

**TRANSIT ORIENTED DEVELOPMENT  
& Land Value Capture  
- A Process Oriented Approach**

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Centre of Excellence in Urban Transport

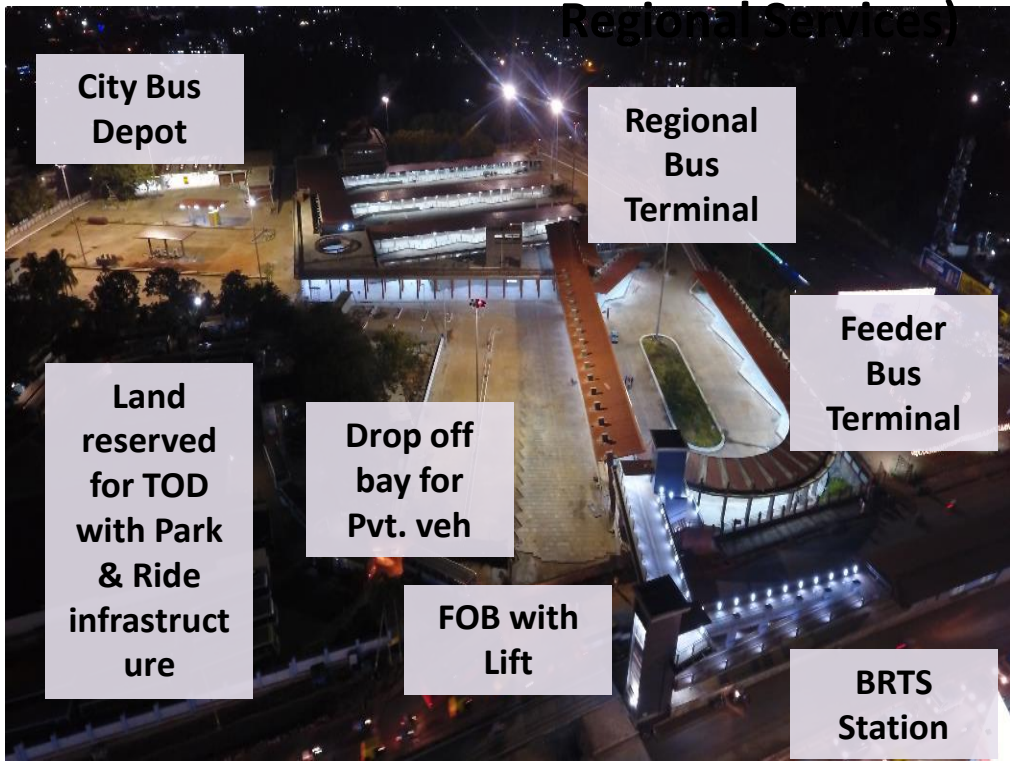


# Celebrating Bus Service: Sustainable Public Transport

## Services

Planning for Seamless Transit Infrastructure (Intracity + Intercity + Sub-Urban +

Hosur  
Interchange



Regional Services



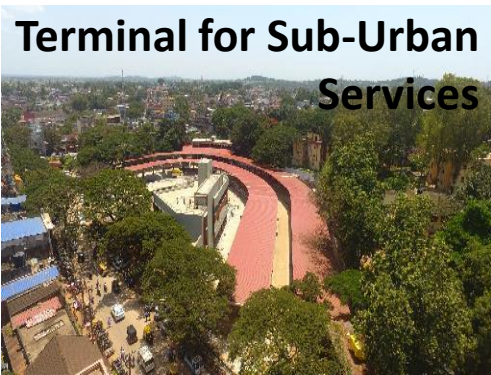
Dharwad  
BRT  
Depot



Hubli  
BRT  
Depot



Foot  
Over  
Bridges  
for BRT  
Station



Terminal for Sub-Urban  
Services



Multilevel  
Dharwad  
BRTS  
Terminal

# Transit Oriented Development

- **Higher density development**
- **Pedestrian friendly streets**
- **Green Network**
- **Efficient use of front margin**
- **Efficient use of ground**
- **Higher transit connectivity**
- **High intensity of infrastructure**
- **Well designed and well managed public parking (On-street & Off-street )**
- **Destination to city tourist places, Economic Centre, Commercial hub and major transit route**

## TOD Practices in World

**Bogota: TransMilenio BRT**

- Bogota has first class **BRT system called TransMilenio.**
- For further enhancement of the service, BRT system has adopted **a trunk feeder model** by establishing segregated bus ways on cities major arterial road.
- Feeder buses also operate in **low income neighbourhood on the urban periphery**

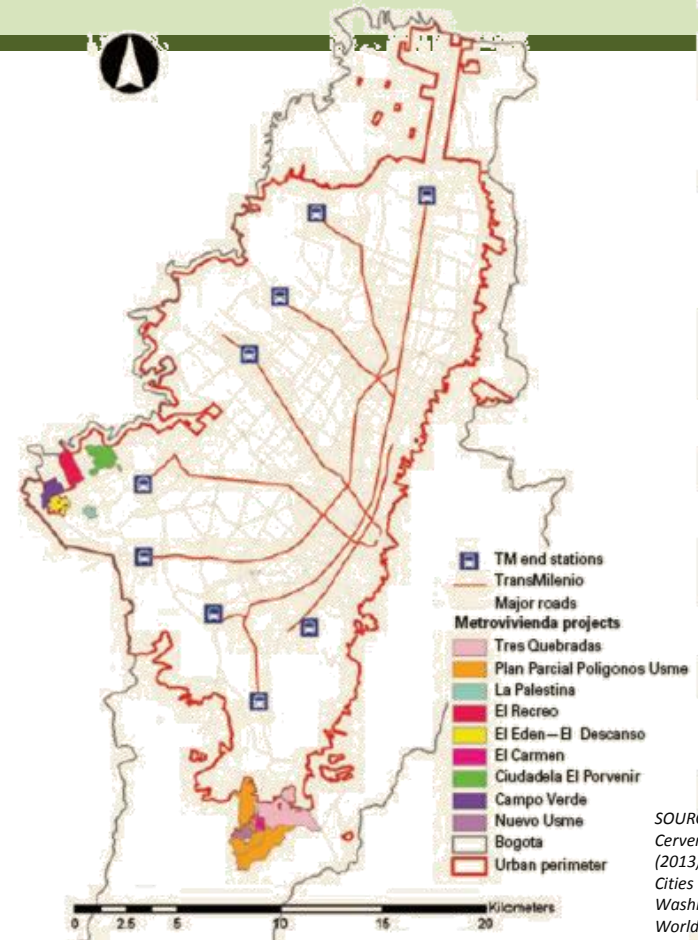
**Factors supporting Bogota TOD**

**Transportation demand management** to lessen traffic congestion

Connecting affordable housing : **Metrovivienda.**

**Metrovivienda**

**provide serviced land** on which private development entity **can construct affordable housing for low income group** on the areas near transit so that low income group can afford shelter and transport together.

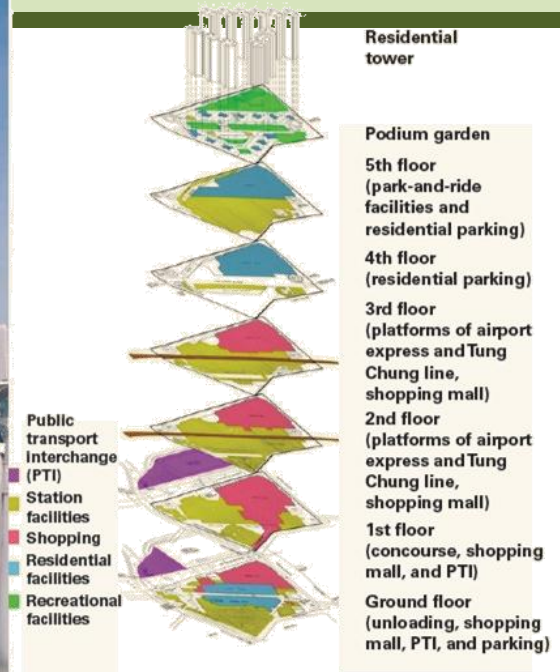


SOURCE: Suzuki, H., Cervero, R., & Luchi, K. (2013). *Transforming Cities with Transit*. Washington D.C.: The World Bank

TOD Practices in World

**Hong Kong SAR, China: Profitable transit**

- Hong Kong , land value capture as a tool for mobilising finance through **“Rail +property” (R+P) programme.**
- MRTC purchases development right from local government at a **before rail price** and sells these rights to a selected developers at an **“after rail”** price.
- Fare and other **revenues** with the income from supplementary real estate development was able to **supplement the full cost of transit investment, operation and maintenance.**
- MRTC’s involvement in all property – related activities produces 62% of total income (**more than twice as much as fare**).
- Benefits society by reducing sprawl, air pollution, energy consumption and higher ridership through increased density.



The break up of revenues is as follows –

Railway Operations	24%
Property Rental	22%
Property Development	26%
Station Commercial Development	24%
Revenue from outside HK	04%

SOURCE: Suzuki, H., Cervero, R., & Luchi, K. (2013). Transforming Cities with Transit. Washington D.C.: The World Bank

TOD Practices in World

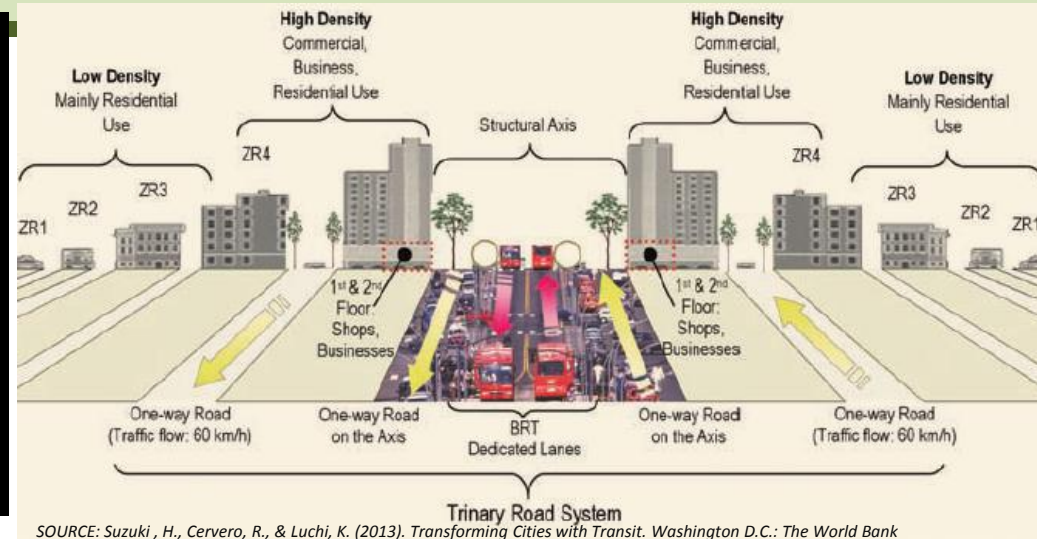
**Curitiba, Brazil**

shift from radial concentric growth to a linear growth pattern

To ensure TOD built form, Curitiba **government mandated that all medium and large scale urban development along BRT** corridor.

Good modal connections between different bus systems.

Land use planning to focus on pedestrians.



SOURCE: Suzuki, H., Cervero, R., & Luchi, K. (2013). *Transforming Cities with Transit*. Washington D.C.: The World Bank

Concept of **TRINARY, three parallel roadways** with **compatible land use, building heights that tapers** with distance from BRT corridor.

The first two floors along the busway, doesn't count against FAR and are devoted to retail use.

Above second floor, building must be setback at least 5m from plot line, to allow sun on busway.

The inclusion of **upper level housing allows property owner to density bonus**, which **balanced the bus flow in both the directions** and ensure the efficient use of BRT.

# A PROCESS ORIENTED APPROACH

**Ahmedabad Municipal Corporation; Ahmedabad Urban Development Authority; Government of Gujarat**





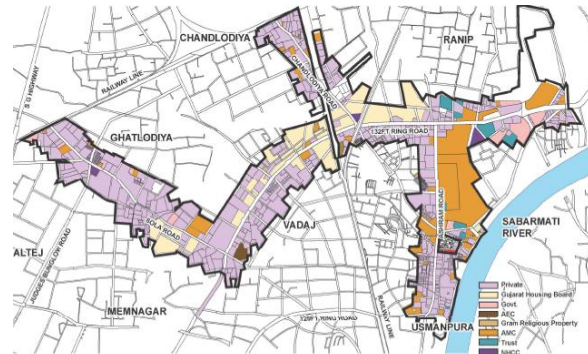
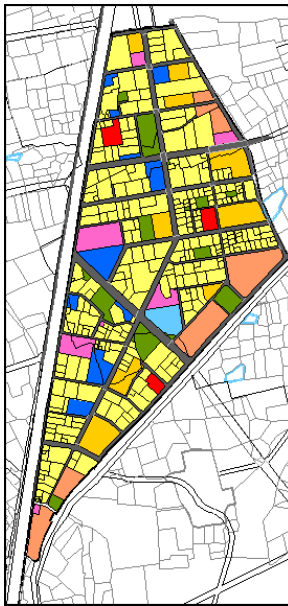
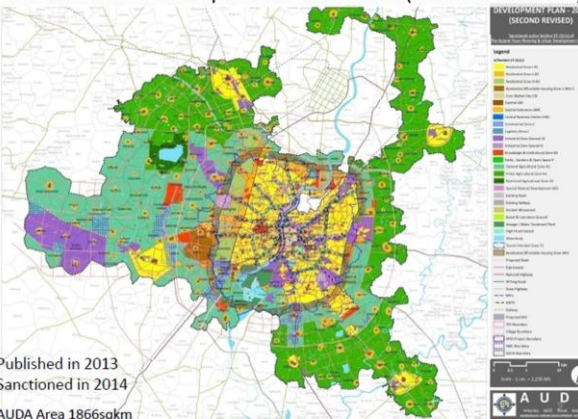
# “Town Planning Schemes” to be read as “Town Planning Schemes or Local area Plans”

**Development Plan” (Macro Level) (Since 1954)**

**“Town Planning Schemes” (Micro Level) (since 1915)**

**Local Area Plan” (Micro Level) (Since 2014)**

Sanctioned Development Plan 2021 (second revised)



**Zoning Proposals  
Regulation for Development  
City level Transportation and  
infrastructure planning and  
implementation**

Land reconstitution  
Neighborhood level road network ,  
social and physical  
infrastructure  
Financing of neighborhood level  
infrastructure

Detailed area level plan with urban  
design interventions  
Planning for TOZ  
**Amendment in Gujarat Town Planning &  
Urban Development Act, 1976**  
-Local Area Plan

# Land Management

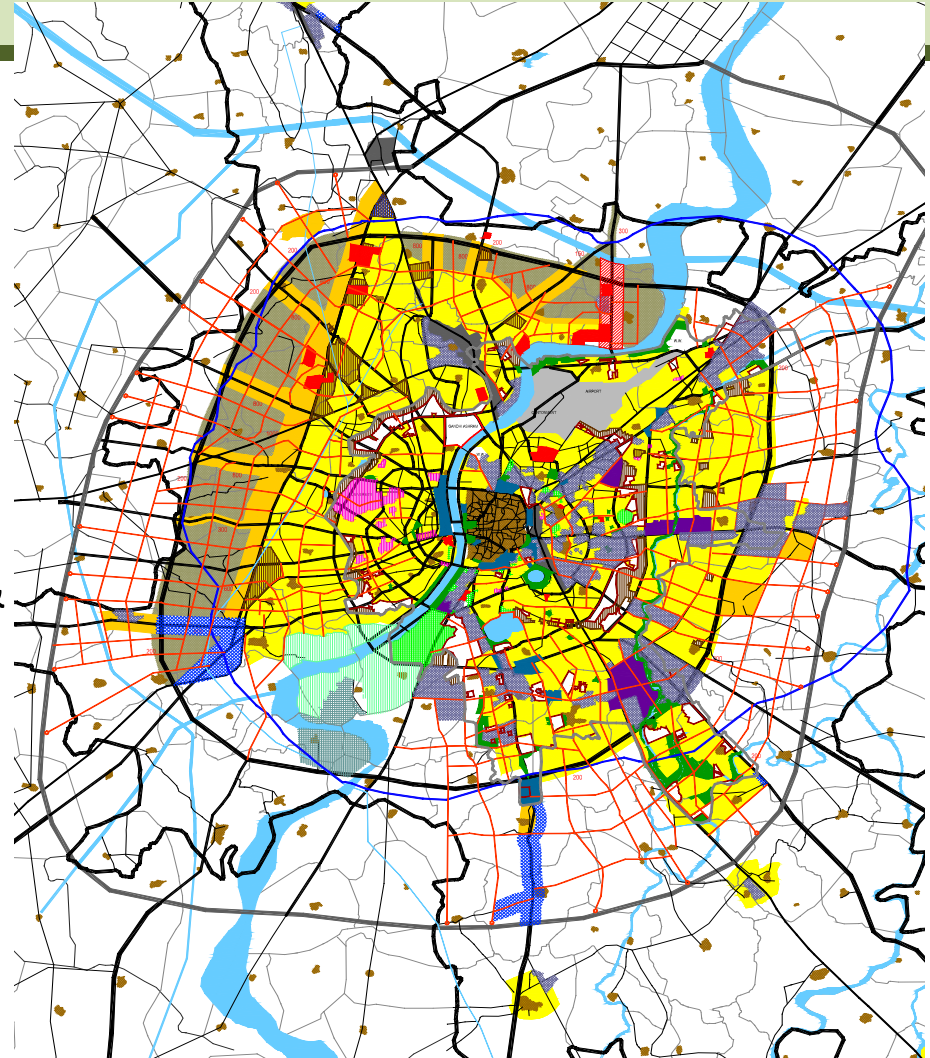
*3 Stage Process Under the Gujarat Urban Development and Town Planning Act-1976*

## Development Plan

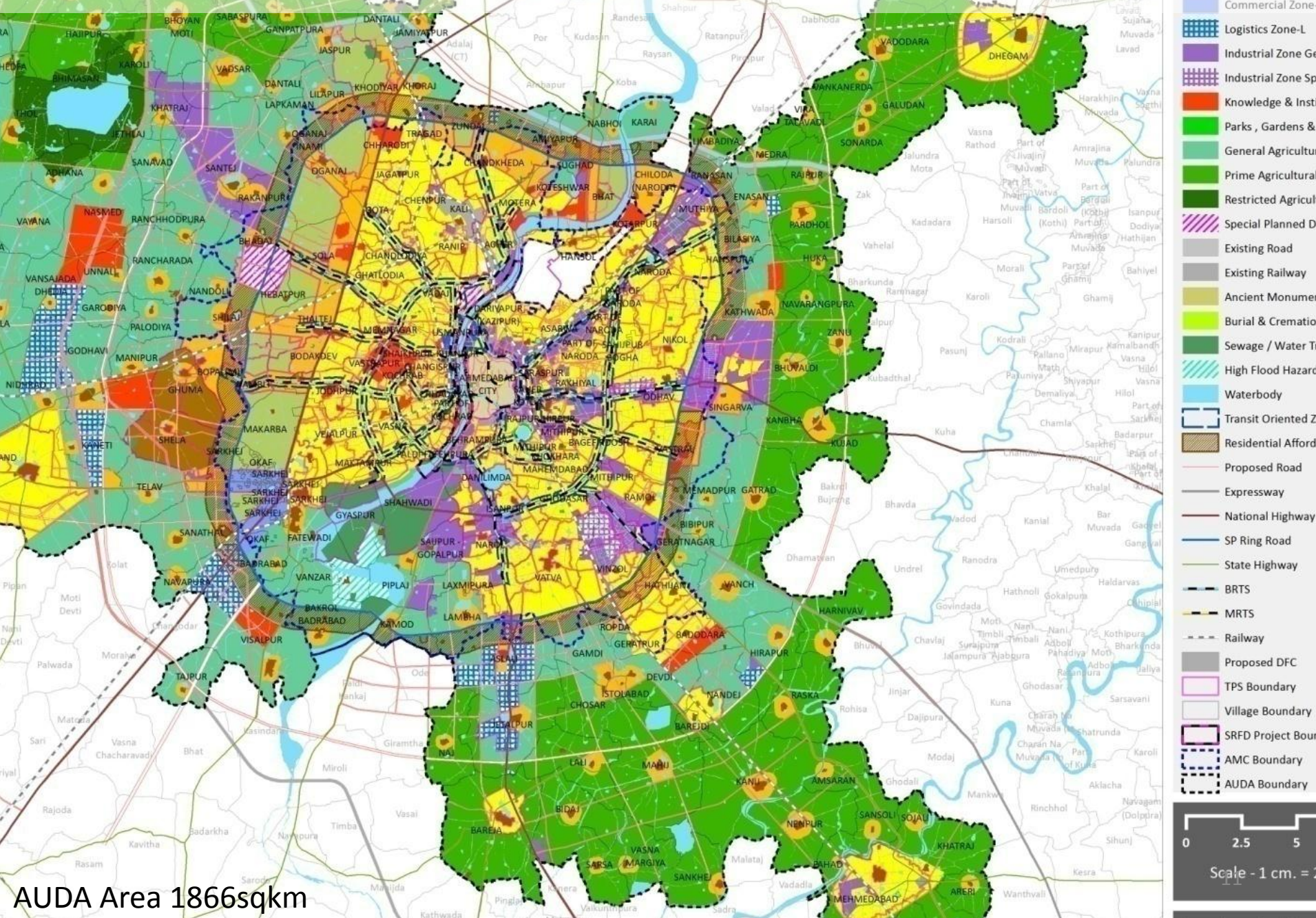
- **Provides Overall Development Framework**
  - Overall Direction of Urban Expansion
  - Landuse Zoning
  - City level road network
  - **Rapid Transit Network**
  - **Transit Ready Streets**
  - City Level Infrastructure (Utilities & Amenities)
  - Reservations of Land for other Public Purposes
  - Development Control Regulation/rules

Ahmedabad DP's

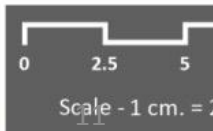
1965, (1975) 1987, 2002, **2014**



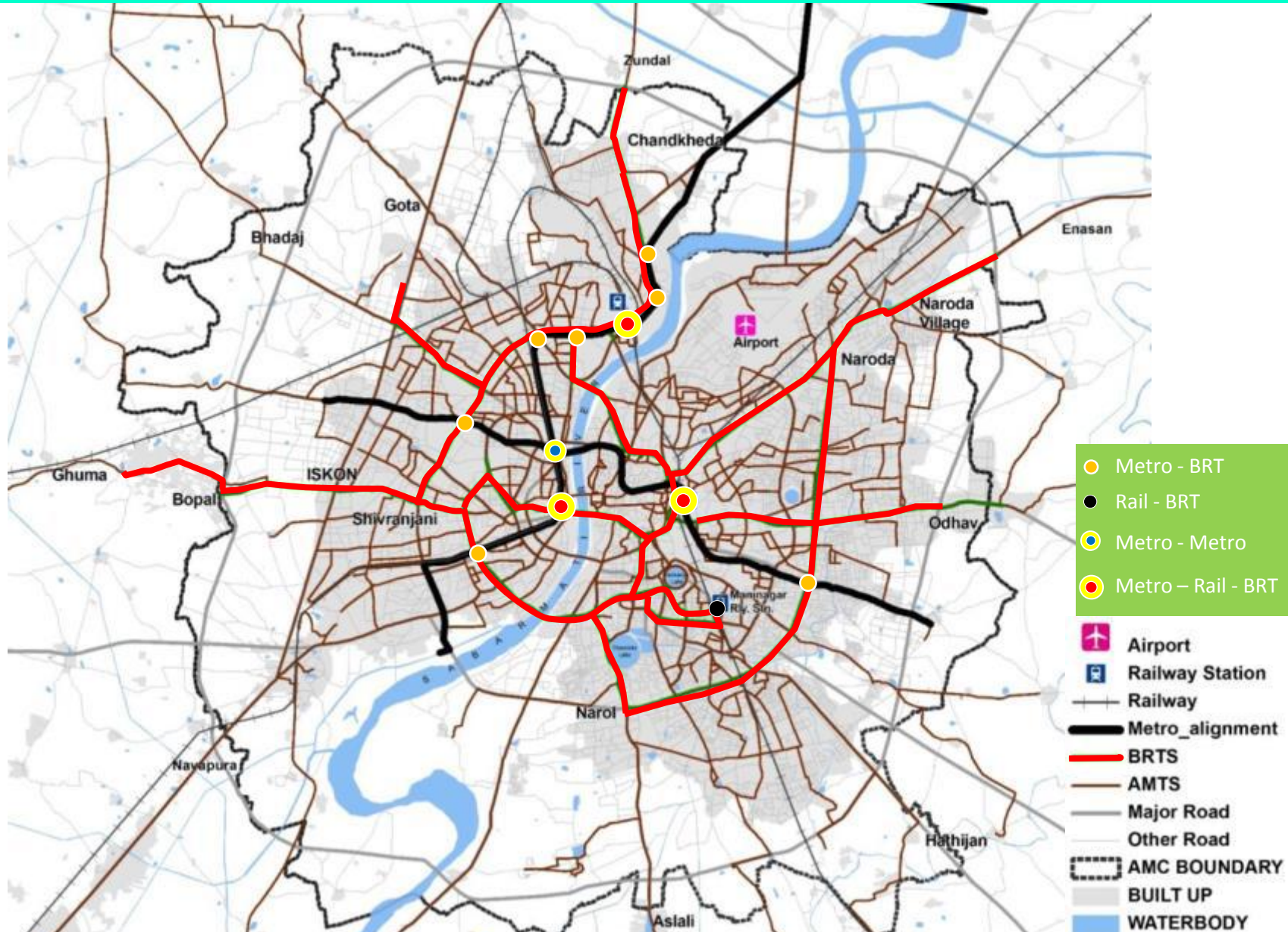
# Second Revised Draft Development Plan 2021



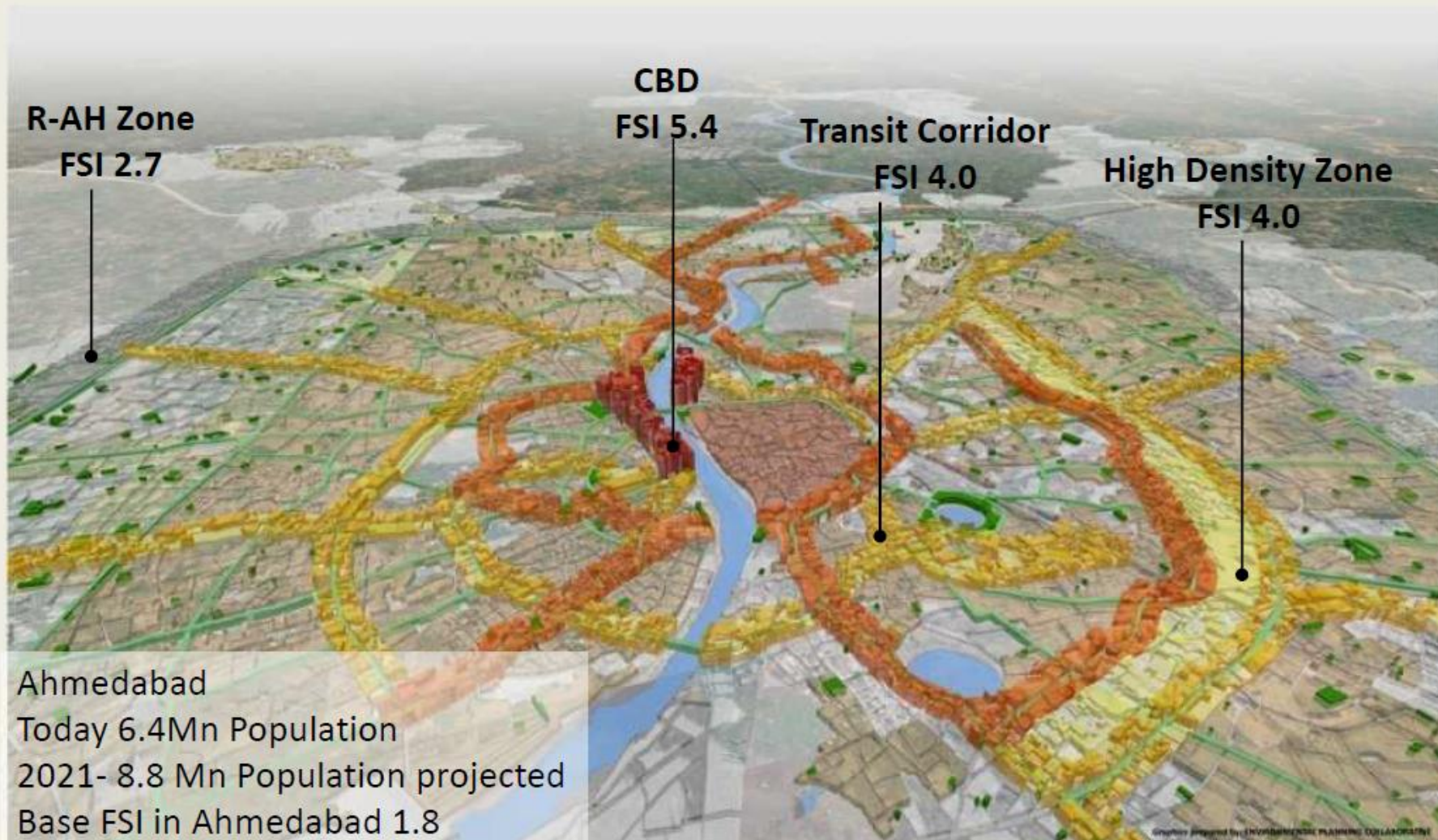
AUDA Area 1866sqkm



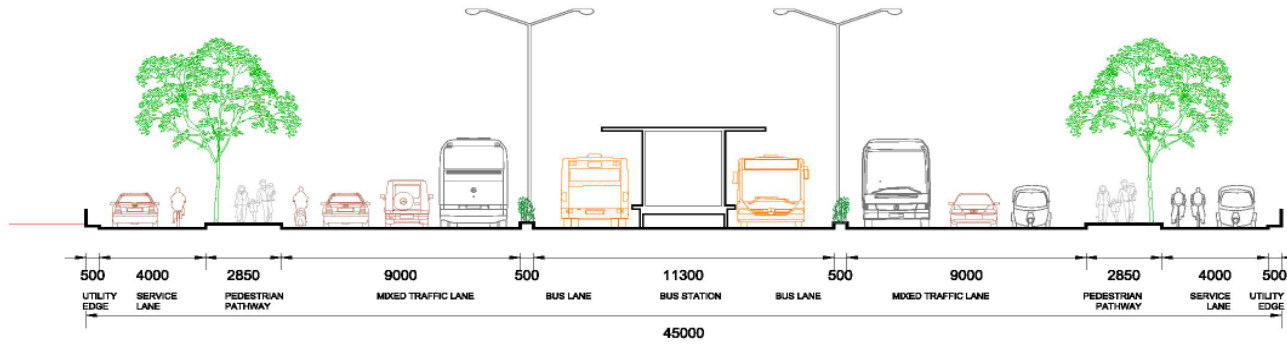
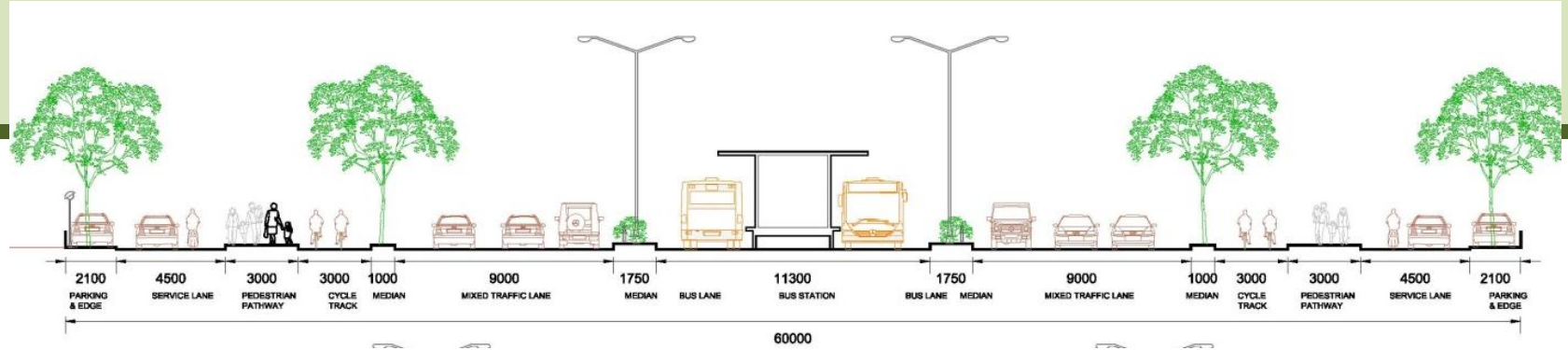
# CMP – Public Transport Proposals



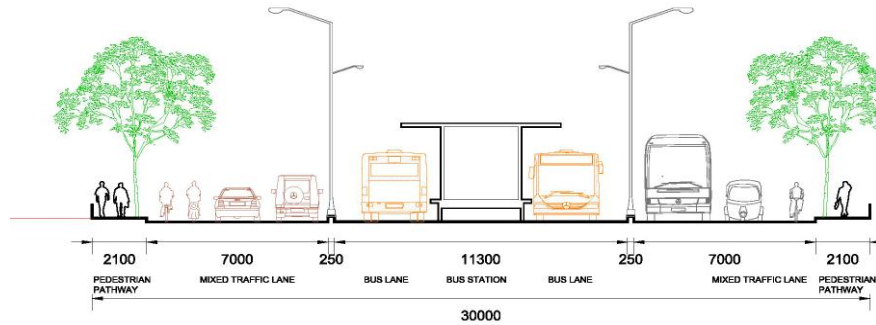
# INTEGRATED LAND USE WITH MASS TRANSIT 2021



# TRANSIT READY STREETS



Arterials



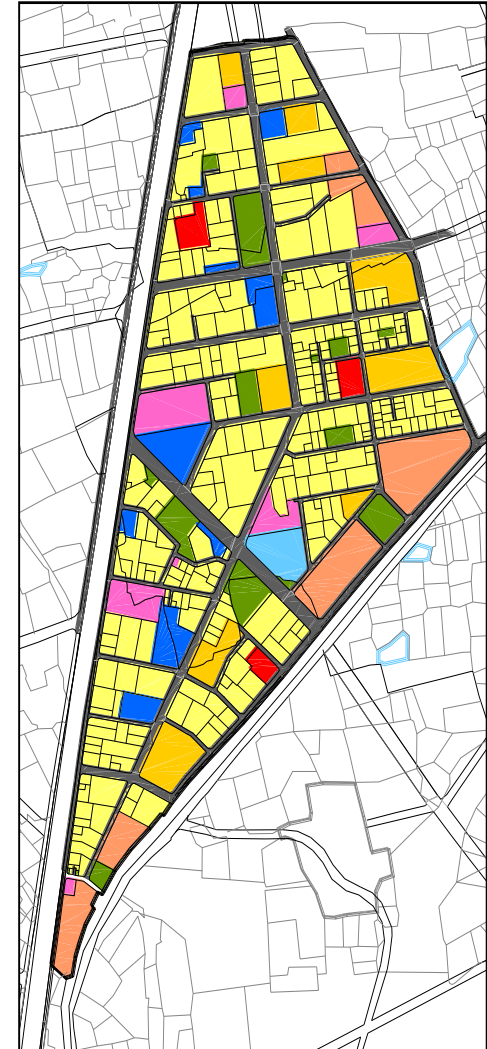
Sub Arterial

# Land Management Process

*Under the Gujarat Urban Development and Town Planning Act-1976*

## Town Planning Scheme (TPS)

- **A land readjustment tool to adapt land for urban use**
  - Reconstitution of land holdings
  - Appropriation of land for public uses without acquisition
  - Local level road network
  - Local level social and physical infrastructure
  - Land Bank for Urban Poor
  - Infrastructure Cost Recovery
    - Land appropriation compensation adjusted against land value increments due to infra. provision
    - Land for Financing of infrastructure (15%)

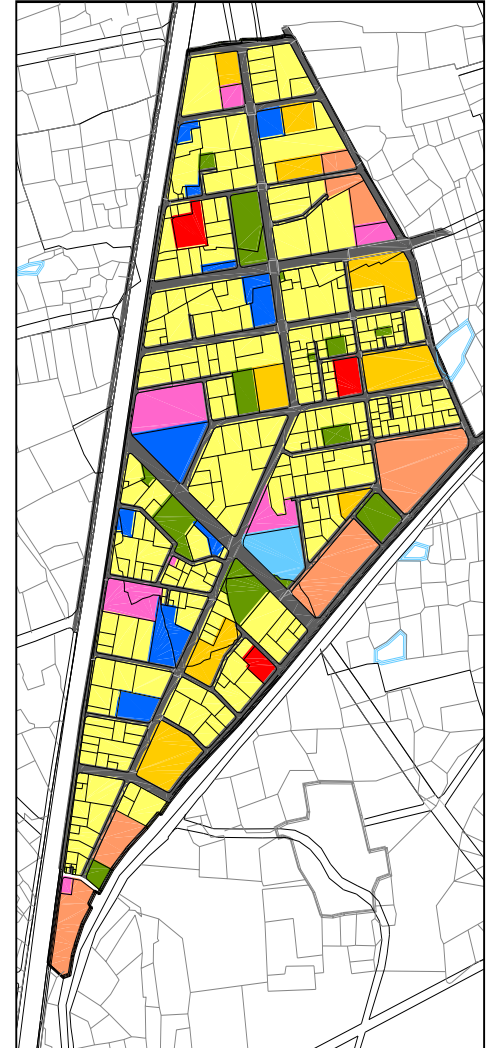
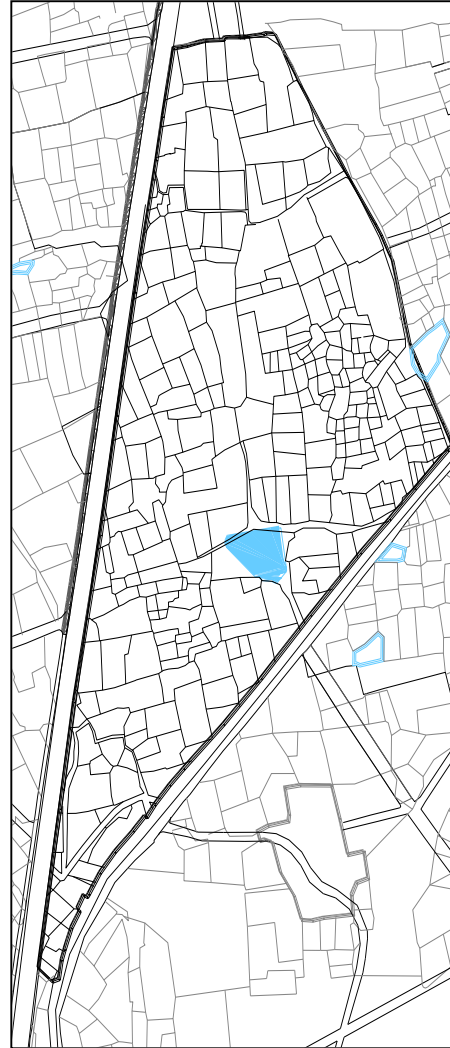


# Town Planning Scheme

*Under the Gujarat Urban Development and Town Planning Act-1976*

## Land Area for Public Purposes

- Appropriation of land for public uses *upto 50%*
- Road Network –*upto 20%*
- Local level social and physical infrastructure (*upto 5%*)
- Land for Economically Weaker Section Housing (*upto 10%*)
- *Land Bank for Financing of infrastructure (upto 15%)*

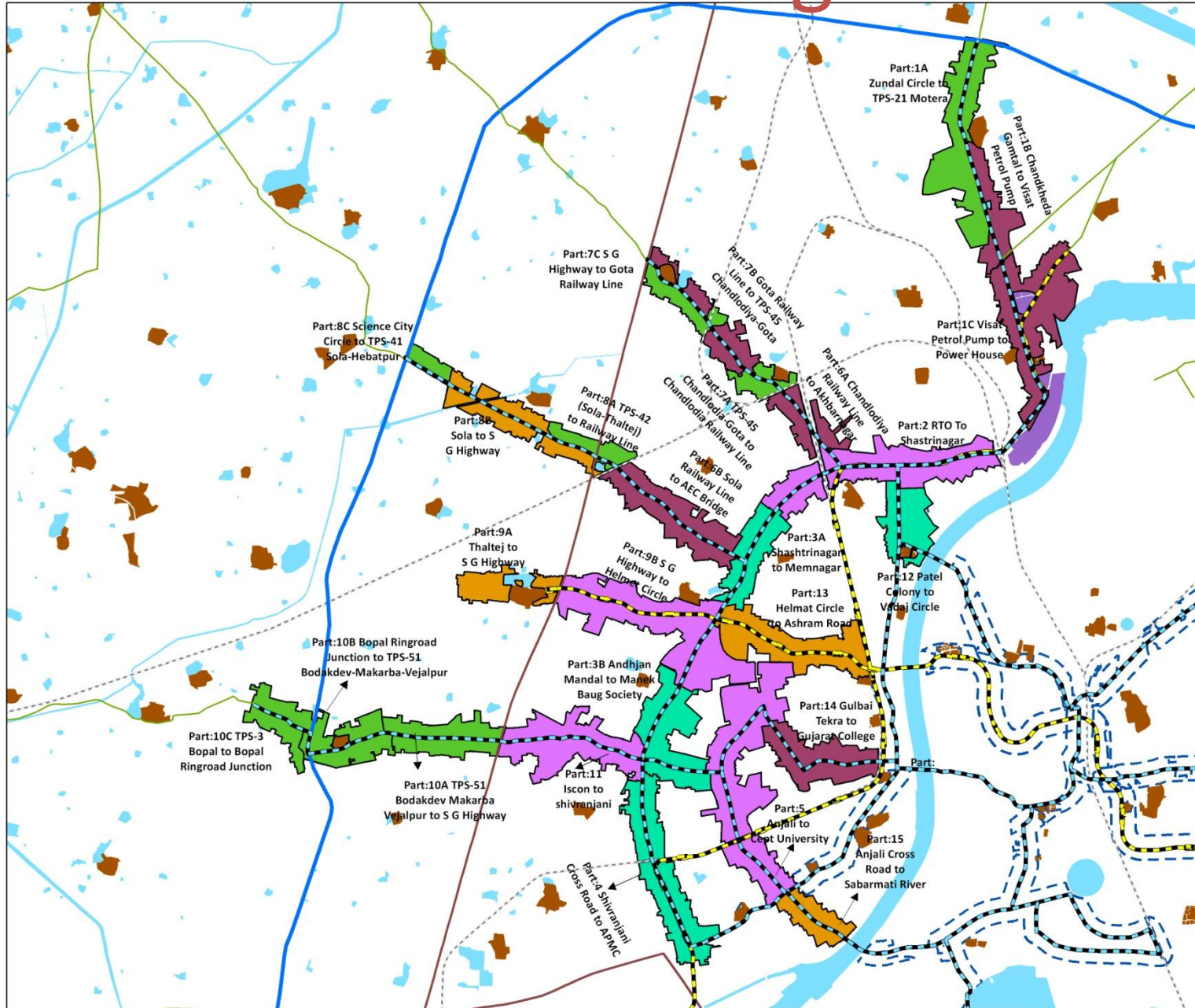




# 200mt Buffer Along BRTS and MRTS corridor- FSI 4.0



# TOZ Area Planning Distribution



## TOZ AREA PLANNING

- Legend**
- BRTS
  - MRTS
  - Expressway
  - National Highway
  - SP Ring Road
  - State Highway
  - Railway
  - Draft TP Scheme
  - Phase 1
  - Phase 2
  - Phase 3
  - Phase 4
  - Industrial Zone General-IG
  - Gamtal-GM
  - Waterbody
  - Transit Oriented Zone-TZ



No.	Road Width (in meters)	Maximum Permissible Building Height (in meters)
1	Less than 9.0 mts	10.0
2	9.0 mts and less than 12.0 mts	21.0
3	12.0 mts. and less than 18.0 mts	25.0
4	18.0 mts and less than 36.0 mt	45.0
5	36.0 mts and above	70

## FSI - 4

### Land Uses – As Per DP Zoning Regulations

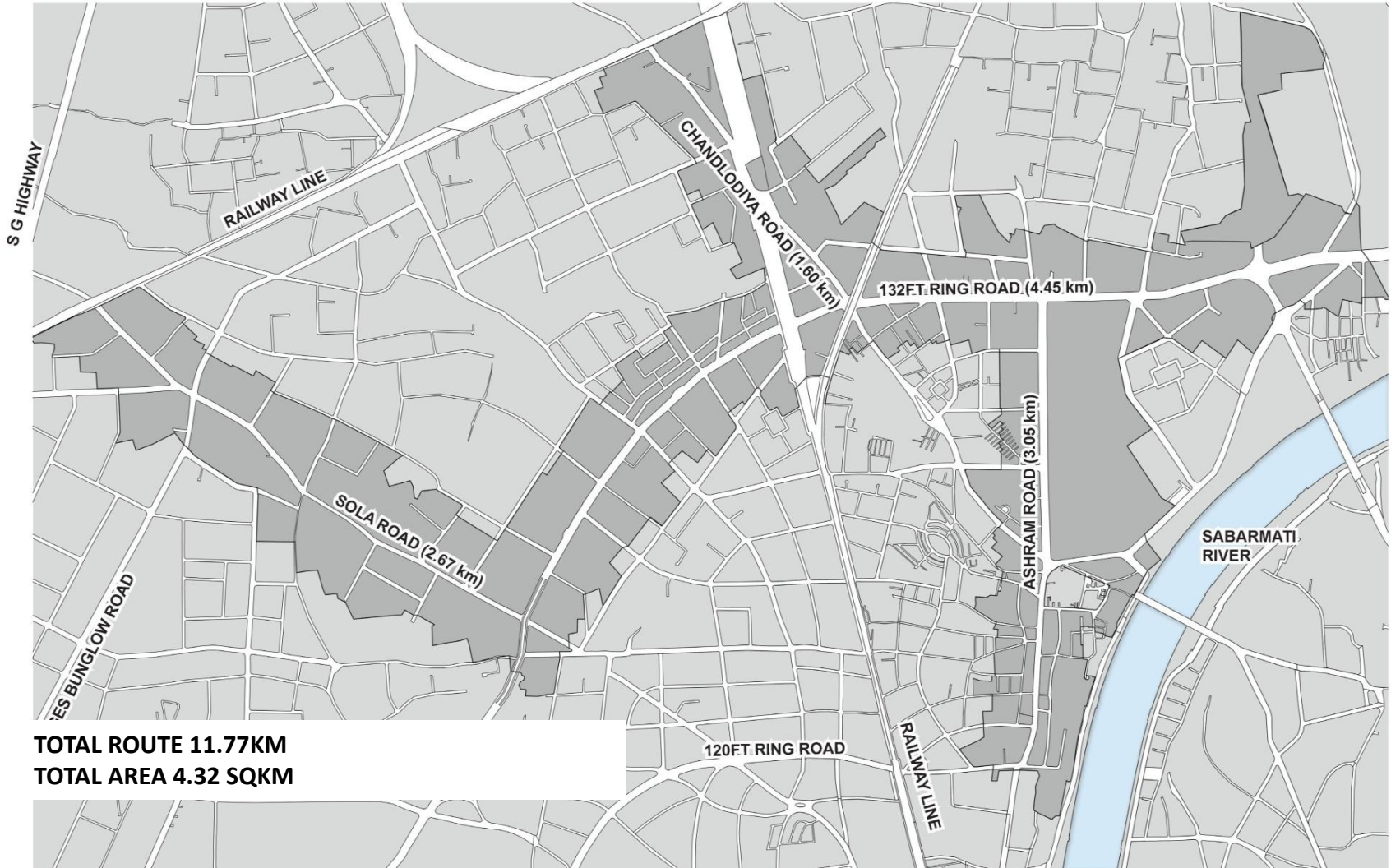
**NO LAND USE MIX PROPOSED (DELHI - 30% MINIMUM MANDATORY RESIDENTIAL)  
NO DWELLING SIZES SPECIFIED; DELHI HAS 50% UNIT SIZES 32-40SQM;50% UNIT SIZES  
62 SQM.**

**TPS PROVIDES LAND FOR EWS. ALSO DP PROPOSED AFFORDABLE HOUSING ZONE; NO  
PROPOSAL**

# Street related Interventions

- **Future ROW:** Land identified as public ROW and to be developed as and when property is redeveloped
- **Flexible ROW:** Public ROW that can be flexibly located by the property owner connecting predefined network links on either side
- **Pedestrian ROW:** Existing Private roads to be notified as Public ROW
- **Public Domain:** Part of the roadside margin identified in LAP to be kept as public domain used as foot path to be kept open for public use (FSI provide as compensation or monetary compensation is also provided)

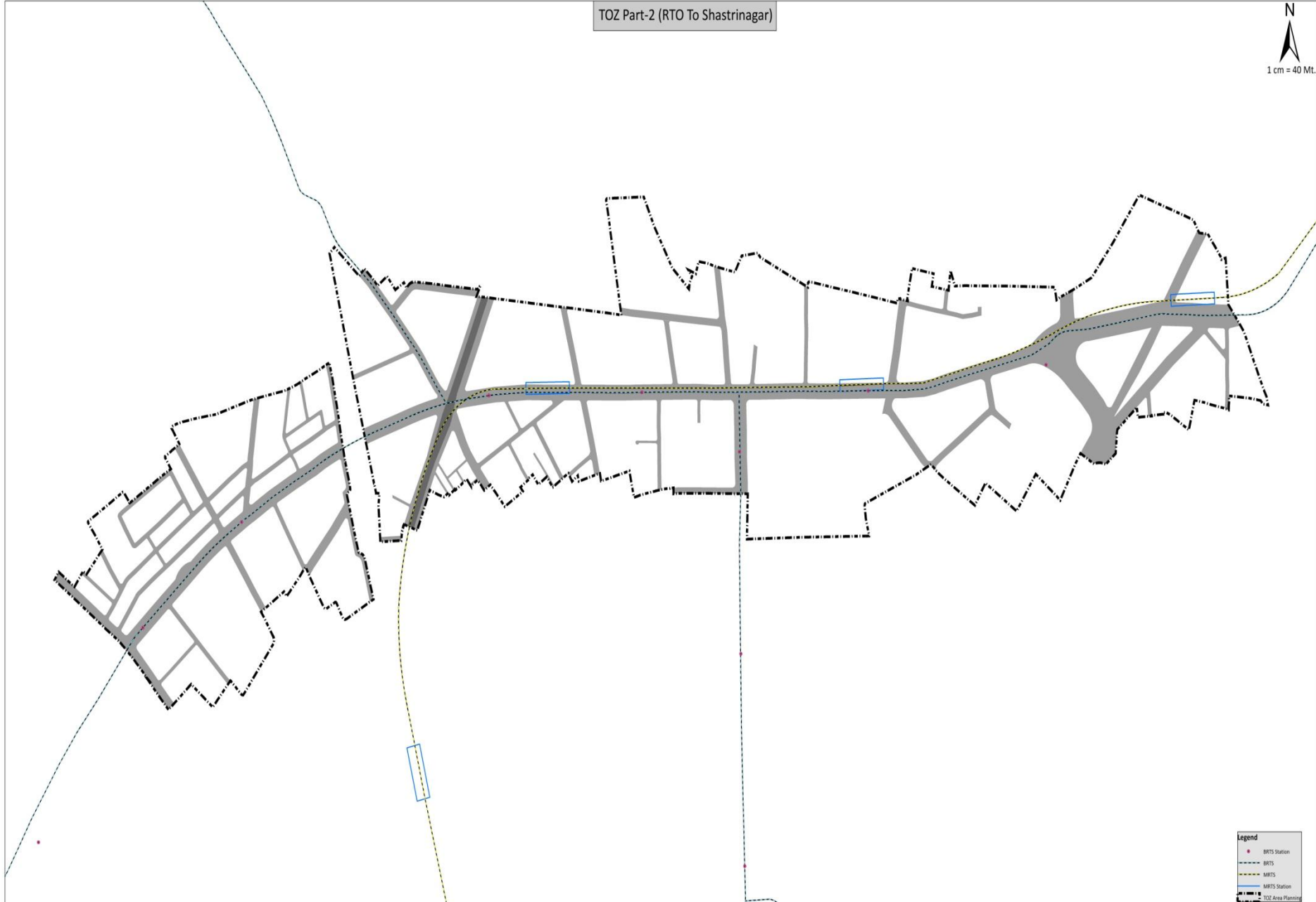
# Existing Street Network– TOZ Wadaj



# Existing notified road

TOZ Part-2 (RTO To Shastrinagar)

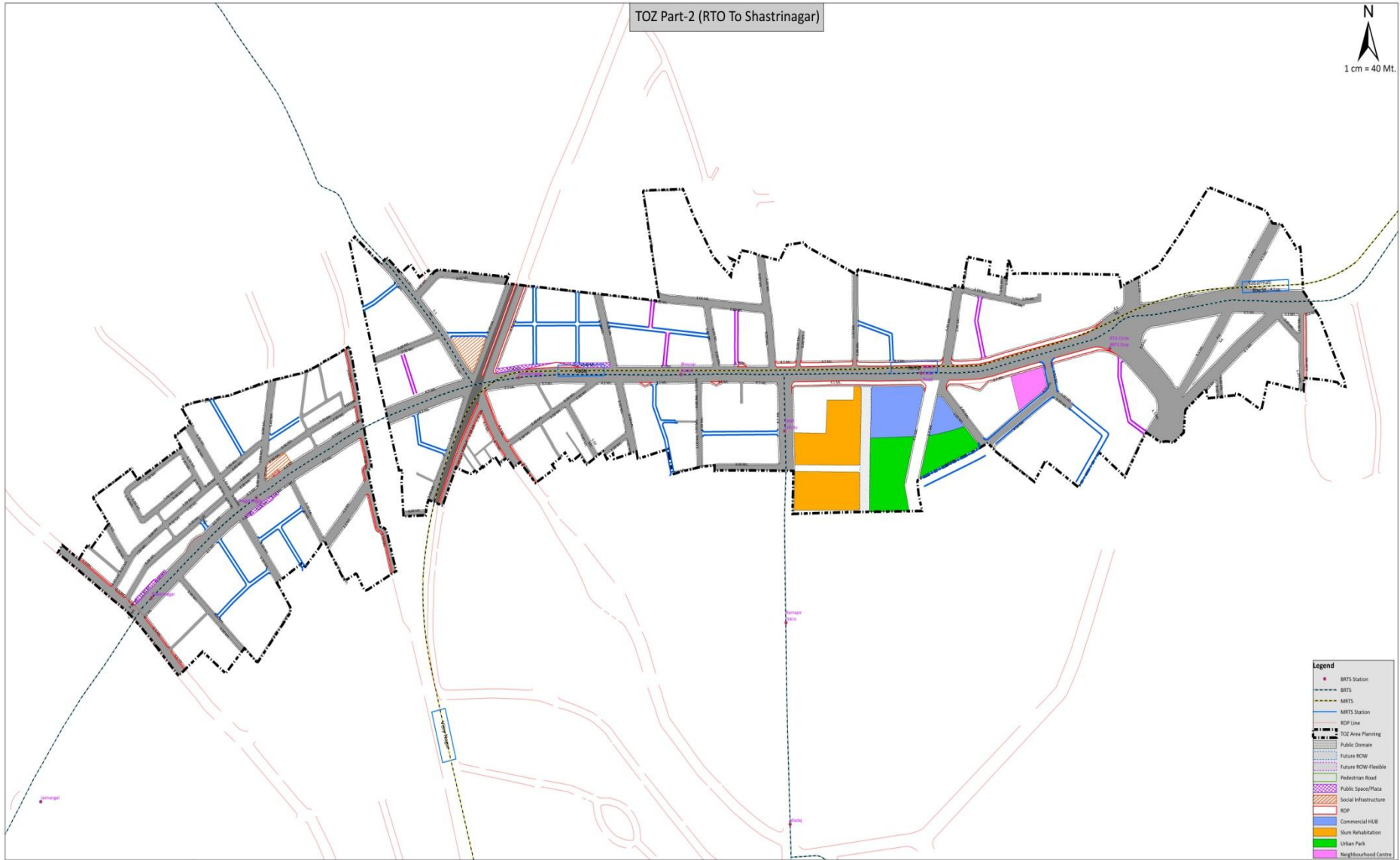
N  
1 cm = 40 Mt.



**Legend**

- MBRS Station
- BRIS
- MBRS
- MBRS Station
- TOZ Area Planning

# Proposed Network



# Street Hierarchy





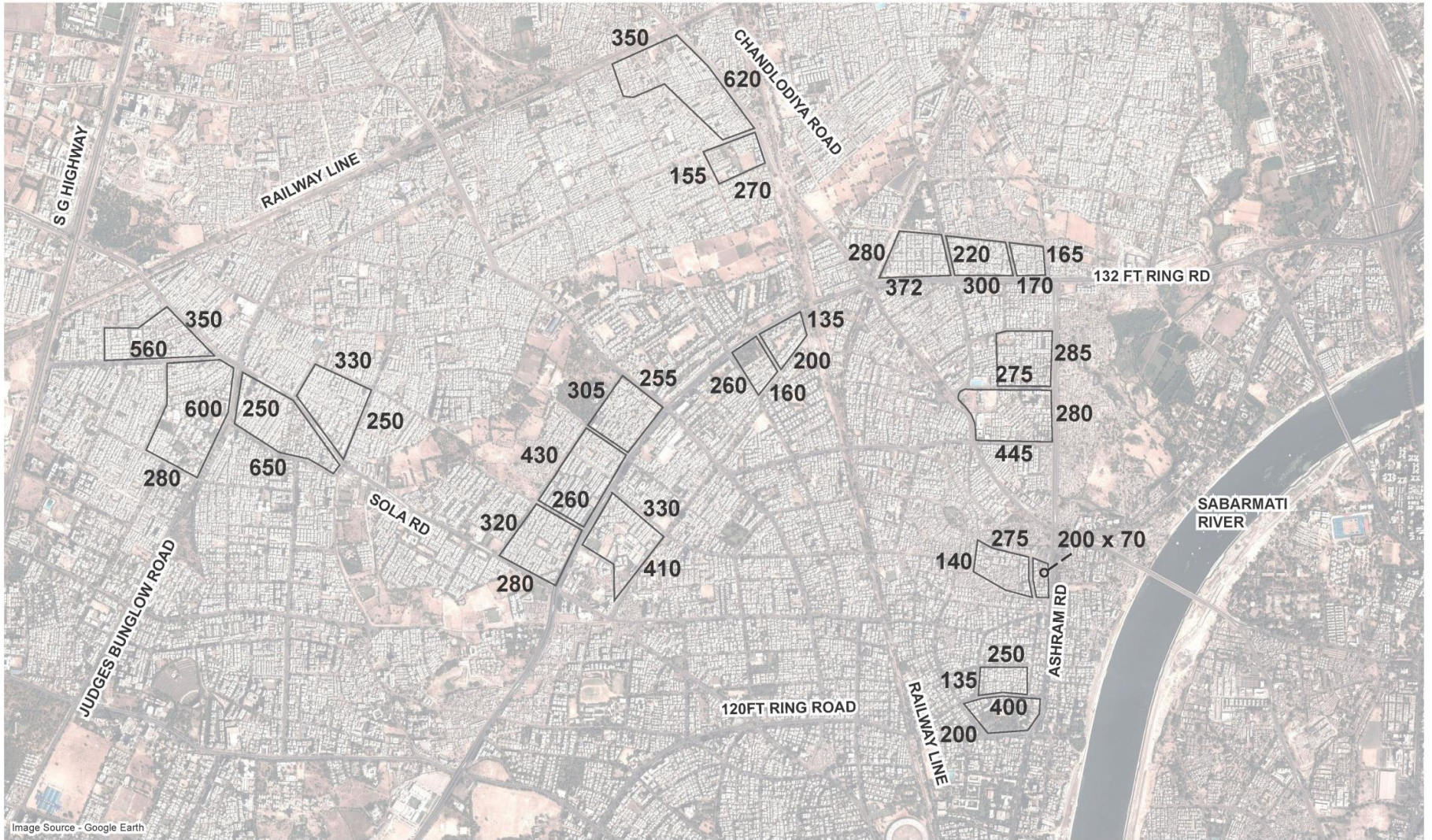
# Public Domain - Margins



# Public Domain - Margins

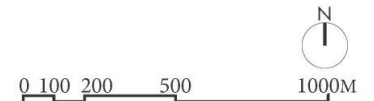


# Block Sizes -Proposed

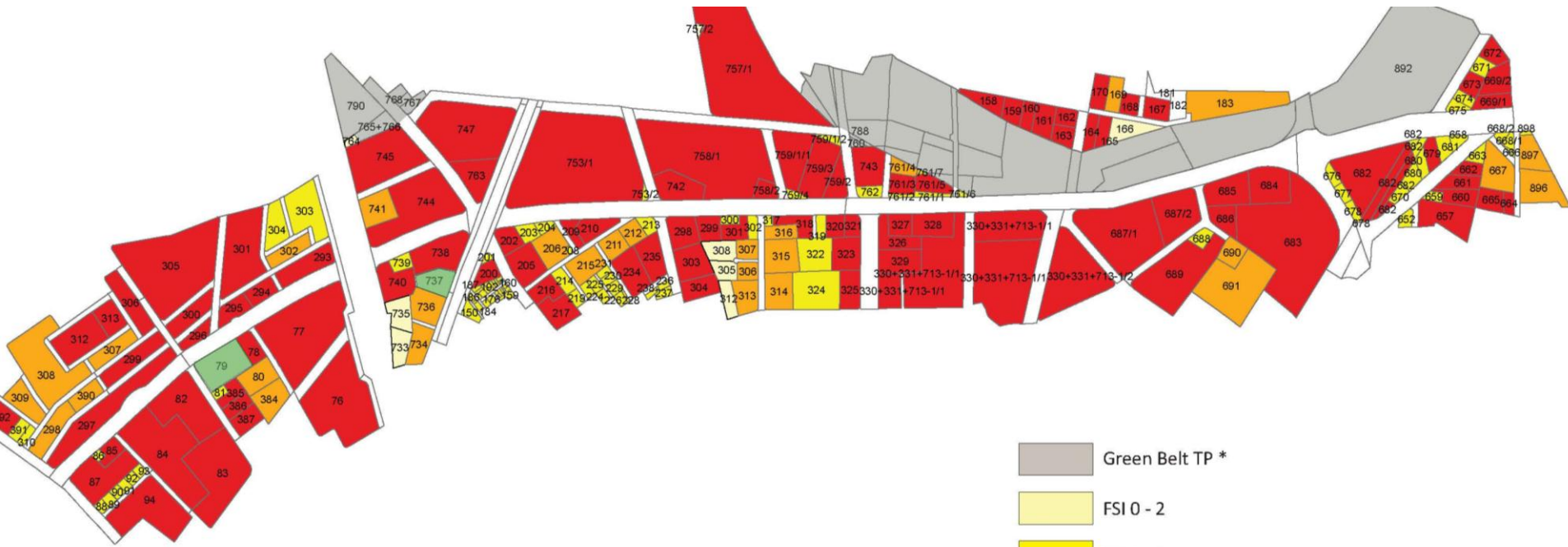


**BLOCK SIZES : 165 x 170 to 350 x 620**  
**AVG BLOCK SIZE : 250 x 350**  
**NUMBER OF BLOCKS : 116**

DIMENSIONS ARE IN METERS



# Resource mobilization



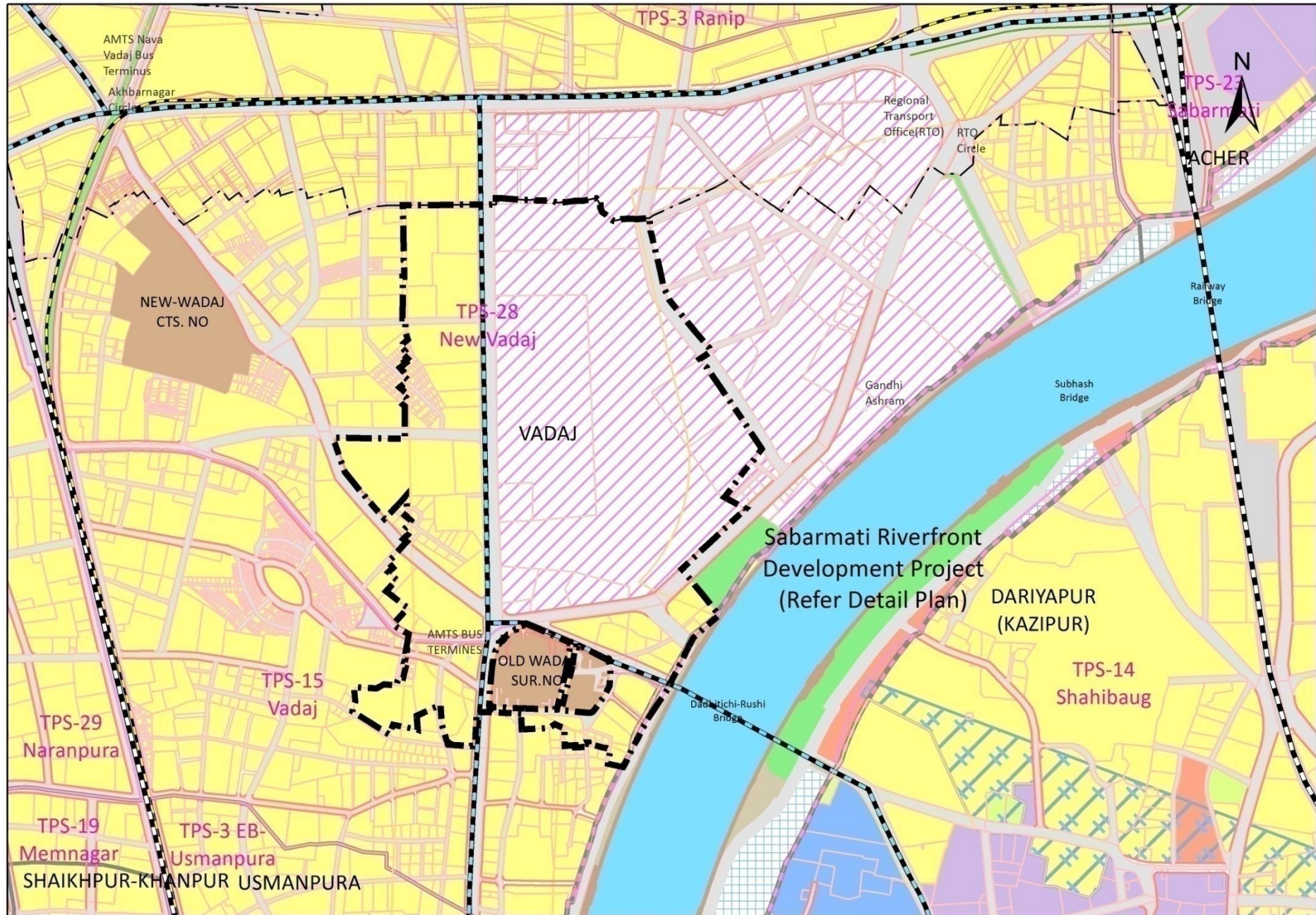
Average FSI 3.2

**Number of Cases using 4 FSI – 125**  
**Amount received by sale of FSI – 365 Crores**  
**AMC collects the FSI Charge.**  
**To be shared with: AUDA, MEGA, Narmada**

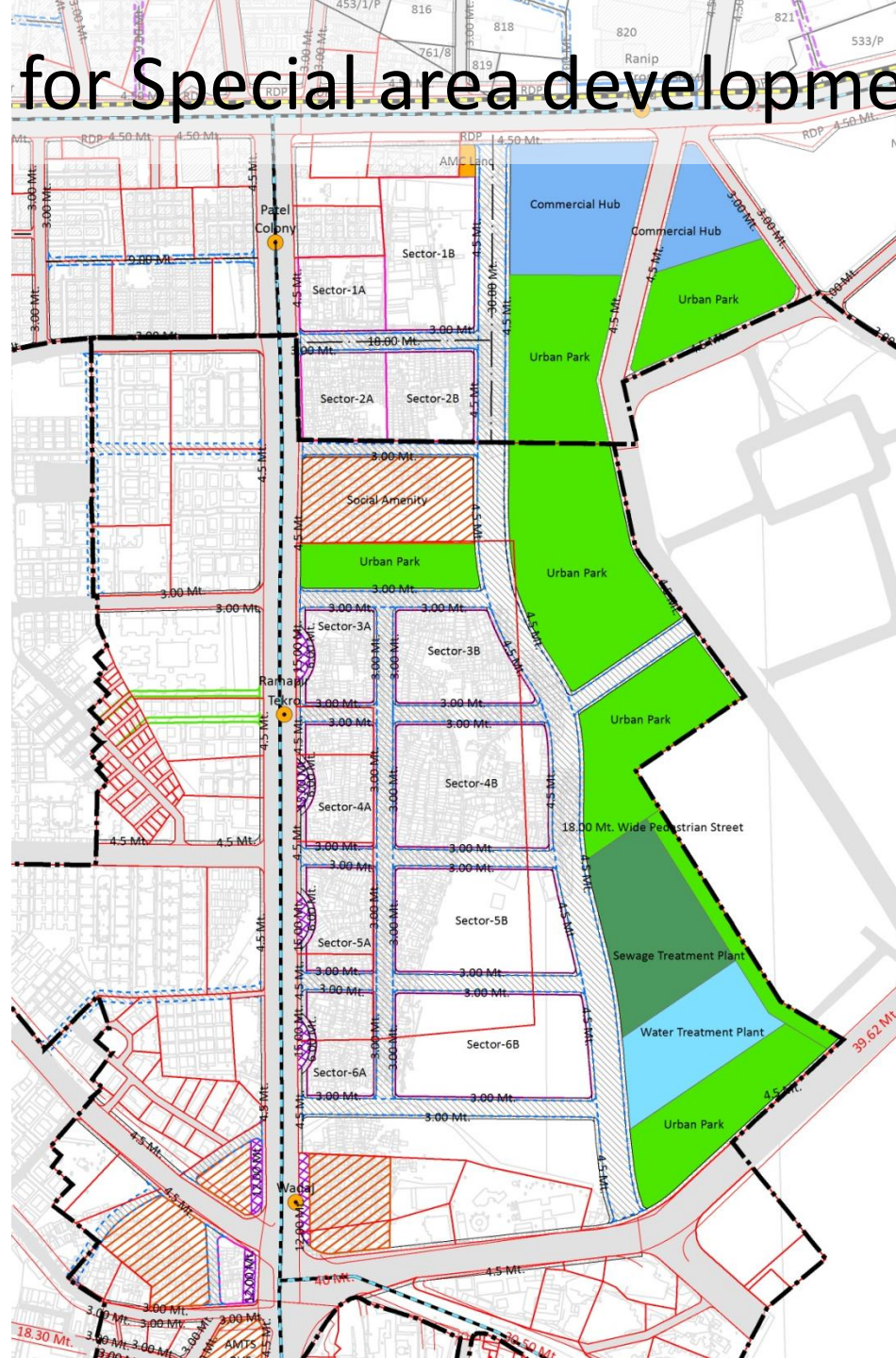
- Green Belt TP \*
- FSI 0 - 2
- FSI 2 - 3
- FSI 3-4
- FSI 4
- AUDA garden

\* For Green belt TP areas, the average net FSI achieved of 3.80 in rest of the area has been considered.

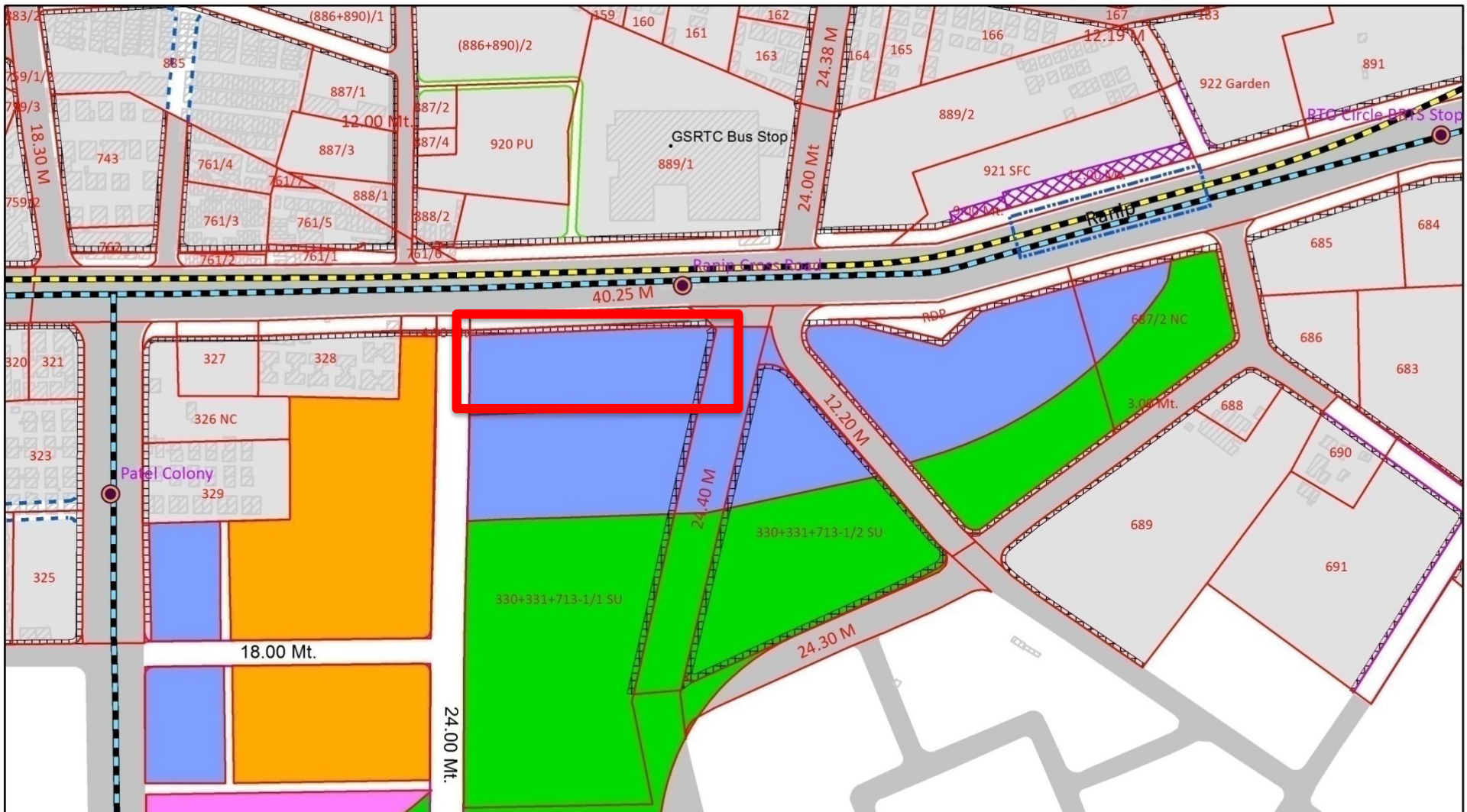
# Proposal for Special area development - Wadaj



# Proposal for Special area development - Wadaj



# Proposed Inter Model Hub



# Existing BRTS Station

# BEFORE



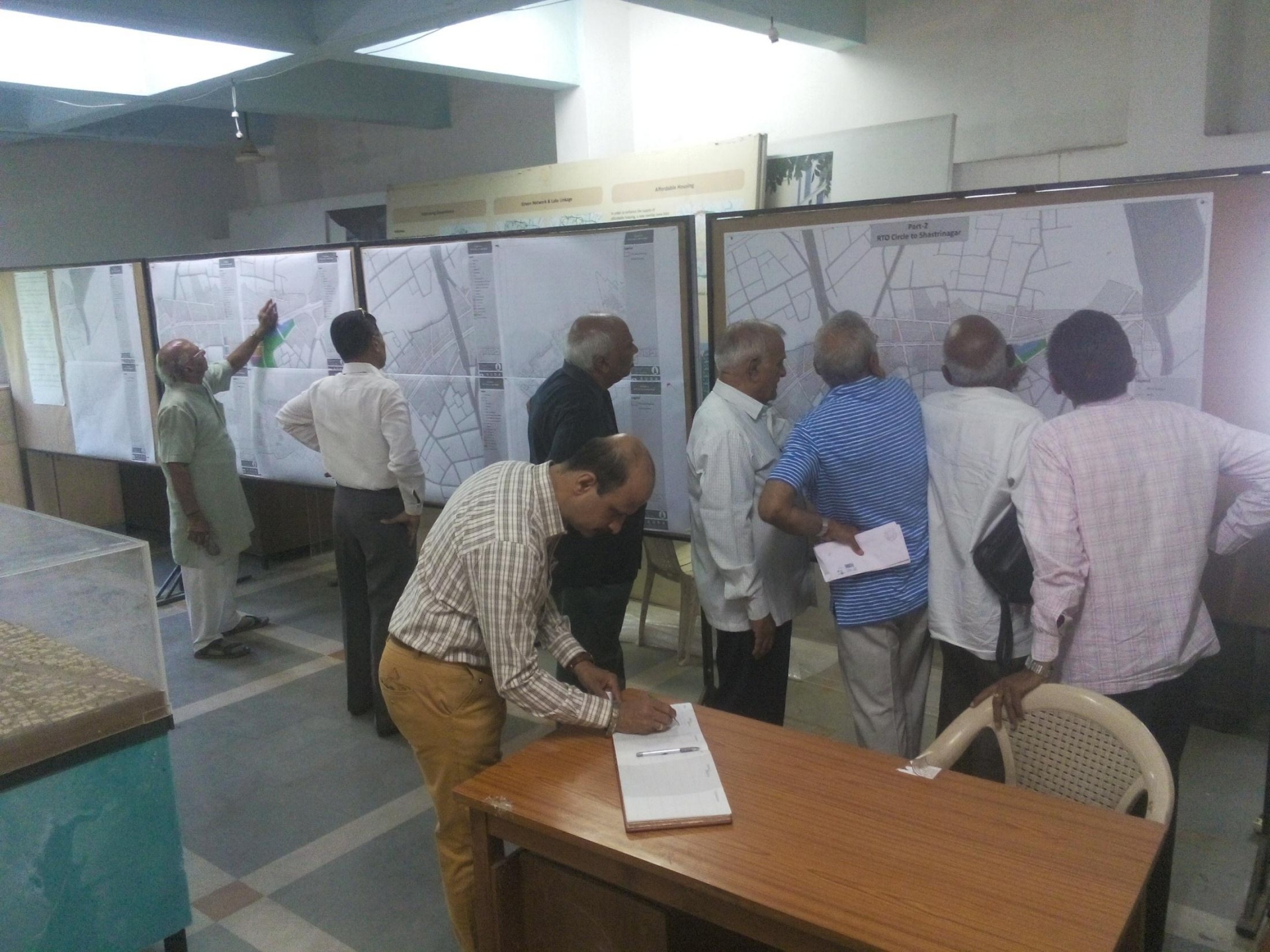


# Propose Plaza at BRTS Station

# AFTER



- Commercial (Offices)
- Terrace (Outdoor dining, etc.)
- Public Plaza
- Cycle Lane
- Carriage Way
- BRTS Station
- Bike Share
- Planter Zone
- OnStreet Parking
- Pedestrian Zone
- Public Plaza (Outdoor dining, etc.)
- Terrace Garden



Part-2  
RTD Circle to Shastrinagar

Open Network & Linkage

Ahoribable Planning

Thank You!