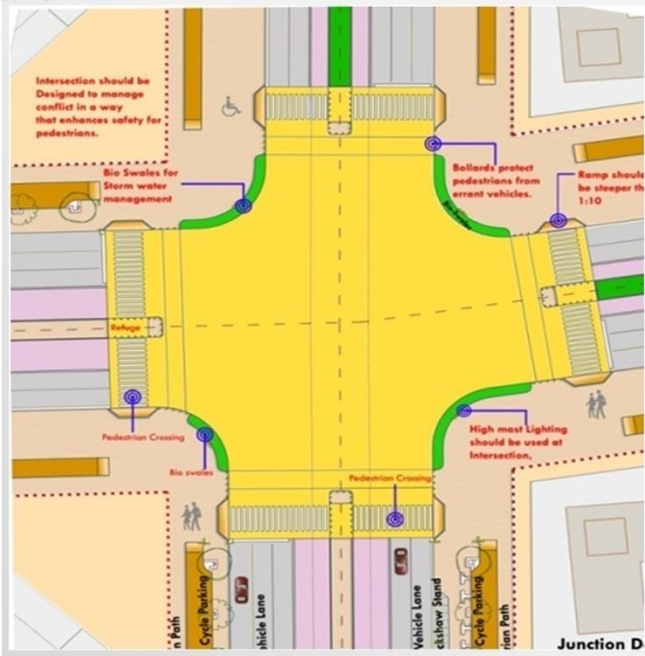
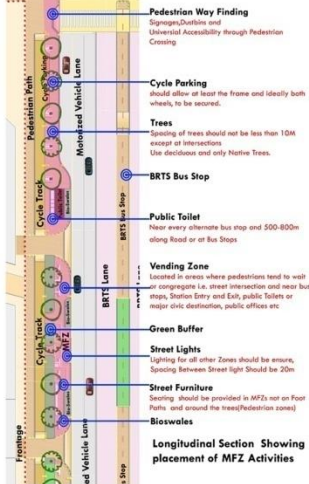
Street Design on TOD Principles

As per prepared Street design guidelines

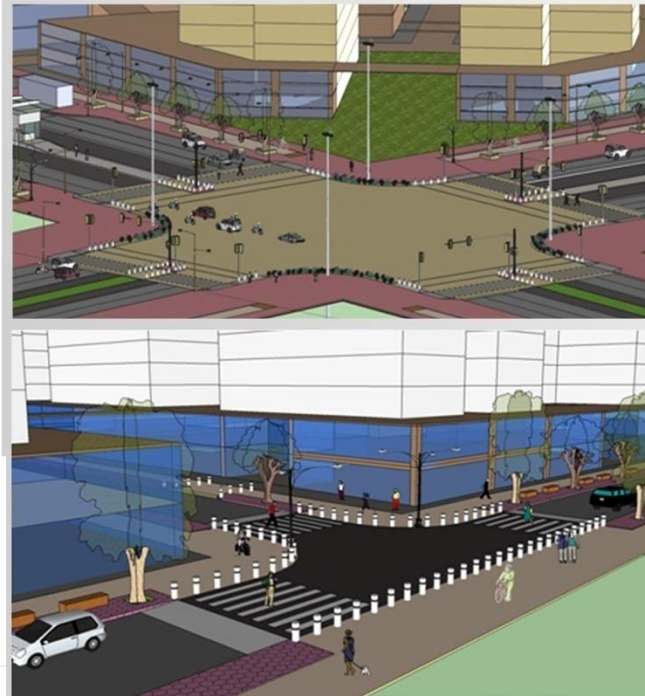
Smart City Features Addressed
Transportation and Walkability
Underground Electrification

LEGEND

- Area Based Development Boundary
- TOD Area
- No Vehicle Zone
- Road Network
- BRT Line
- Metro Line
- Pedestrian Street
- Traffic Movement
- Metro Station
- Public Shared Parking
- Building Foot Print
- Rivers
- Natural Streams



Typical Street Cross Sections for Arterial and Sub Arterial Road



Pan-City Initiatives

INDORE INTELLIGENT CITY MANAGEMENT SYSTEM

Intelligent Transportation System (ITS)

TRAFFIC MANAGEMENT

Automated Traffic Control

- Traffic Signals
- Pedestrian Crossings

Lane Management

- Lane Control Signs
- Lane Management in Emergency

Traffic Regulations Enforcement

- Red Light Violation
- Speed Violation

Traveler Information

- City Traffic Situation
- Traffic Regulations
- Emergency Warning

PARKING MANAGEMENT

- Parking Availability Monitoring
- Automatic Electronic Payment
- Vehicle and User Security

Parking Information

- Parking Proximity
- Parking Availability

GEO FENCING

- Allow the tracking of manpower and vehicle fleet present in service area
- Highlight service areas affected due to unavailability of resources.

INFORMATION DISSEMINATION MODES

- Mobile
- VMS
- Portal

• Navigator

• SMS

• Radio

SENSOR NETWORK

Mobile Sensors

- RFID
- GPS

Static Sensors

- Motion Sensor
- Camera

Backbone OFC Communication Network

Last mile Connectivity – Wireless/Copper Two Way Communication

CONTROL AND COMMAND CENTRE

Data Processing & Monitoring

- Administration
- Surveillance
- Control of Sensors
- Reporting
- Data Archive
- Data Analysis
- Information Dissemination
- Authentication & Authorization
- E-Nagarpalika

MOBILE APP. SYSTEM

- Track the Safai Mitra (SM)
- Register complaint of Absenteeism
- Coordination time with SM
- Register complaints for Litter
- Toll free helpline for 24x7 support
- Transparent billing of user charges

TRANSIT MANAGEMENT

Passenger Information (In Vehicle & At Stops)

- PT Schedule
- PT Live Tracking

Fleet Management & Monitoring

- Vehicle Tracking System (AVL)
- Synchronization of various Public Transport Schedules
- Passenger information System
- Passenger Security

ELECTRONIC PAYMENT

Common Mode of Payment

- Transit Fee Payment
- Parking Fee Payment
- Toll Collection

ONLINE MONITORING OF WASTE PROCESSING

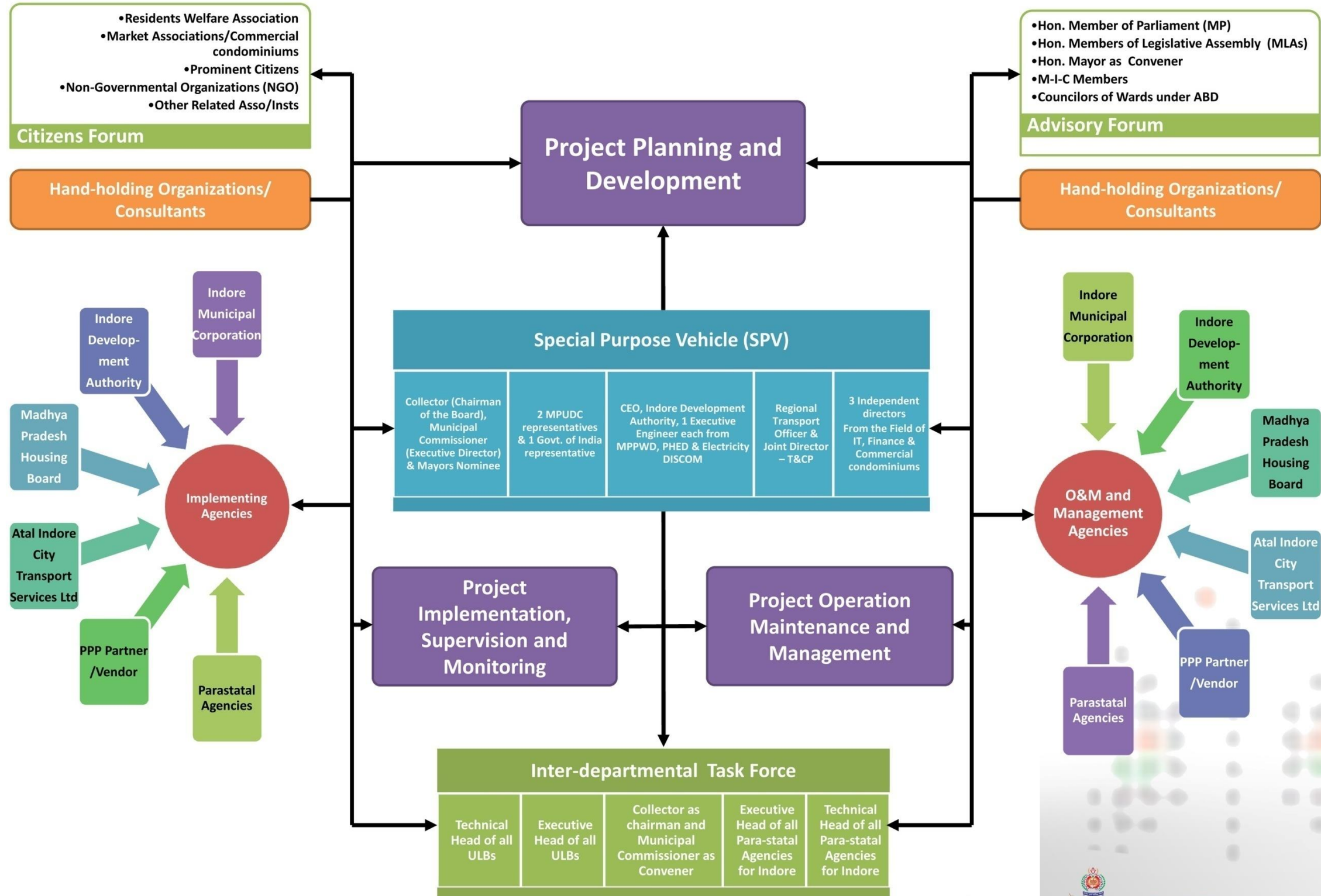
- Track and Monitor the waste collected in decentralized waste processing units

GIS BASED ROUTE MAPPING AND VEHICLE TRACKING SYSTEM (VTS)

- Track Speed, Location, Route, Total Running Distance etc of Vehicles
- Locate the secondary collection points and waste bins locations
- Optimized Route Mapping and Planning based upon above data.

Intelligent Solid Waste Management (ISWM)

Role of Various Stakeholders



Financial Plan – Project Cost

PROJECT COST

Component wise cost of Retro-fitting-cum-Redevelopment ABD Proposal

Identity & Culture	46.00 Crs
Economy & Employment	45.00 Crs
Transportation & Walkability	507.43 Crs
Redevelopment of Public Land	2991.02 Crs
Water Supply, Water Management, Waste Water Management and Sanitation	452.95 Crs
Solid Waste Management	3.52 Crs
Power Supply & Efficiency	72.38 Crs
Underground Electrification & Utilities Shifting	227.26 Crs
IT Connectivity & IT Enabled Govt Services	42.96 Crs
Health & Education	16.56 Crs
Safety & Security	63.69 Crs

Component wise cost of Pan-City Proposal – IICMS

Central Command & Control Center, Backbone OFC Comm. Network & City Dashboard Activity	118.00 Crs
Intelligent Transport System (ITS)	250.00 Crs
Intelligent Solid Waste Management (ISWM)	20.00 Crs

Administrative and O&M Expenses

242.84 Crs

TOTAL **5099.60 Cr**

Financial Plan – Revenue Sources

RESOURCES PLAN

Capital Structure

Tied Grant from Government of India (GOI) under SCM/IMC Equity	488 Crs
Equity from Government of Madhya Pradesh (GOMP)	488 Crs
Convergence with Grants from GOI/GOMP under Various Missions/Programmes/Schemes (AMRUT, PMAY, IPDS, SBM, Digital India, Skill India)	600.4 Crs

Revenue Sources from Realestate Sale in Redevelopment of Govt Land and Premium on FAR from TOD and Redevelopment on Private Land

Real-Estate Sale from Redevelopment Component (Present Value)	3,565 Crs
Premium on Additional FAR from TOD and Redevelopment on Private Land (Present Value)	2,775 Crs

SPV should be able to raise resources to the extent of 6,340 .00 Crs

Against Total Invest 5,099.60 Crs

RECURRING REVENUE from ABD Area

Smart City Cess (+ from 6 th Year)	8.9 Crs
Enhanced Property Tax (+ from 6 th Year)	59.4 Crs
Water Charge (+ from 6 th Year)	21.85 Crs
Sewerage Cess (+ from 6 th Year)	10.92 Crs
MSW Charge (+ from 6 th Year)	10.42 Crs
Other Taxes (+ from 6 th Year)	12.8 Crs

TOTAL (+ from 6th Year) 124.3 Crs

TOTAL (+ from 15th Year) 468.2 Crs

Financial Plan - Project Cost

Component wise cost of Retro-fitting-cum-Redevelopment ABD Proposal

• Identity & Culture	-----	46.00 Crs
• Economy & Employment	-----	45.00 Crs
• Transportation & Walkability	-----	507.43 Crs
• Redevelopment of Public Land	-----	2991.02 Crs
• Water Supply, Waste Water Management and Sanitation	-----	452.95 Crs
• Solid Waste Management	-----	3.52 Crs
• Power Supply & Efficiency	-----	72.38 Crs
• Underground Electrification & Utilities Shifting	-----	227.26 Crs
• IT Connectivity & IT Enabled Govt Services	-----	42.96 Crs
• Health & Education	-----	16.56 Crs
• Safety & Security	-----	63.69 Crs
Total Cost of Retro-fitting-cum-Redevelopment ABD Proposal	=====	4468.76 Crs

Component wise cost of Pan-City Proposal – IICMS

• Central Command & Control Center, Backbone Comm. Network	-----	118.00 Crs
• Intelligent Transport System (ITS)	-----	250.00 Crs
• Intelligent Solid Waste Management (ISWM)	-----	20.00 Crs
Total Cost of Pan-City Proposal – IICMS	=====	388.00 Crs

• Administrative and other Expenses	-----	242.84 Crs
Total Cost of Smart City Proposal	=====	5099.60 Crs

Financial Plan – Revenue Sources

Capital Structure

- Tied Grant from Government of India (GOI) under SCM/IMC Equity ----- 488.00 Crs
- Equity from Government of Madhya Pradesh (GOMP) ----- 488.00 Crs
- Convergence with Grants from GOI/GOMP under Various Missions/Programmes/Schemes (AMRUT, PMAY, IPDS, SBM, Digital India, Skill India) ----- 600.40 Crs

Total Capital Structure ----- **1576.40 Crs**

Revenue Sources

- Real-Estate Sale from Redevelopment Component (Present Value) ----- 3565.00 Crs
- Premium on Additional FAR from TOD and Redevelopment (Present Value) ----- 2775.00 Crs

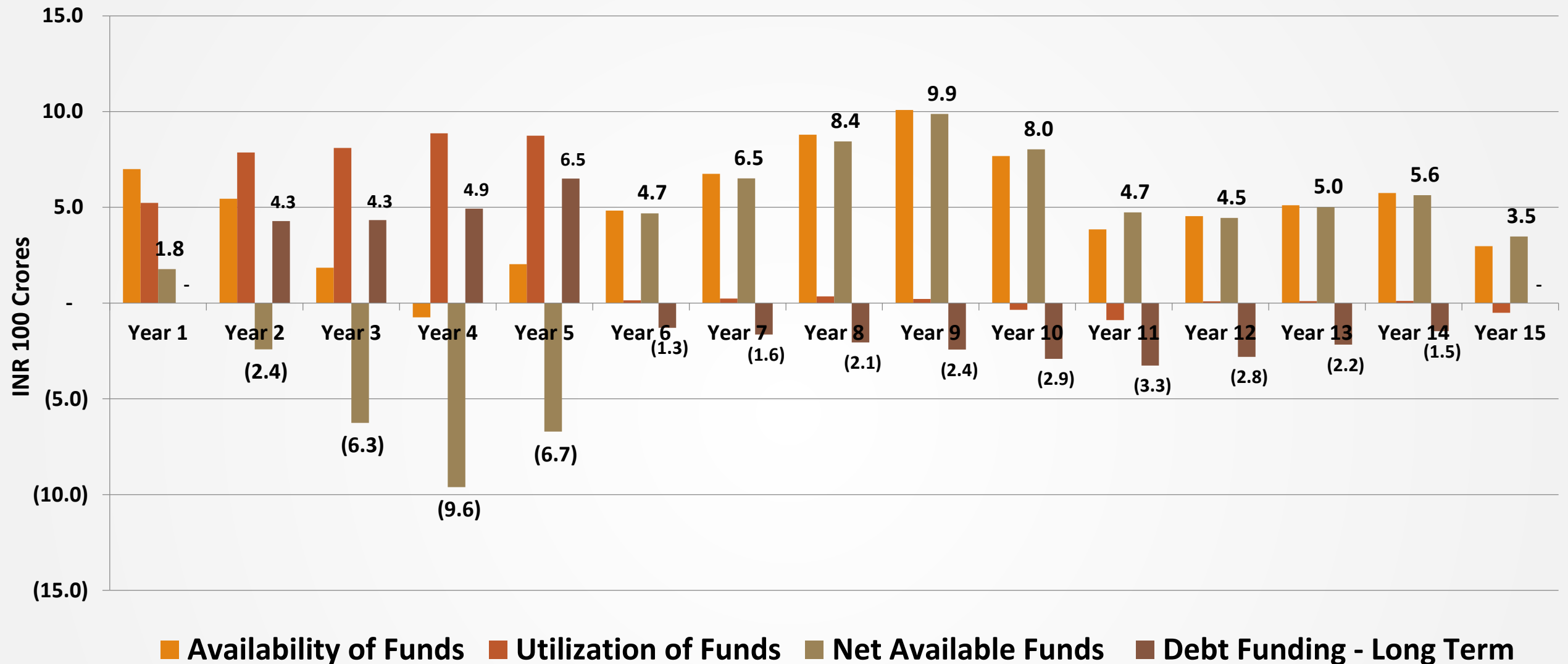
Total Revenues against investment of Rs 5099.60 Crs ----- **6340.00 Crs**

*SPV would use Free Cash-flow for Equity accumulated after the end of mission period (i.e. INR **2,785.7 crore** (present value INR **1,110.2 crore**) as seed capital for future replicable models*

Annual Recurring Revenue from ABD Area ----- **124.30 Crs**

Enhanced Property Taxes etc. Due to Change in Rate Zone

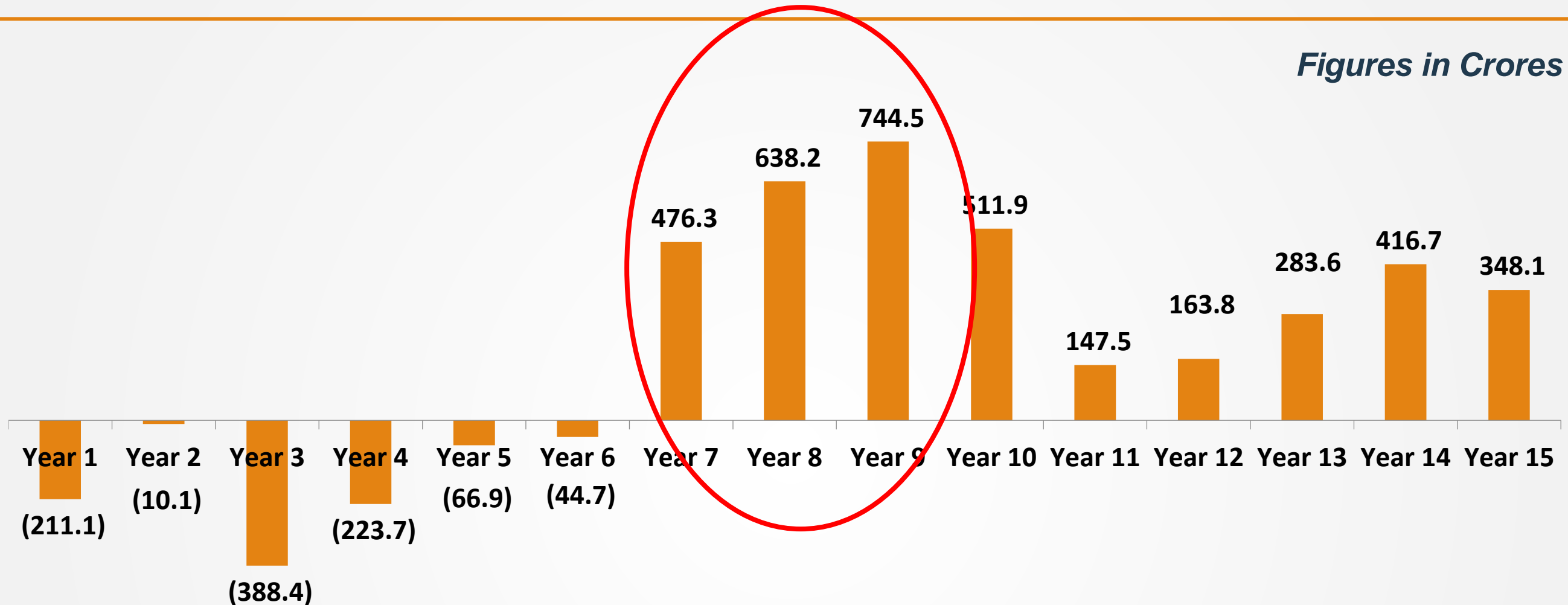
Financial Plan – Fund Availability, Utilisation and Debt Requirement



- *Debt Requirement during Year 2-5 due to deficiency in Net Available Funds*
- *Surplus fund availability during Year 6-15 earning Free Cash-flow for Equity and enabling Debt Repayment*

Financial Plan – Free Cash-flow for Equity

Figures in Crores



- SPV would use Free Cash-flow for Equity accumulated after the end of mission period (i.e. **INR 1859.0 crore (present value INR 1,109.0 crore)** as seed capital for future replicable models*

Key Features of Proposal

- The Proposal has evolved from the Vision leading to Inheritance, Innovation, Inclusion, Incubation and Investment
- The Proposal Addresses
 - Inheritance of rich Cultural and Economic Heritage
 - Conservation of Heritage
 - Heritage Street Development and Creation of Plazas, Avenues & spaces for leisure
 - Façade Treatment for Heritage Streets
 - Rejuvenation and Innovation in spatial re-structuring of Urban Form through Innovations like
 - Transit Oriented Development
 - Focus on Pedestrian and NMV Safety
 - No-Vehicle Zones and Parking
 - River Front Development and creation of usable public Open spaces for Recreation and Leisure
 - Innovation in Energy conservation, Energy efficiency and re-use of recycled waste water

Key Features of Proposal

- The Proposal Addresses

- Inclusive Urban Governance and Citizen Services for better lifestyle,
 - Creation of Affordable Housing
 - Integrating proposals for Slums and informal settlements
 - Sustainable Urban Mobility, Traffic Management measures and Improved access to Public Transport
 - Improved Environment by addressing Water, Wastewater and Solid Waste Management systems
 - Provision of world class infrastructure with assured Power supply, Water Supply, Road Infrastructure, Underground Utilities, Increase in usable road space
 - Improved IT Connectivity and use of ICT in management of Citizen services

Key Features of Proposal

- The Proposal Addresses
 - Incubation of the Urban Work Force
 - Provision of Incubation centers and skill Development centers
 - Use of Schools after school hours for community learning initiatives and skill development
 - Creation of employment opportunities by rejuvenating traditional market streets and urban economy
 - Enabling Indore to be a Destination for Investment
 - Attracting investment in City through world class development of ABD and Pan City Proposal
 - Incentives for development on TOD Principles
 - Robust Financing Model
 - Use of grant as seed capital and regenerating seed capital for future replicable models;

Indore Smart City Proposal a
Documentary

Thank You



Indore Municipal
Corporation