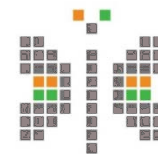


# INDORE MUNICIPAL CORPORATION INDORE



## Preparation of Smart City Proposal for City Challenge under Smart City Mission



**Smart City**  
MISSION TRANSFORM-NATION



# स्मार्ट सिटी क्या है ?

ऐसी सिटी जिसमें मुख्य अवसंरचना उपलब्ध है

नागरिकों को बेहतर जीवन स्तर प्रदान किया जाता है

विभिन्न स्मार्ट समाधानों का उपयोग किया जाता है

# Smart City के प्रमुख घटक

- पर्याप्त जल आपूर्ति
- सुनिश्चित विद्युत आपूर्ति
- ठोस अपशिष्ट प्रबंधन सहित सफाई
- सक्षम सार्वजनिक परिवहन
- गरीबों के लिये किफायती आवास
- सक्षम आई.टी. कनेक्टिविटी एवं डिजिटलाईजेशन
- सुशासन – ई-गवर्नेंस के माध्यम से नागरिक सुविधा
- स्वच्छ पर्यावरण
- नागरिकों की सुरक्षा
- स्वास्थ्य एवं शिक्षा
- भूमिगत बिजली केबल
- खुले स्थान एवं हरियाली का विकास
- बरसाती पानी एवं सीवेज की सक्षम निकासी



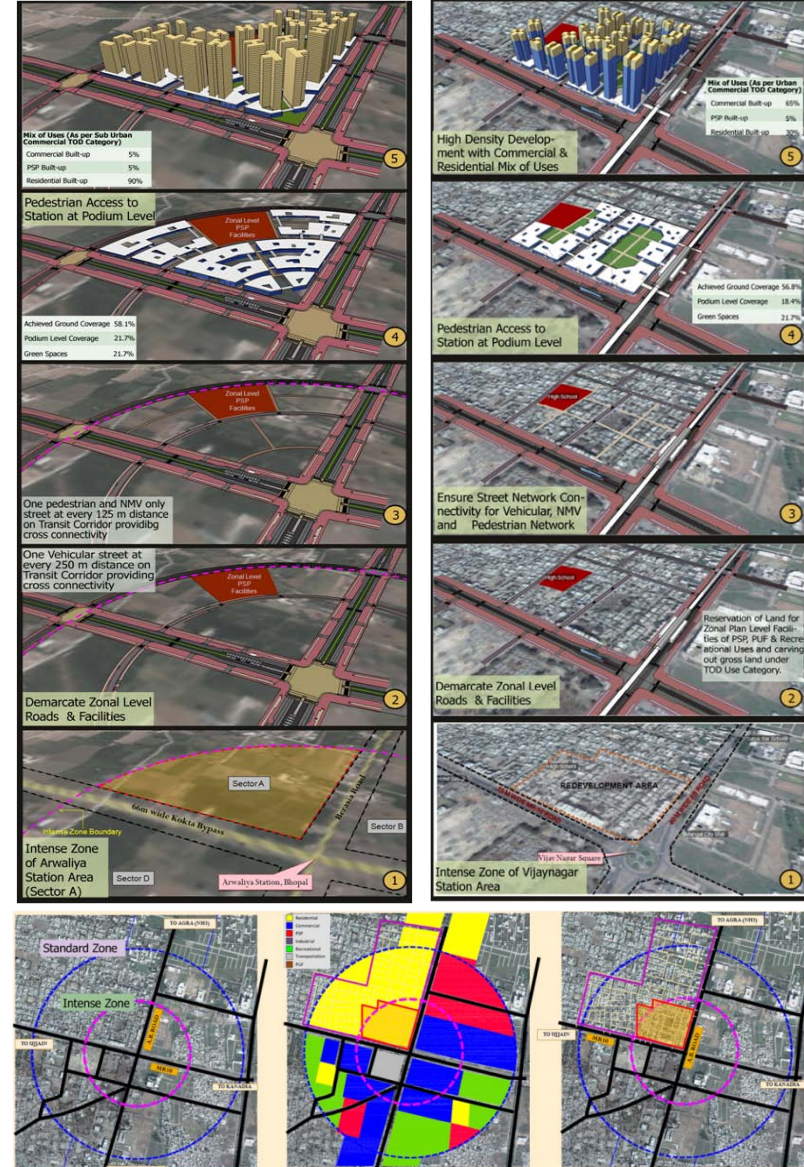
# स्मार्ट सिटी के लिये चयन

- दो चरण की प्रतिस्पर्धा
  - प्रथम – राज्यों द्वारा शहरों का चयन (इस चरण में इन्दौर चयनित)
  - द्वितीय – राज्यों द्वारा चयनित 100 शहरों के मध्य सिटी चेलेंज प्रतिस्पर्धा
- केन्द्र सरकार द्वारा 100 में से 20 शहरों का चयन प्रथम वर्ष फंडिंग हेतु किया जायेगा
- इसके तहत इन्दौर शहर द्वारा स्मार्ट सिटी प्रस्ताव तैयार करने की प्रक्रिया प्रारम्भ
- 100 दिवस में एस.सी.पी. (स्मार्ट सिटी प्रपोजल) प्रस्तुत किया जाना है

# स्मार्ट सिटी निर्माण की कार्यनीति

## (अ) क्षेत्र आधारित विकास –

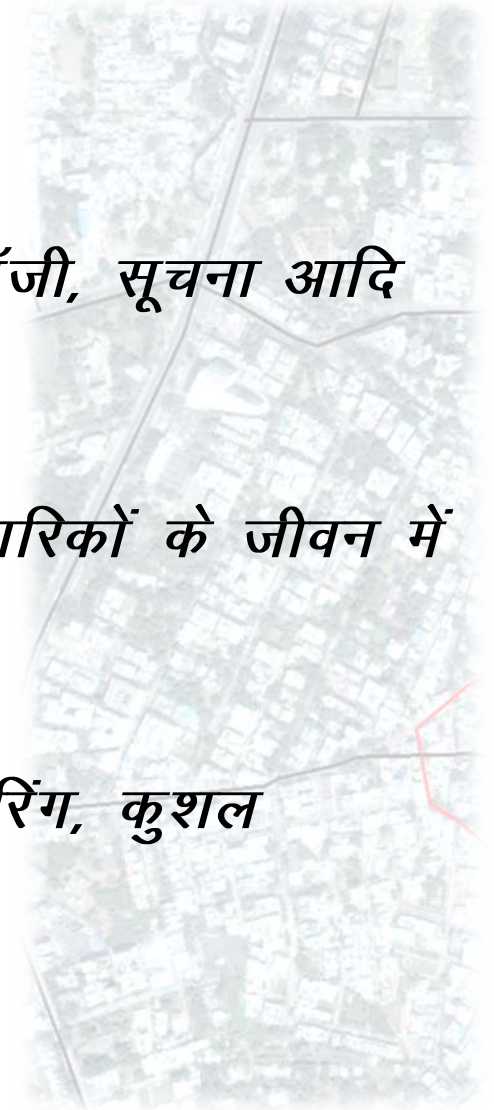
- रिट्रोफिटिंग (नगर सुधार) – वर्तमान क्षेत्र को अधिक सक्षम एवं रहने योग्य बनाये जाना, 500 एकड़ से अधिक
- रिडेवलपमेंट (पुर्नविकास) – वर्तमान निर्मित क्षेत्र को नवीन रूप में मिश्रित भूउपयोग एवं बड़े घनत्व के माध्यम से पुर्ननिर्माण, 50 एकड़ से अधिक
- ग्रीन फील्ड डेवलपमेंट (हरित क्षेत्र विकास) – खाली क्षेत्र (250 एकड़ से अधिक) में इनोवेटिव प्लानिंग आदि के माध्यम से नगर का विकास



# स्मार्ट सिटी निर्माण की कार्यनीति

## (ब) पैन सिटी विकास –

- शहर व्यापी सुव्यवस्थित समाधान जिसमें टेक्नोलॉजी, सूचना आदि का उपयोग
- ऐसा स्मार्ट समाधान जो किसी विशेष क्षेत्र में नागरिकों के जीवन में गुणात्मक सुधार लाता हो
- उदाहरण – वेस्ट वाटर रीसायकलिंग, स्मार्ट मीटरिंग, कुशल यातायात प्रबंधन प्रणाली आदि



# स्मार्ट सिटी प्रस्ताव

रिट्रोफिटिंग अथवा

पुर्नविकास अथवा

हरित क्षेत्र विकास मॉडल अथवा इनके मिश्रण से तैयार होगा,

जिसके साथ पैन सिटी, स्मार्ट साल्यूशन समाविष्ट रहेगा।

# स्मार्ट सिटी प्रपोजल के Content

City profile

Citizen engagement

Vision & Goals

Strategic Plan

Pan-city proposal

Area-based proposal

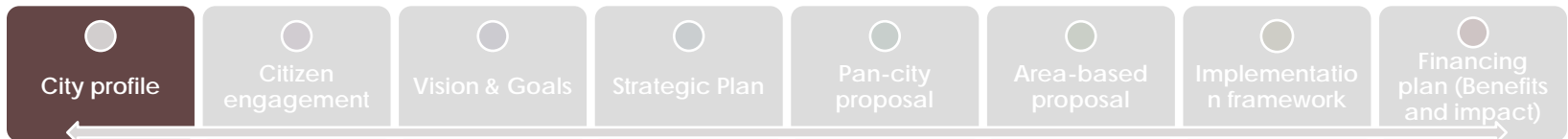
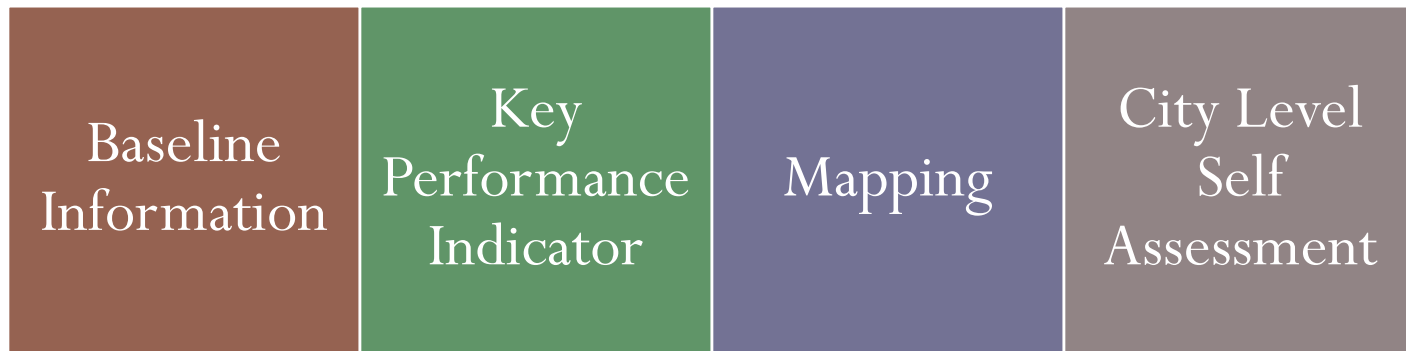
Implementation framework

Financing plan (Benefits and impact)

# सिटी प्रोफाईल

- सिटी प्रोफाईल आंकड़ों एवं विवरण के साथ विभिन्न प्रस्तावों पर नागरिकों से चर्चा

## सिटी प्रोफाईल विवरण



# Citizen Engagement हेतु अपनाई जाने वाली प्रक्रिया

## Citizen Engagement Process

नागरिकों के साथ,  
सिटी प्रोफाइल पर  
चर्चा कर City  
Vision एवं Goal का  
निर्धारण अर्थात् हम  
आज कहाँ हैं और हमें  
कहाँ तक जाना है

नागरिकों के समक्ष  
स्मार्ट सिटी के प्रस्ताव  
प्रस्तुत कर उनसे  
फीडबैक लेना

नागरिकों को क्षेत्र  
आधारित स्मार्ट सिटी  
प्रपोजल एवं पैन  
सिटी, स्मार्ट सिटी  
साल्यूशन के संबंध में  
अवगत कराना



# Citizen Engagement Process

## Citizen Engagement Process

### Public awareness

- Methods to Inform and Notify Citizens about the Smart City Challenge

### Public Feedback

- Methods of Citizen Consultation & inviting Ideas

### Feedback Analysis

- Steps to conduct Analysis

### Documentation and Evaluation

City profile

Citizen engagement

Vision & Goals

Strategic Plan

Pan-city proposal

Area-based proposal

Implementation framework

Financing plan (Benefits and impact)

# Citizen Engagement Process

## Public Awareness

### Agenda

- Reach Maximum Public
- Ensure Inclusion using various modes
- Build a Consensus
- Inform about the Project

### Platforms

- Print, Radio & TV
- Online crowd sourcing and polling: Twitter, Facebook etc.
- Website: My-Gov, ULB Website
- Mobile – SMS
- Interactive – T shirts, Banners

### Interactions

- Voice of Mayor
- About Smart City Mission on Website
- Slogans for Smart City on FM
- Smart City Indore - Logo
- Discussions on Social Media



# Citizen Engagement Process

## Public Feedback

### Agenda

- Invite Perspective for Smart City
- Invite Vision for Indore
- Invitation of Smart Technology Ideas
- Invitation of Views and Comments on Perspective Proposed Strategies

### Platforms

- Face To Face Discussion - City meetings, ward level consultations, focus – group discussions
- Online Polling
- Mobile Polling
- Written Submissions
- Social Media Discussions

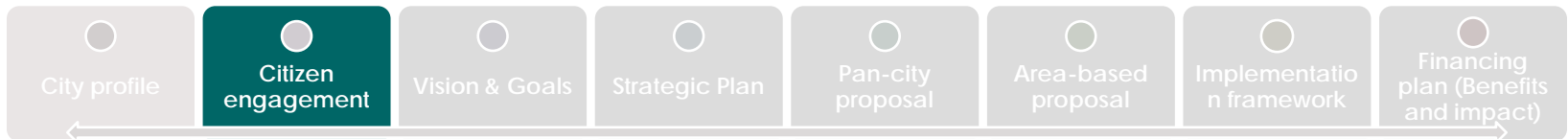
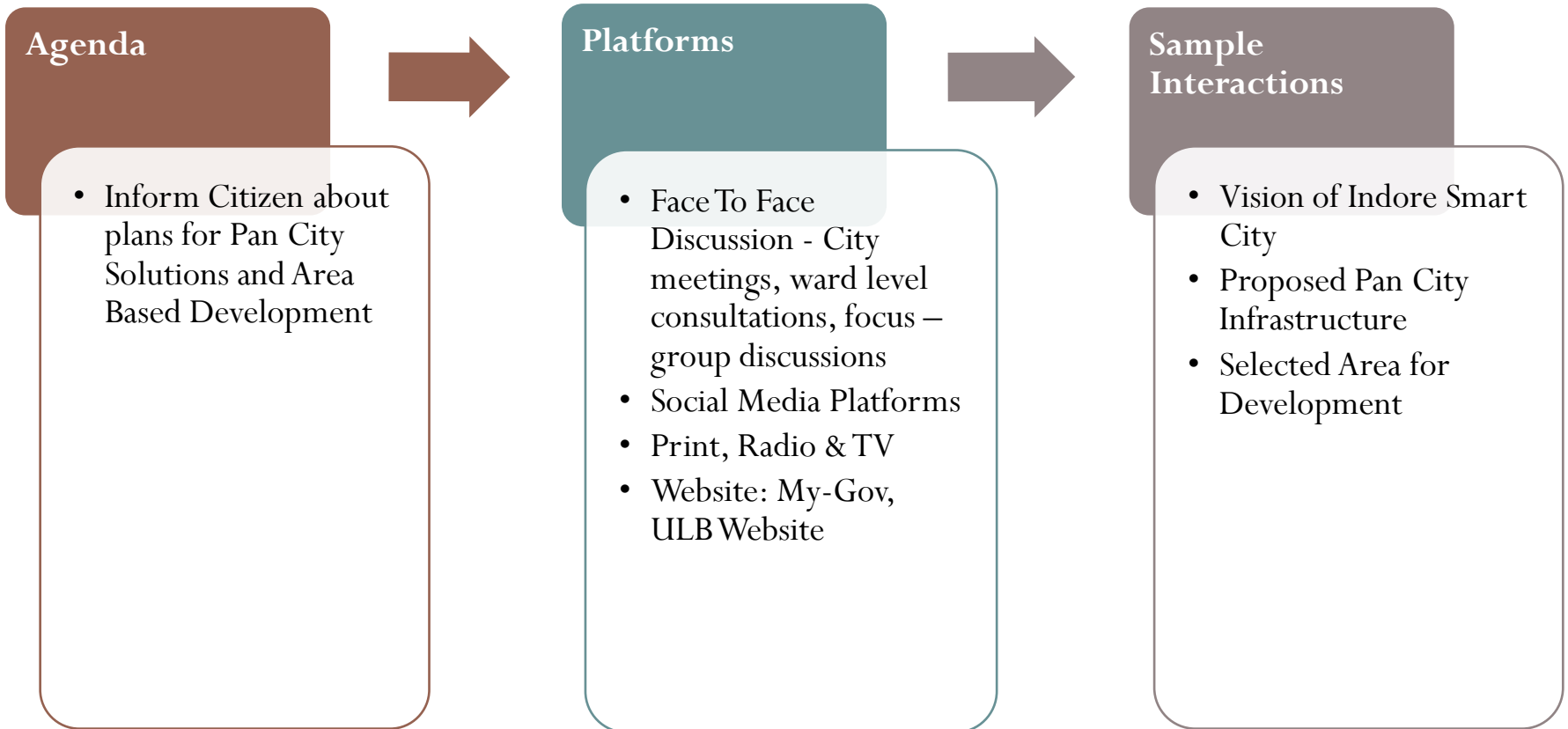
### Sample Interactions

- Your satisfaction level for Indore's Municipal Services
- Have you ever complained to the City administration / Media / Protest / Citizen Meeting / RTI / Police regarding any grievances / displeasure regarding the city's livability
- Given a choice would you continue to stay in Indore OR move out of Indore
- Why and reasons thereof to assess the cost of living & competitiveness of Indore City?
- Share your Vision/Dreams for/of Indore.



# Citizen Engagement Process

## Informing Citizen



# PROSPECTIVE PROPOSALS FOR SMART CITY INDORE

# Prospective Proposals for Smart City

## Retrofitting

- Rajwada Area
- SCH No 54 PU-3/4 (New CBD)

## Redevelopment

- MOG Line
- DRP Lines
- Malviya Nagar (area enclosed by AB Road, Ring Road, MR-10 and MR-9)
- PWD Office and Quarters in Old Palasia
- Badi Gwal Toli and Vinoba Nagar
- Suraj Nagar and other un-Authorised Colonies behind Mayur Hospital

## Green Field Development

- Super Corridor
- Proposed Railway Station Area on MR-10



## RETROFITTING (Option 1)

### RAJWADA AREA

- Area: 674 Acres
- Population : 1,00,000 (approx)

## REDEVELOPMENT (Option 1)

### MOG Lines

- Area: 56.60 Acres

Image © 2015 DigitalGlobe  
© 2015 Google

Imagery Date: 4/2/2015 22°42'49.32" N 75°51'00"



# Core Area Characteristics

- **Markets of Rajwada** (1500 Whole sale and 9000 Retail shops)
  - Bada Sarafa, Marothiya Bazaar, Khajuri Bazaar, Kasera Bazaar, Cloth Market, Chota Sarafa, Imli Bazaar, Ada Bazaar, Pipli Bazaar, Bohra Bazaar, Itwariya Bazaar, Bumbai Bazaar, Narsigh Bazaar, Dhaan Mandi Malhaarganj etc.
  - Nandlalpura Vegetable Market, Workshops and Repair shops, Tin and Steel Goods Market, Haat Bazaar's etc
  - Slum Area, Lower middle class colonies etc
- **Urban Heritage**
  - Urban Design of Core Area
  - River Kanh and Saraswati
  - Monuments of Heritage Importance



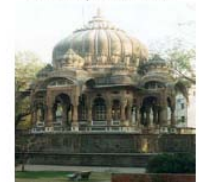
Lalbagh Palace



Krishnapura Chatri's



Rajwada

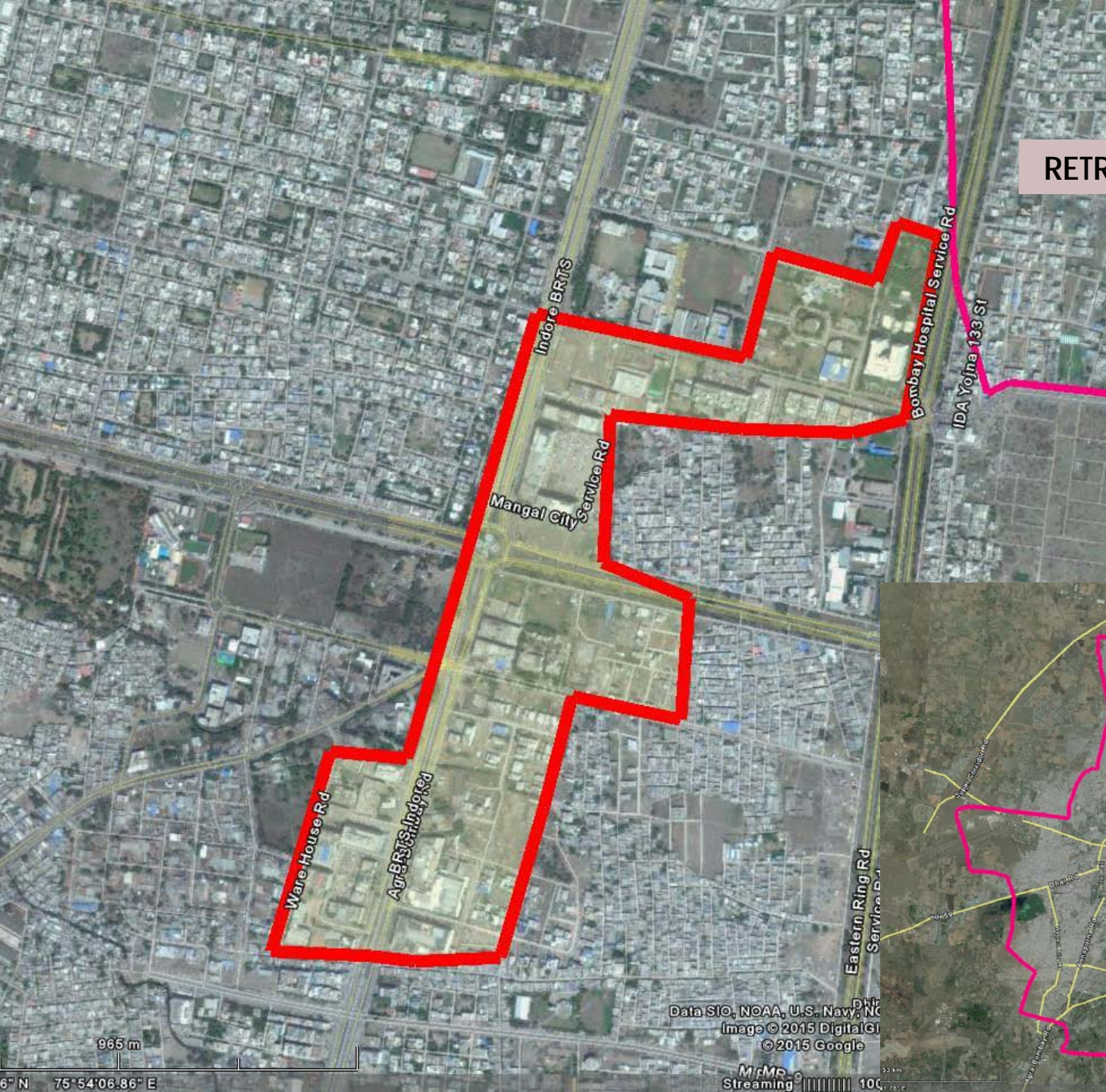


Boliya Sarkar Ki Chatri



Mahatma Gandhi Hall

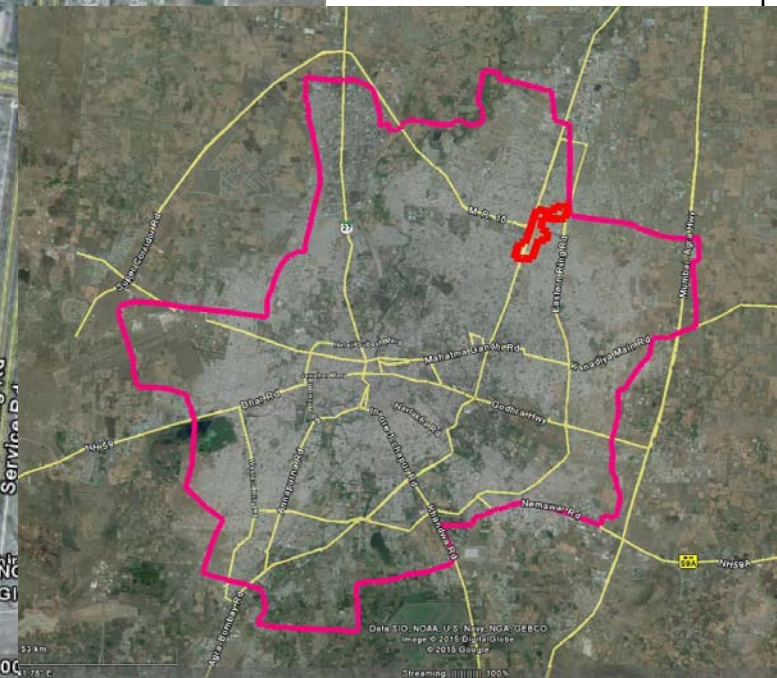


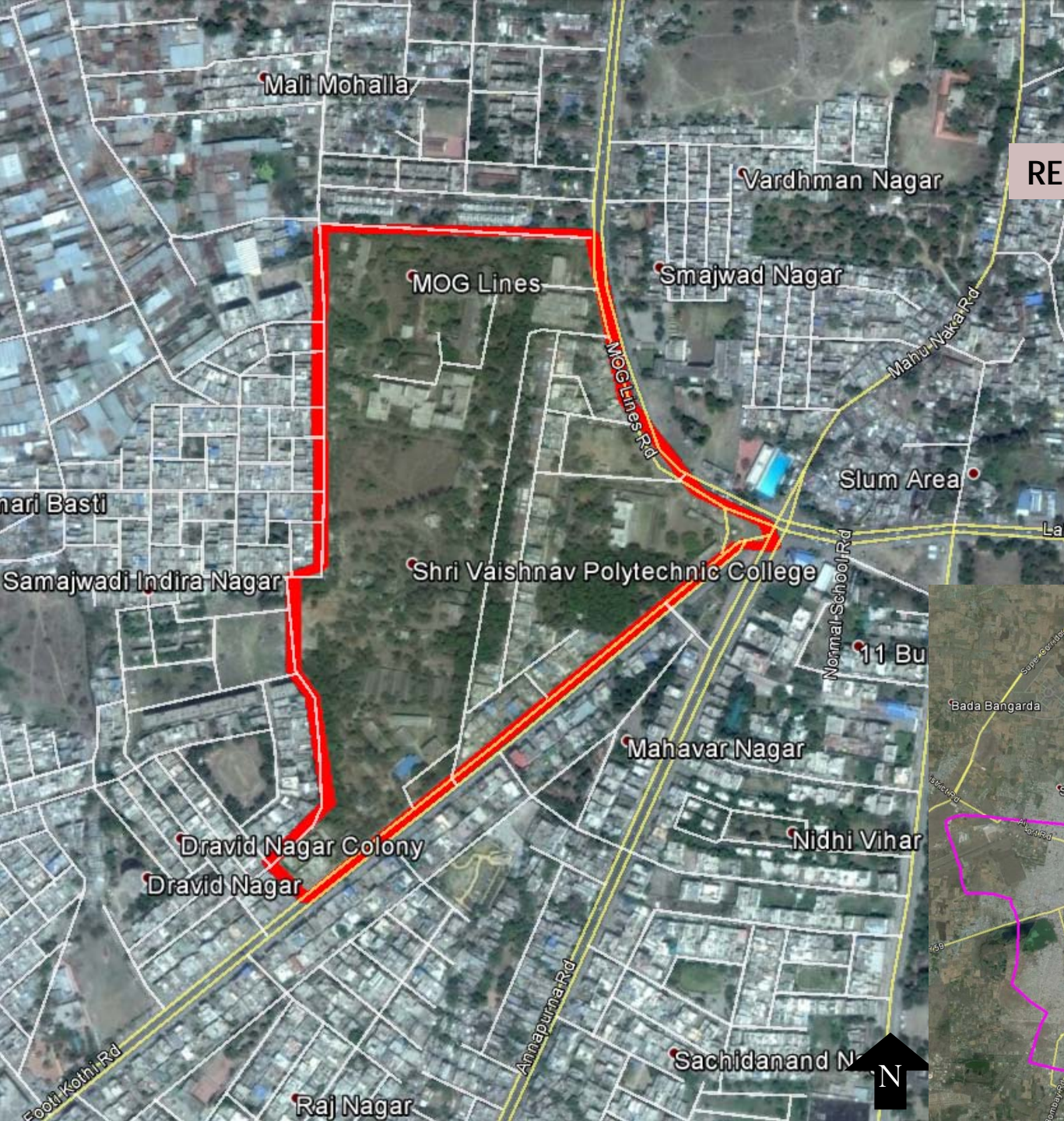


## RETROFITTING (Option 3)

SCH No 54 PU-  
3/4 (New CBD)

Area: 160 Acres  
(approx)

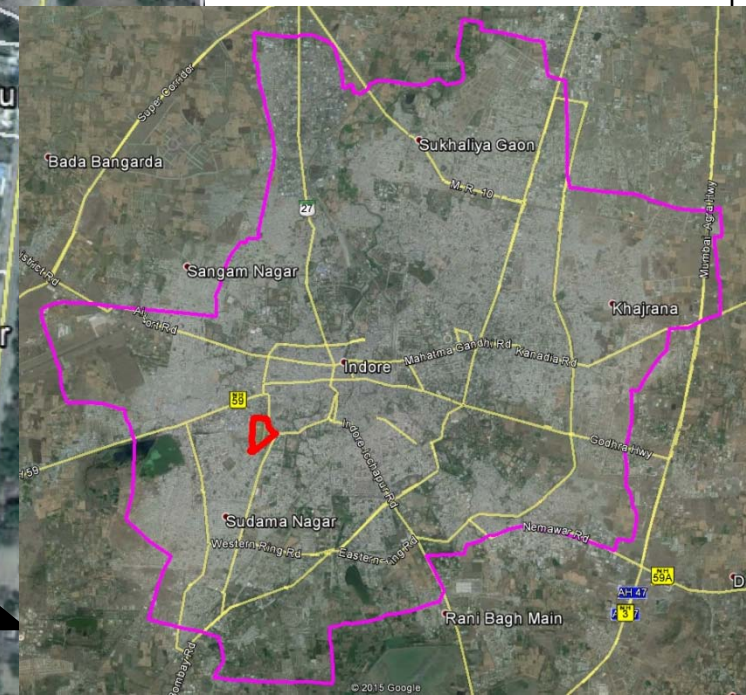


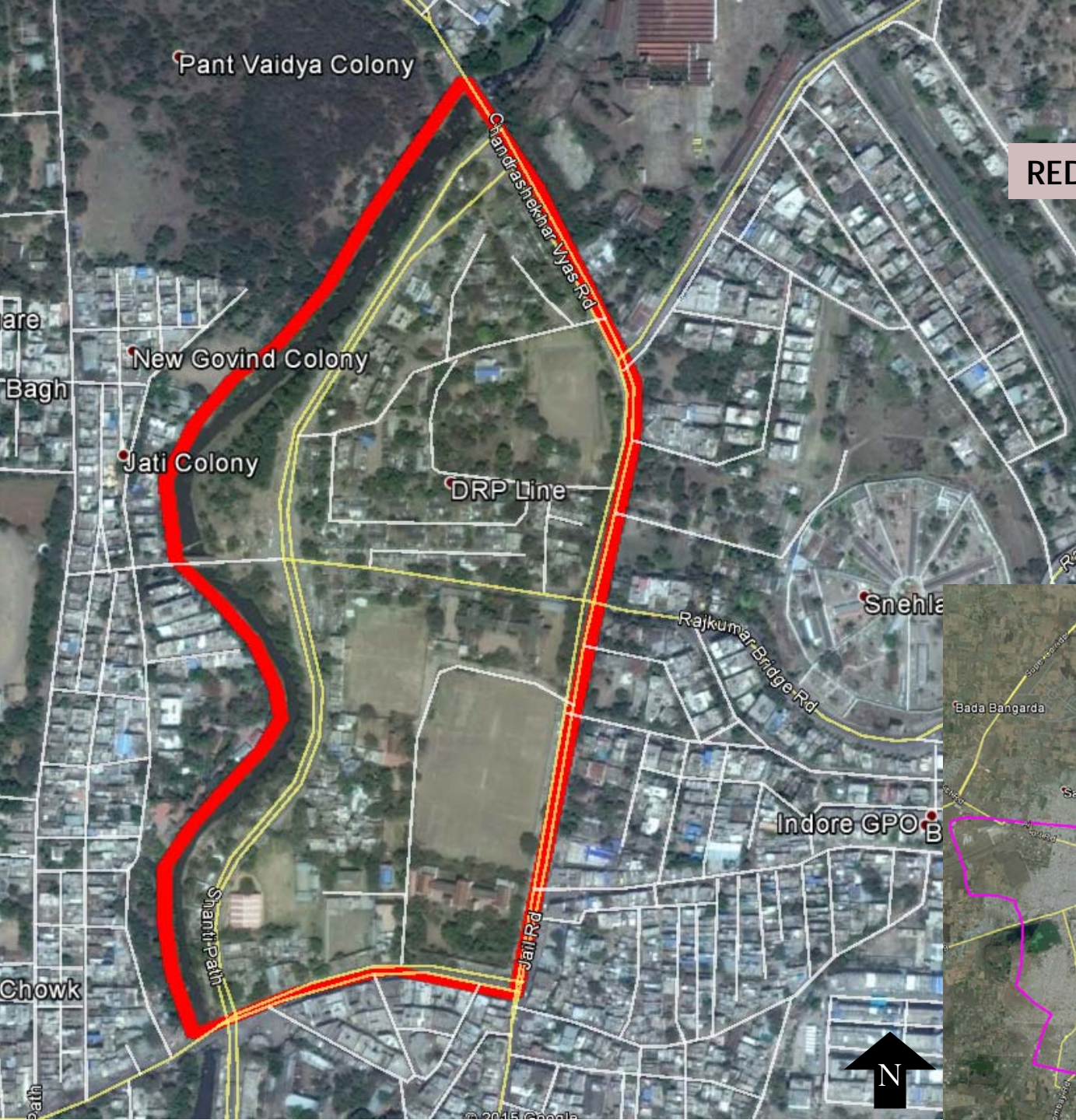


## REDEVELOPMENT (Option 1)

MOG Lines

Area: 56.60 Acres

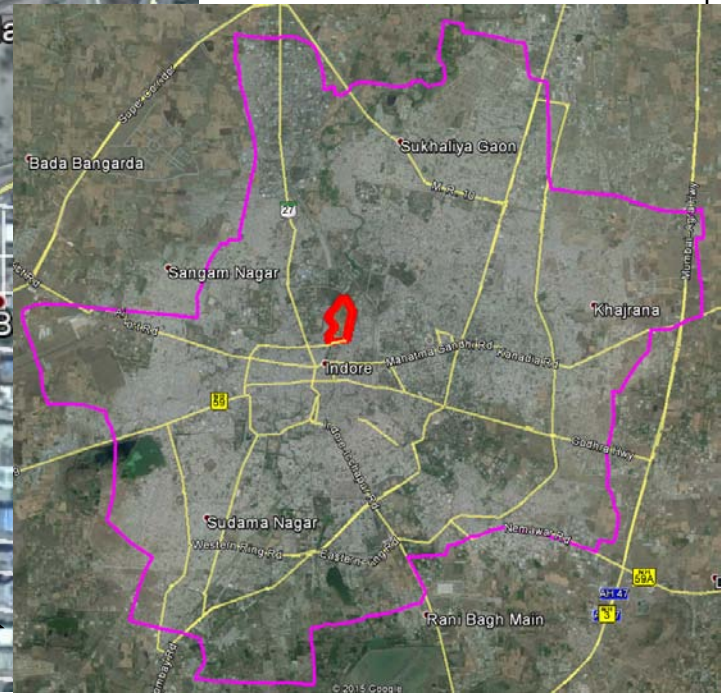




## REDEVELOPMENT (Option 2)

DRP Lines

Area: 83.60 Acres

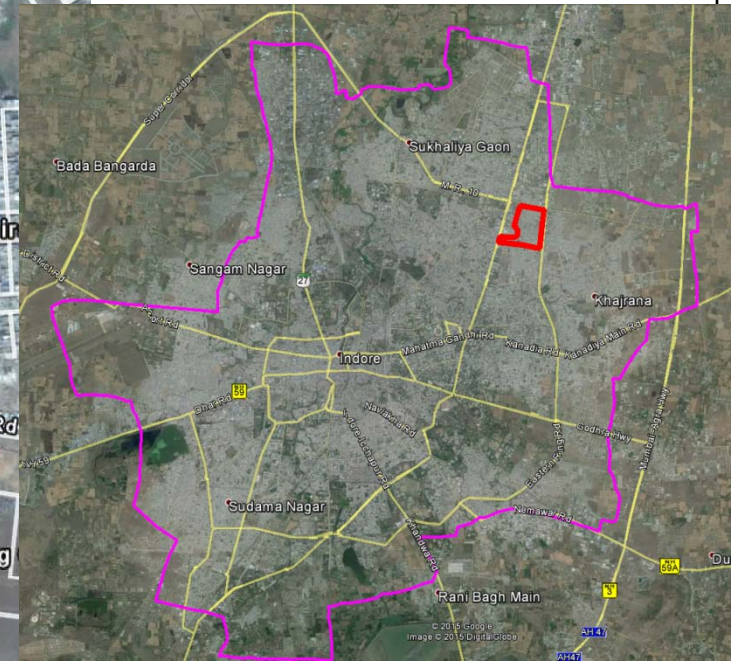




## REDEVELOPMENT (Option 3)

Malviya Nagar Area

Area: 139 Acres





Greater Kailash Road

AB Road

Tilak Nagar Road

PWD Area  
Area - 20 Acres

Badi Gwaltoli and Vinoba Nagar  
Area - 42 Acres

## REDEVELOPMENT (Option 4)

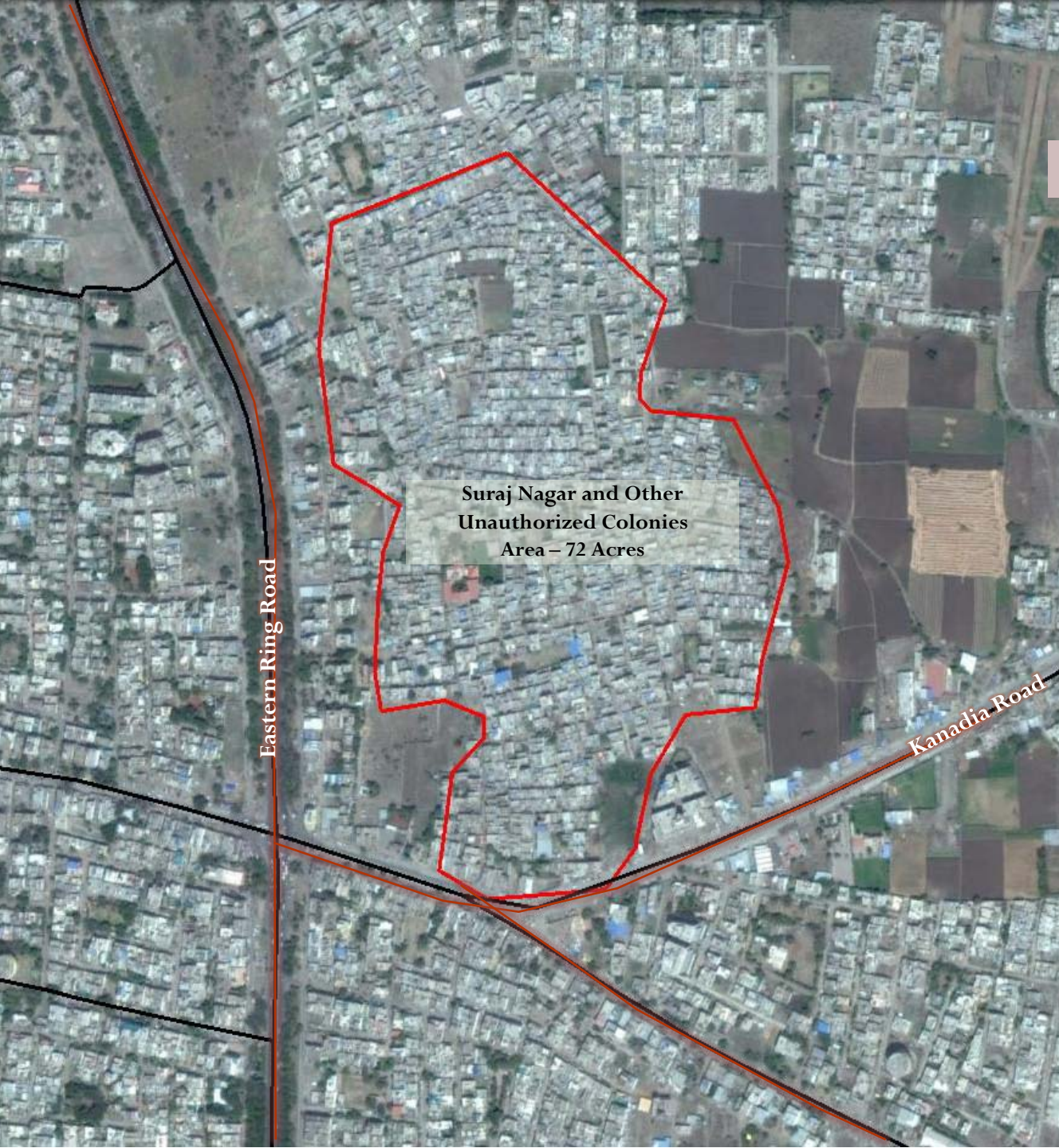
PWD Area

Area: 20 Acres

## REDEVELOPMENT (Option 5)

Badi Gwaltoli and  
Vinoba Nagar

Area: 42 Acres



Suraj Nagar and Other  
Unauthorized Colonies  
Area – 72 Acres

## REDEVELOPMENT (Option 6)

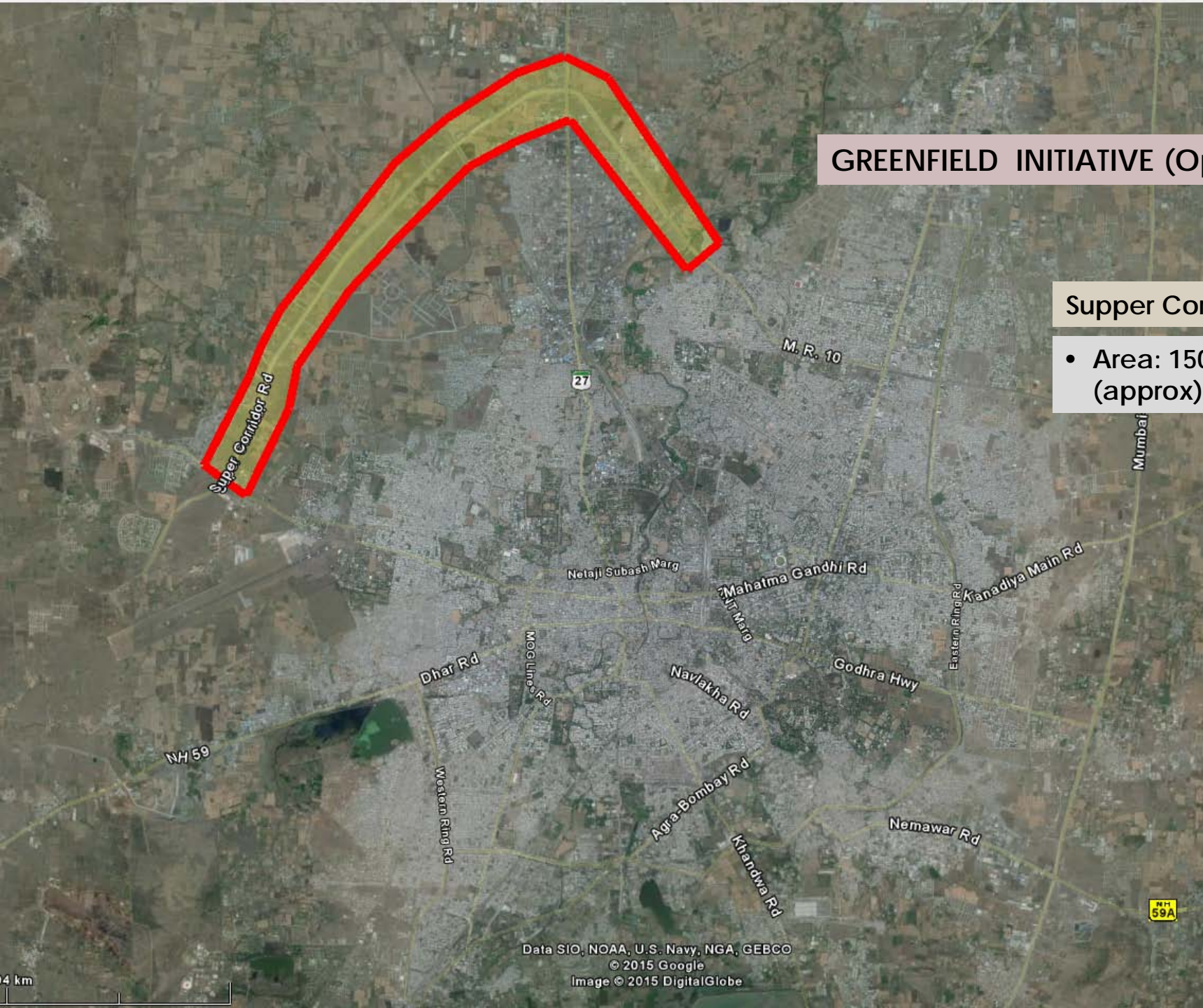
Suraj Nagar and Other  
Unauthorized Colonies

Area: 72 Acres

## GREENFIELD INITIATIVE (Option 2)

### Supper Corridor

- Area: 1500 Acres (approx)





# Prospective Pan City Proposals

- **Urban Governance and Management**
  - Mobile Application for all utility and citizen centric services
  - GIS Based Property Tax Assessment and Collection
- **Public Safety and Security**
  - Smart City Servilience
  - Incident Management and Emergency Response
- **Urban Transport**
  - Smart Parking
  - Intelligent Traffic Management and Signal Co-ordination
  - Integrated Multi-modal Public Transport System
  - Fare Integration of All Public Transport Modes
  - Real Time Passenger and Traffic Information System
  - GIS Based Bike sharing scheme
  - Logistics and Freight Traffic Management

# Prospective Pan City Proposals

- **Physical Infrastructure**

- Smart Street Lighting
- Smart Water Management (Smart Metering, Waste Water management)
- Wifi, Optical Fiber Network
- ICT Application for Rental Housing management

- **Social Infrastructure**

- Smart Health Card and Health Monitoring System for Citizens, Telemedicine, Health Portal, Emergency Medical Services
- Database and management information system for Schools
- Smart School Buses
- Online Centralized Admission system for schools

- **Economic infrastructure**

- City Level Job Portal

# **ESSENTIAL ELEMENTS OF STRATEGIC PLAN IN AREA BASED DEVELOPMENT**

# Revision of Planning Norms

- Provision of TDR
- Provision of Plot Amalgamation
- TOD Regulations
- FAR on Premium
- Regulations for Mix Use
- Regulations for Redevelopment
- Stringent Parking Regulations

# Essential Features

*(To be provided in Area Based and Pan City Development)*

## Core Infrastructure

1. Assured Electricity Supply, with at least 10% of the smart city requirement coming from solar energy
2. Adequate Water Supply, including waste water recycling and storm water reuse
3. Rain Water Harvesting
4. Proper Sanitation including Solid Waste Management
5. Underground electrical cables

## Smart Solutions

1. Robust IT Connectivity and Digitalization
2. Intelligent Traffic Management
3. Smart Metering
4. Smart Parking
5. Smart Security

## Livability

1. Pedestrian Friendly Pathways
2. Encouragement to non-motorised transport
3. Non-Vehicle Streets/Zones
4. Innovative use of open spaces
5. Energy Efficient Street Lighting
6. Visible improvement in the Area i.e. open areas, greenery etc.
7. Ensuring safety of citizens especially children, women and elderly

# Assured Electricity Supply

*(With at least 10% of the Smart City's energy requirement coming from solar)*

- Use of Solar Panels
- Use of renewable energy such as biogas and wind energy by households
- Smart Meters & Management
- Energy Efficient & Green Buildings
- Solar Powered Street Lights

Core Infrastructure



Possible Solutions (to Achieve Essential Requirements)	Rt	Rd	Gf
➤ Solar Power Plant		✓	✓
➤ Rooftop Solar panels <ul style="list-style-type: none"> <li>• Savings in transmission / distribution losses</li> <li>• Saving of land</li> <li>• Less gestation time</li> </ul>	✓	✓	✓
➤ Net Metering Policy for Roof tops	✓	✓	✓
➤ Adoption of Green Buildings and energy efficient practices in building designs <ul style="list-style-type: none"> <li>• Efficient use of energy, water, and other resources</li> <li>• Reduction and sustainable management of waste</li> </ul>		✓	✓
➤ Solar Powered Street Lights	✓	✓	✓

1 KW Load Required for 100 Sq.ft Area

**Load and Space Requirement**  
**Thumb rules for Solar panels:**

- 10 Sq meter area is required= 1 Kw capacity solar system

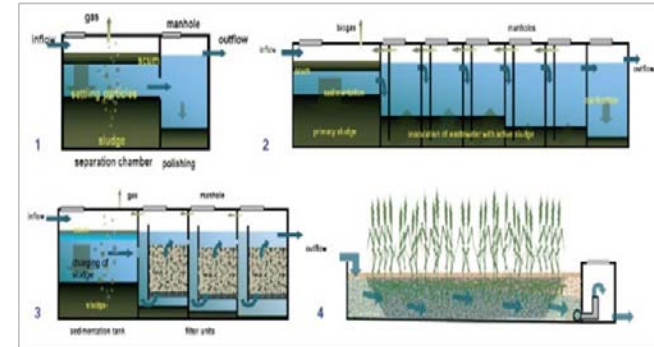
- 70% of rooftop area can be used for panel's installation

- The land required for a 1 MW power plant setup = 5 to 7 acre

# Adequate Water Supply including Waste Water Recycling and Storm Water Reuse

- 24 x 7 Water Supply
- Water Quality Monitoring and SCADA
- Smart Meters for Assured & Metered Water Supply
- Decentralized Wastewater Treatment Systems
- Rain Water Harvesting and Reuse of Rain Water

Core Infrastructure



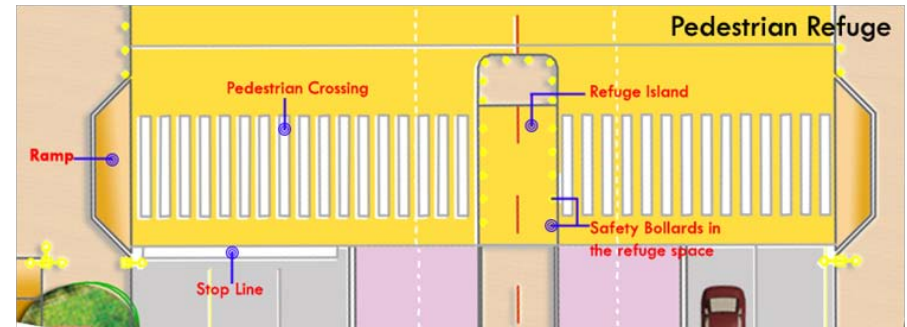
Possible Solutions (to Achieve Essential Requirements)	Rt	Rd	Gf
➤ 100% Metering (at HH and Zone Level)	✓	✓	✓
➤ Installation of SCADA System	✓	✓	✓
➤ Dual Piping Drainage system to collect separate Waste water (Kitchen, Bathroom) and Sewage		✓	✓
➤ Decentralized Wastewater Treatment Systems		✓	✓
➤ Rain Water Harvesting (at HH level and at Neighborhood level)	✓	✓	✓
➤ Rain Water Management (water retention layer at site, collection of storm water runoff in basement storage tanks, green roof, etc)	✓	✓	✓

Relevance to Indore
Pan City
<b>Achievable</b> <ul style="list-style-type: none"> <li>• 24 X 7 Water supply is achievable</li> <li>• SCADA upto ESR</li> </ul>
Area Development
<ul style="list-style-type: none"> <li>• 24 X 7 Water supply and</li> <li>• 100% metering with SCADA is achievable</li> </ul>

# Pedestrian Friendly Pathways

- Walk ways and Cycle tracks
- Multi function zone for Pedestrians
- Tree-lined sidewalks
- Midblock crossings
- Mid-block Pedestrian Refuges
- Public Safety and Security

Livability



Retrofitting	Redevelopment/ Greenfield
<ul style="list-style-type: none"> <li>➤ Remove Encroachments and create walkable locality</li> <li>➤ Public Safety and Security by proper enforcement of Traffic rules</li> </ul>	<ul style="list-style-type: none"> <li>➤ Road Design as per TOD norms</li> <li>➤ Public Safety and Security by Eyes on the Street                             <ul style="list-style-type: none"> <li>• Transparency in Commercial Frontage</li> </ul> </li> </ul>

# Non-vehicle streets/zones

- Making Core Market Area non-vehicle Zone / Time Bound Non Vehicle Zone
- Smart Parking Solutions for shop Keepers and Residents
  - ❑ Identification of Multi Level / Basement Parking Locations
- Park and Ride Scheme
  - ❑ Park the vehicle on the way and to make the remaining travel by public transport/ NMV
  - ❑ Smart Parking
  - ❑ Cheaper parking spaces compared to the ones in the city centre

Livability



# Visible Improvement in the Area

- Utility Tunnel
- Encroachment Free Public areas
  - Provide separate space for informal market

Livability

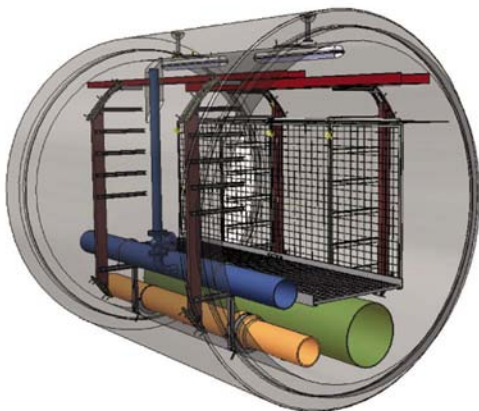
## Relevance to Indore

### Pan City

- Utility Tunnel is not achievable because of lack of Finance

### Area Development

- Narrow Utility Tunnel achievable



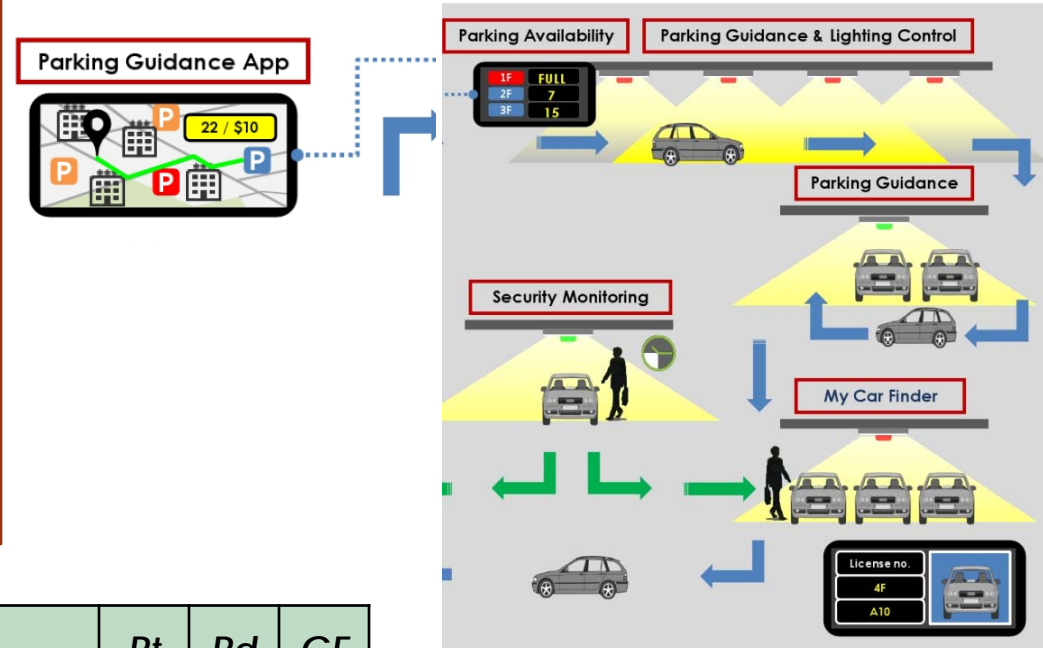
Possible Solutions (to Achieve Essential Requirements of Utility Tunnel)	Rt	Rd	Gr
➤ Integration of Urban Infrastructure through Utility Tunnel <ul style="list-style-type: none"> <li>• Water Supply, Sewerage, Electricity cables, Telecommunication cables, Gas piping</li> <li>• Double Piping system</li> </ul>			✓
➤ Underground Installation including <ul style="list-style-type: none"> <li>• Electricity cables</li> <li>• Telecommunication cables</li> <li>• Gas piping</li> </ul>	✓	✓	✓



# Smart Parking

- Real-time data on parking space availability & route using ICT
- Reservation of parking slots using web based applications
- Fee based service
- Smart Multilevel Parking
  - Sensor Technology
  - Automatic Ticketing System
  - Smart Lighting System
  - Smart Lifts

Smart Solutions



Possible Solutions (to Achieve Essential Requirements)	Rt	Rd	GF
➤ Smart Multilevel Parking	✓	✓	✓
➤ ICT based Smart Parking		✓	✓

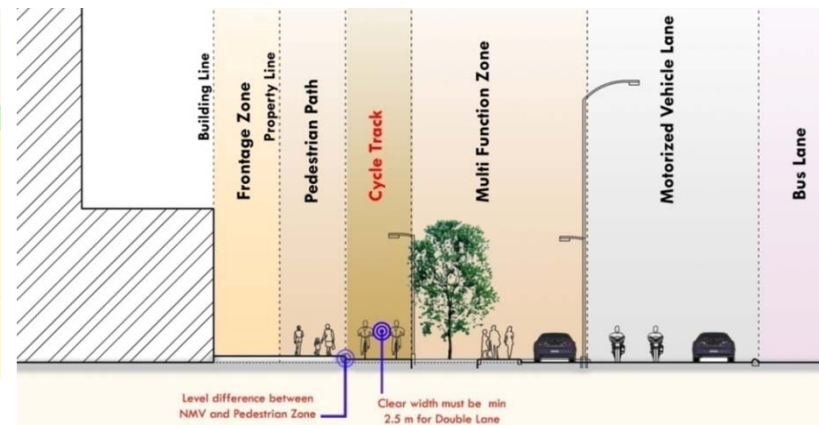
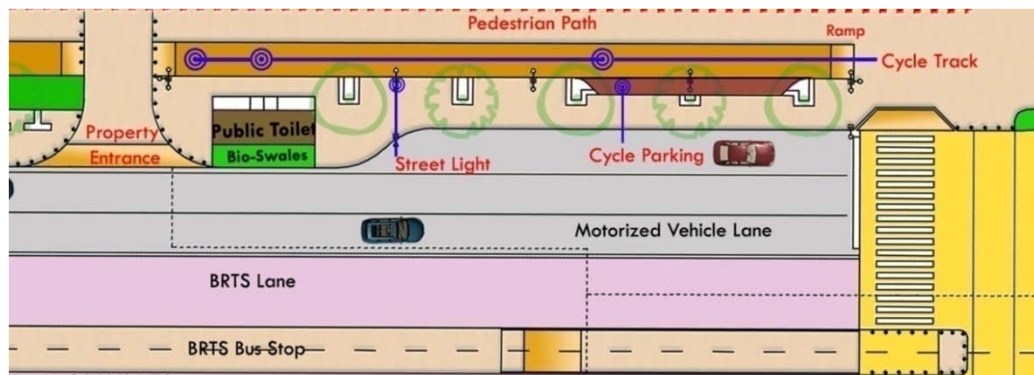
# Encouragement to non-motorized transport

- Battery Operated Cycle Rickshaw as a last mile Para transport connectivity on Feeder Roads

*(It generates employment opportunities as well as serves the Urban poor's )*

- Bike Sharing Scheme
- Multi Function Zone design

Livability



# FINANCING SMART CITY

# Financing Indore - Smart City Proposal

- **Gol will provide Rs 500 Crs and Rs 500 Crs has to be invested by State/ULB**
- **Any excess fund requirement will be mobilized through**
  - dovetailing the Retrofitting Proposal with one of the Redevelopment Proposals (within or outside) which would generate the required funds in full or part for the Retrofitting Proposals
  - IMC's Own Sources - IMC may start generating Dedicated Smart City Fund, to be mobilized through
    - Levying of Smart City Development Surcharge/Cess on Property tax of particular area as above.
    - Levying of Smart City Development Surcharge on Utility Bills of chosen Pan City Initiative .
    - Premium from Commercial Development.
    - **FAR on Payment (additional FAR over Threshold) and other paid incentives**
    - Levy of User Charges for O&M and Debt Servicing

# Financing Indore - Smart City Proposal

- Any excess fund requirement will be mobilized through
  - **Part of 14<sup>th</sup> Finance Commission Funds**
  - **Private Sector Equity in SPV to the extent of 49%**
  - **PPP Packages for bankable projects in the Smart City Proposal**
  - **Monetization of Land**
  - **Municipal Bonds through credit rating**
  - **Debt from Financial Institutions**
    - Repayment done through Dedicated Urban Development Fund or
    - Tax Increment Financing may be sought (to raise loans on future gains in property tax for a particular area or particular service)
    - Generation of Fund through FAR on Payment (additional FAR over Threshold) and other paid incentives
    - Generation of Fund through TOD by providing additional FAR in the selected Corridors which will also support Public transport by increasing the Ridership.
  - **Part convergence of schemes through AMRUT, Swachh Bharat Mission and Housing for All.**



Thank You

*“The best way to predict the Future is to create it”*