

TRANSIT ORIENTED DEVELOPMENT

- A Process Oriented Approach

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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**

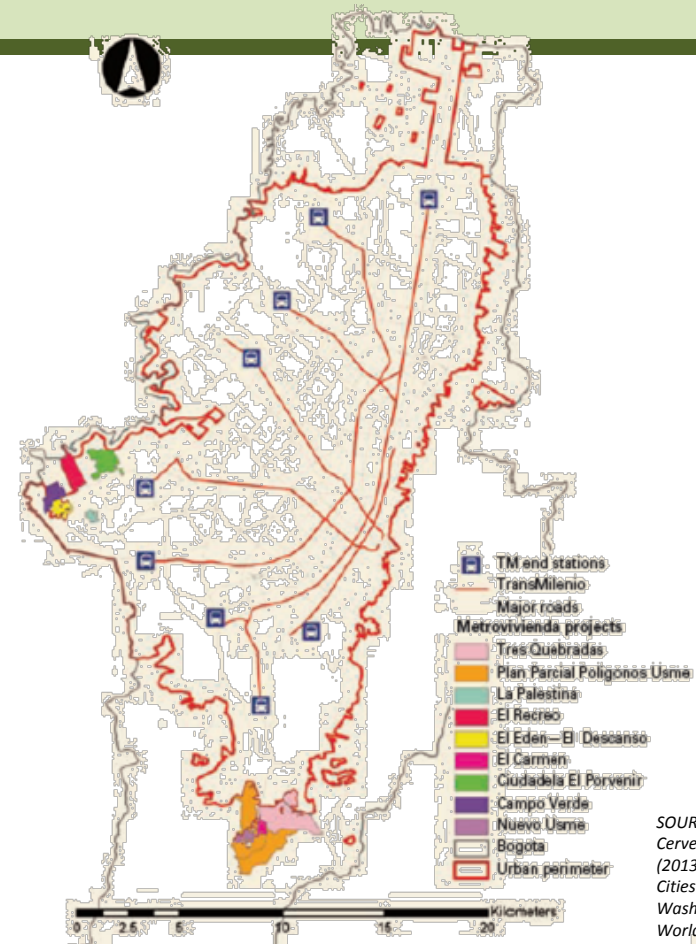
Factors supporting Bogota TOD

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.

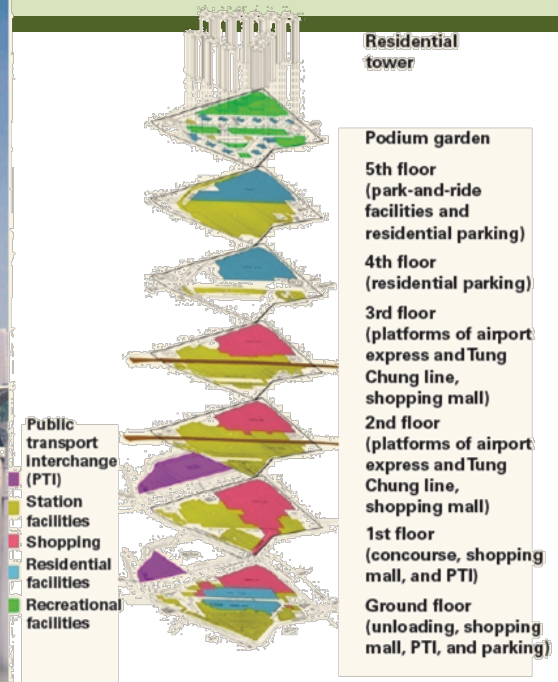


SOURCE: Suzuki, H., Cervero, R., & Luchi, K. (2013). *Transforming Cities with Transit*. Washington D.C.: The World Bank

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

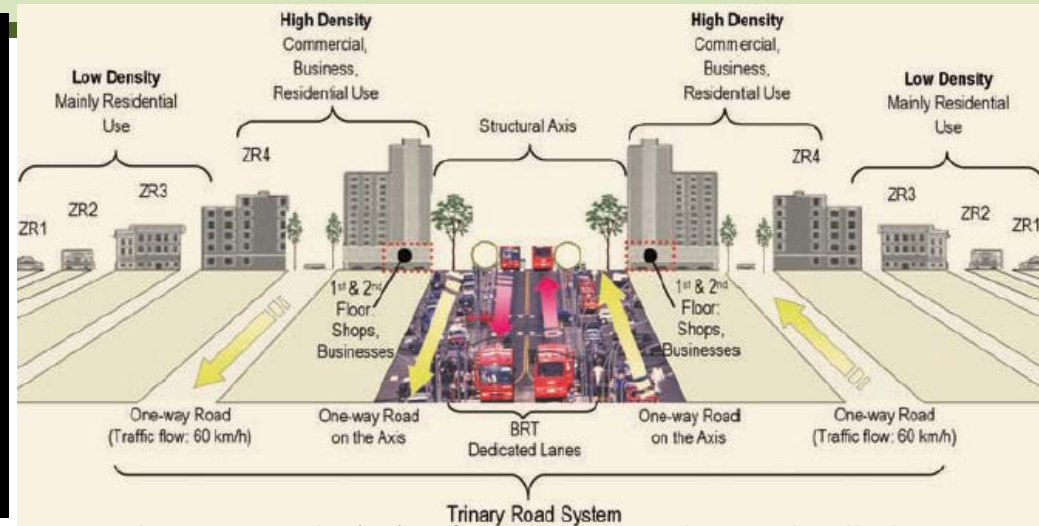
Curitiba, Brazil

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



Land Management

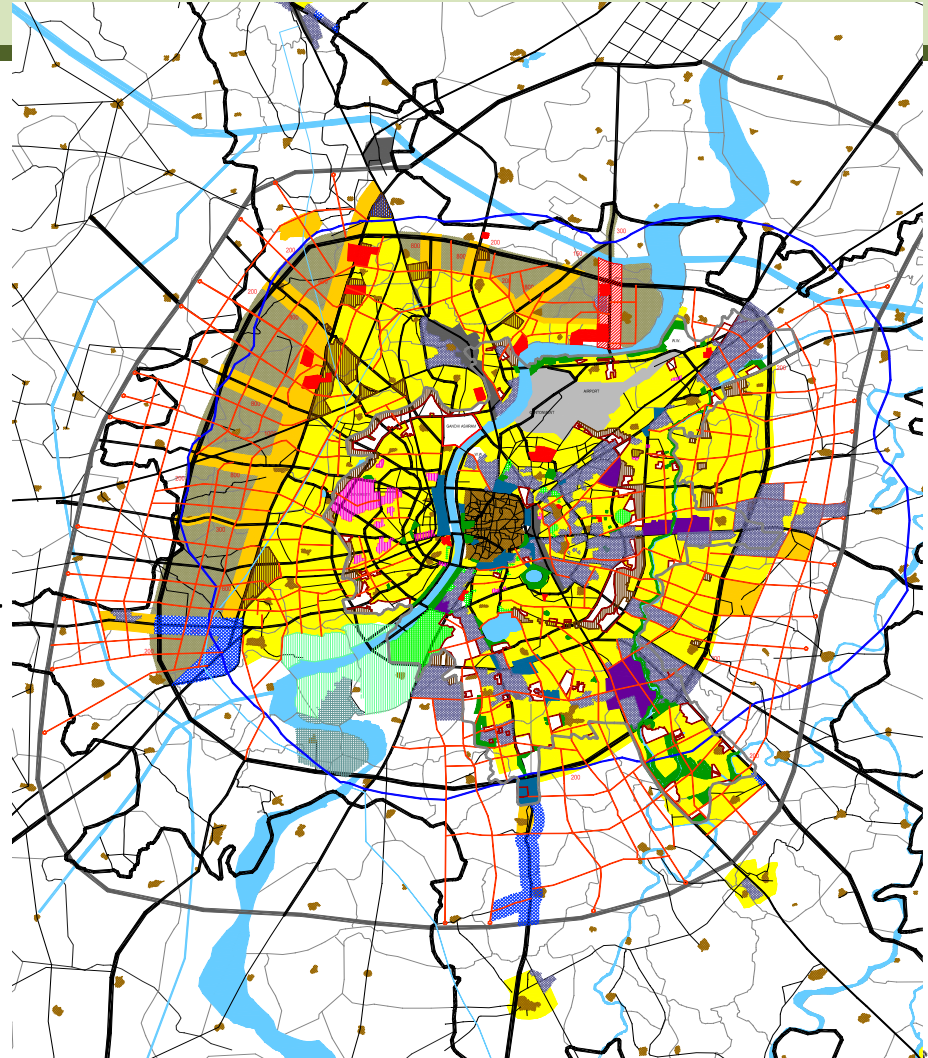
3 Stage Process Under the Gujarat Urban Development and Town Planning Act-1976

Development Plan

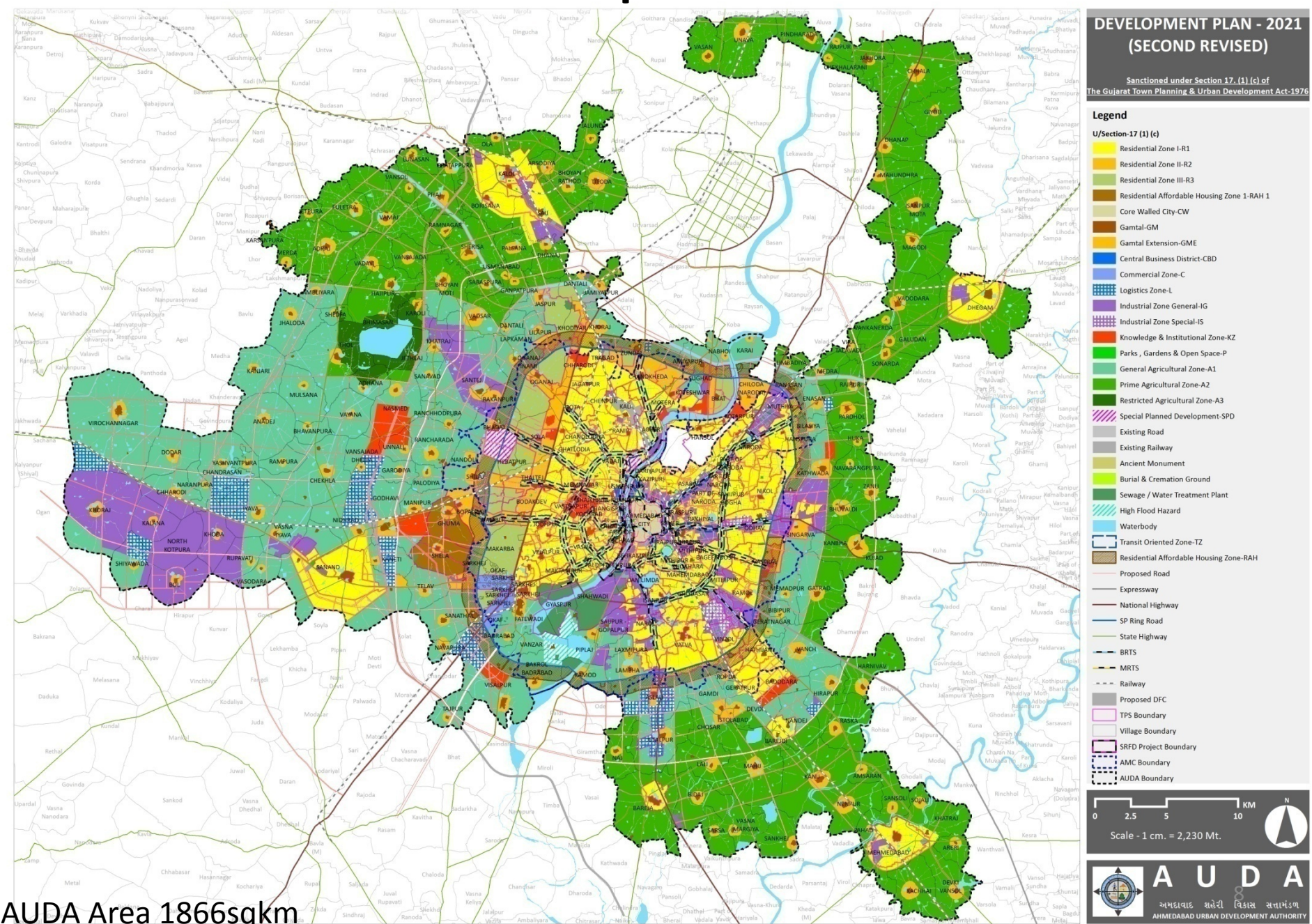
- **Provides Overall Development Framework**
 - Overall Direction of Urban Expansion
 - Landuse Zoning
 - City level road network
 - **Rapid Transit Network**
 - **Transit Ready Streets**
 - City Level Infrastructure (Utilities & Amenities)
 - Reservations of Land for other Public Purposes
 - Development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

Ahmedabad DP's

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

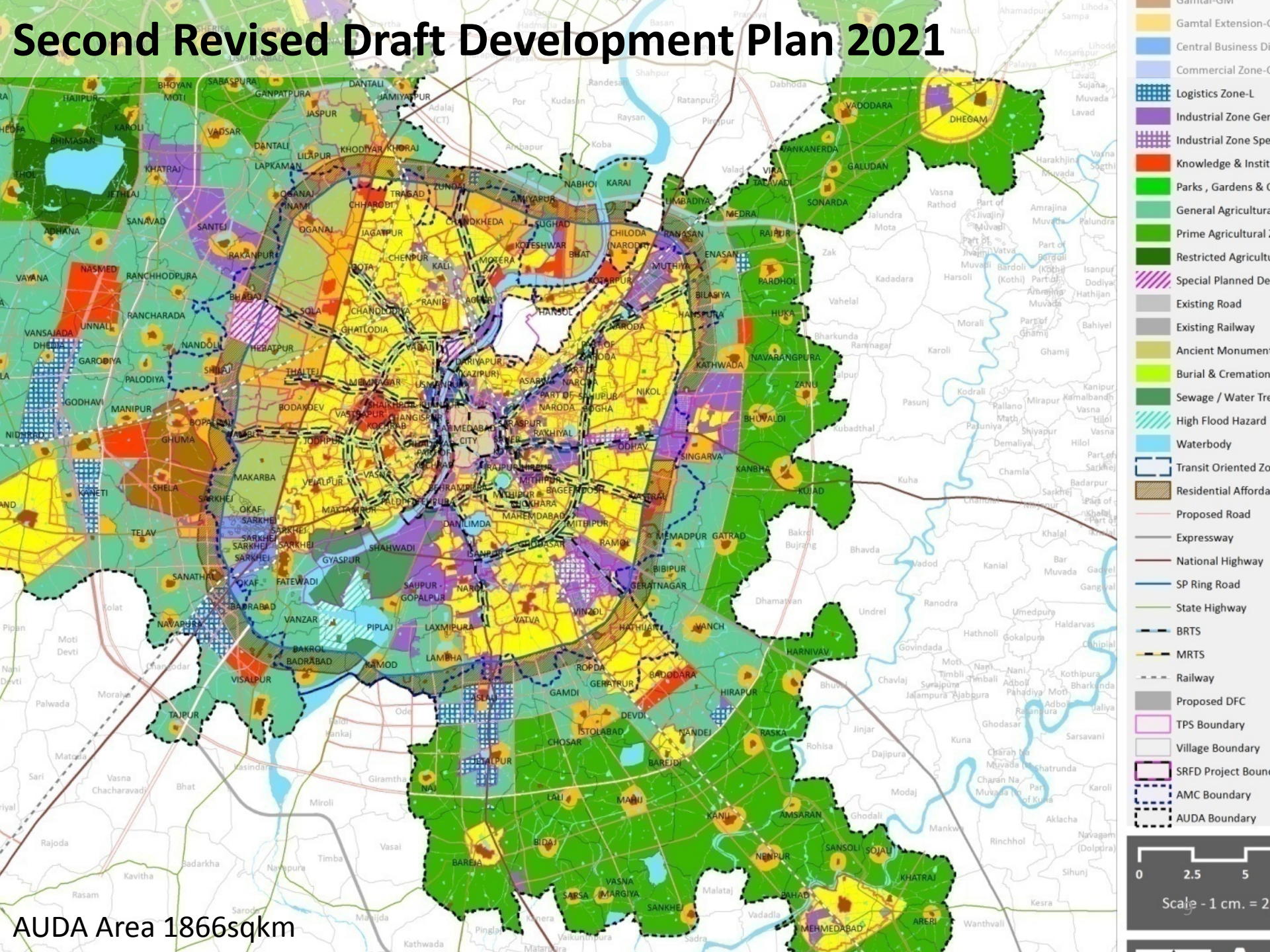


Second Revised Draft Development Plan 2021



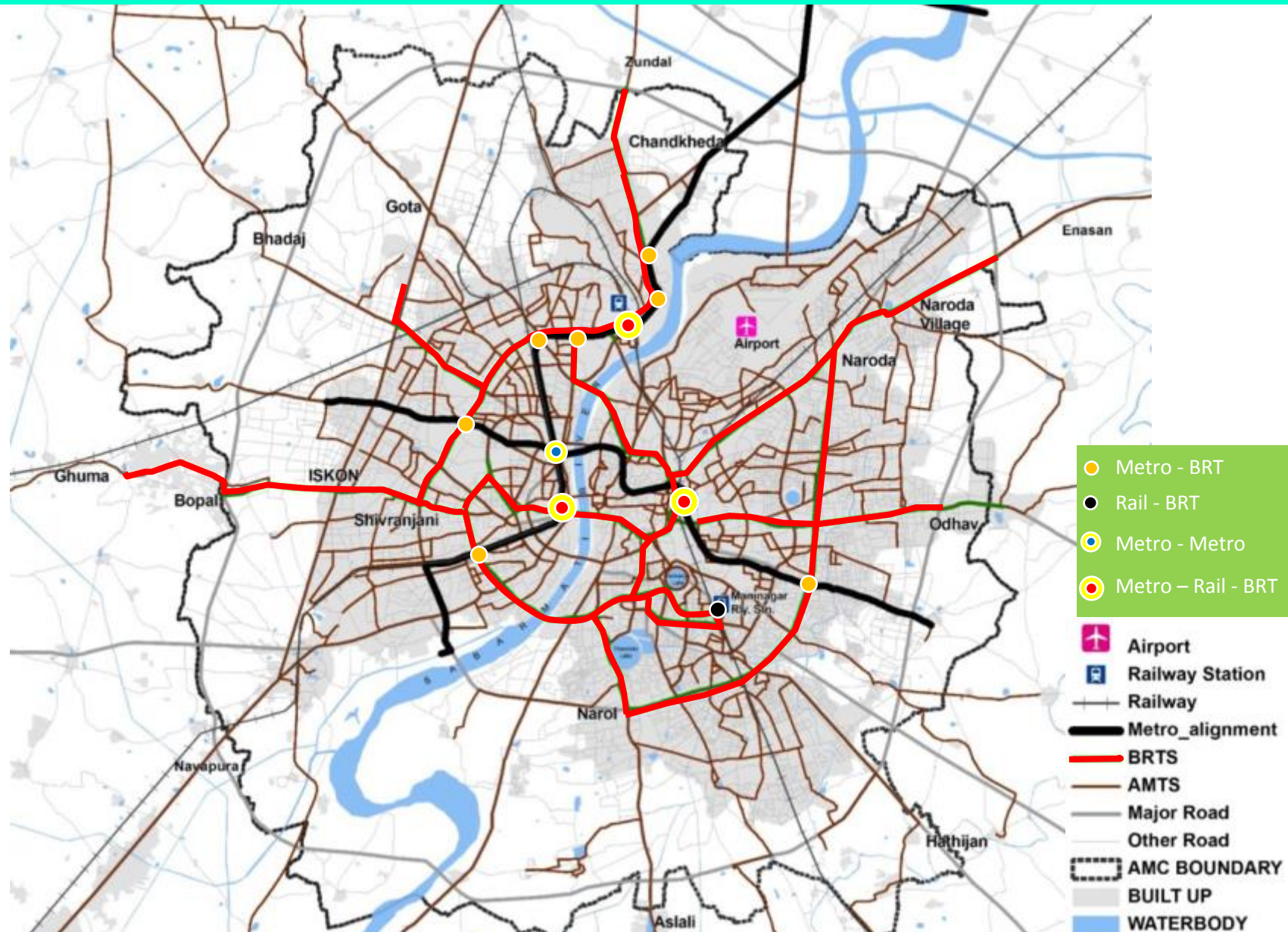
AUDA Area 1866sqkm

Second Revised Draft Development Plan 2021

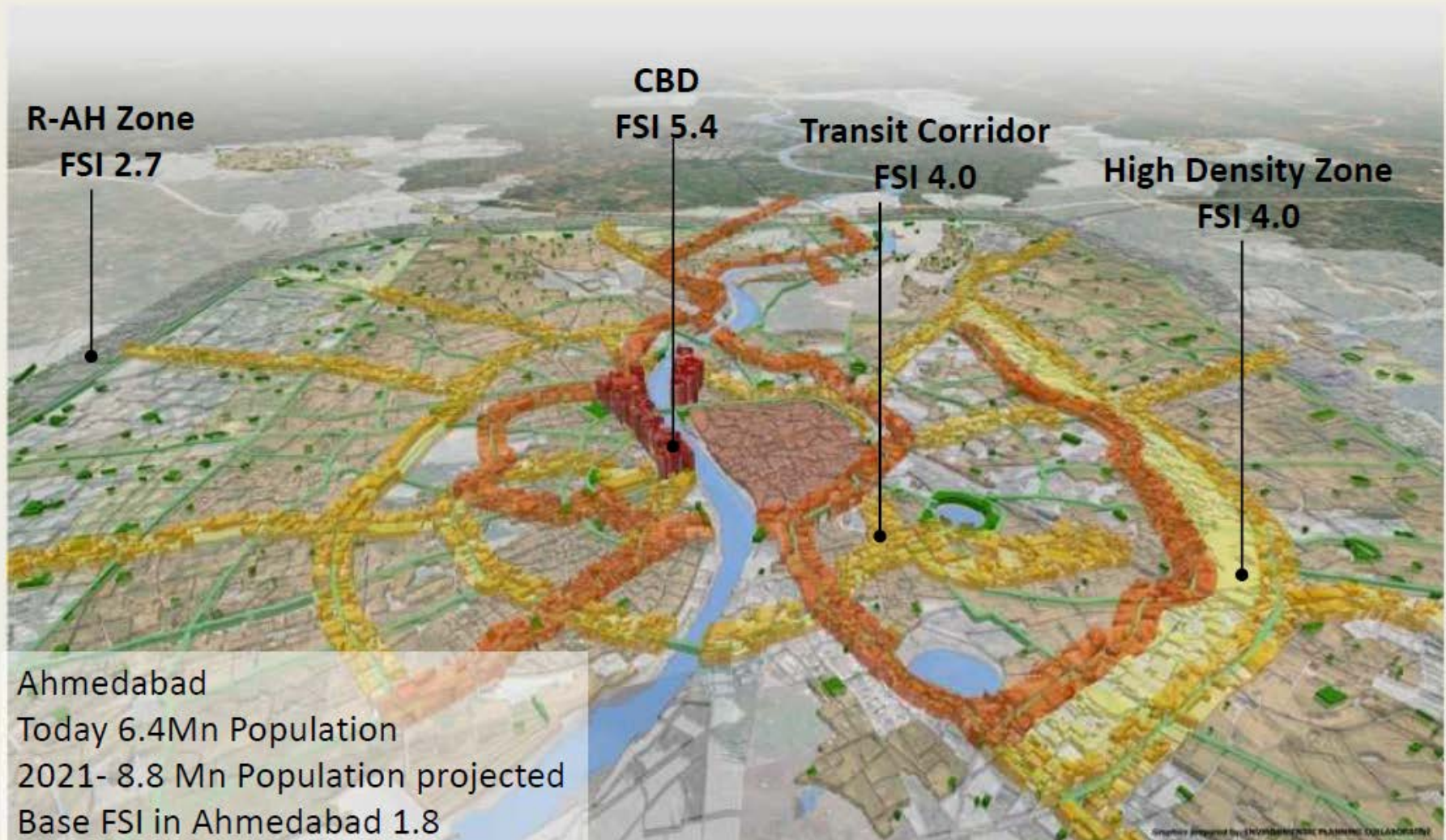


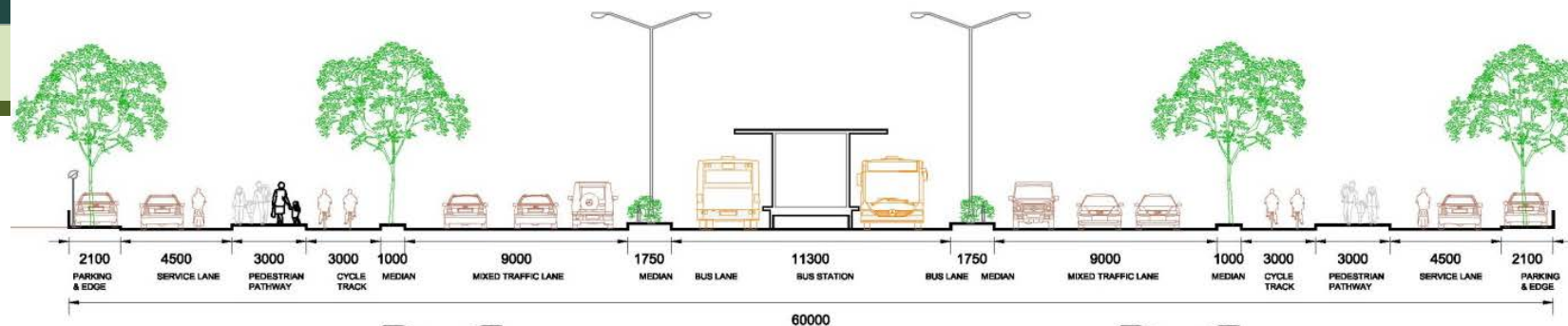
AUDA Area 1866sqkm

CMP – Public Transport Proposals

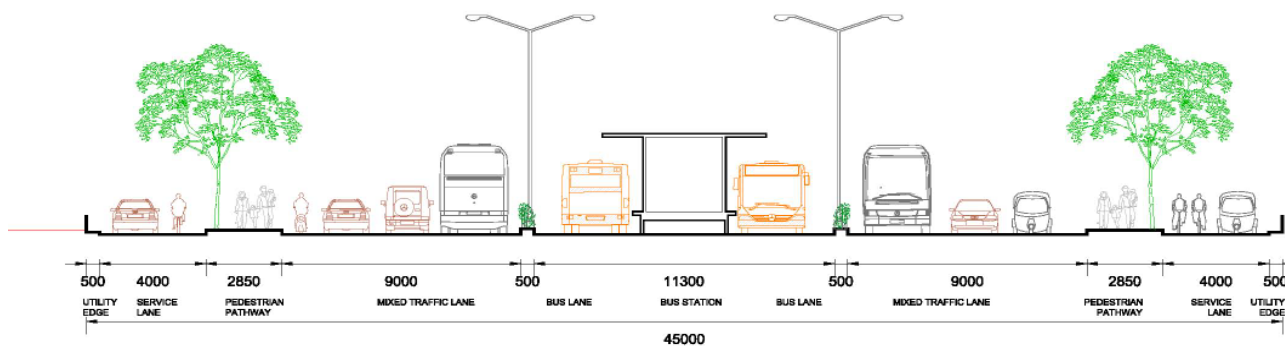


INTEGRATED LAND USE WITH MASS TRANSIT 2021

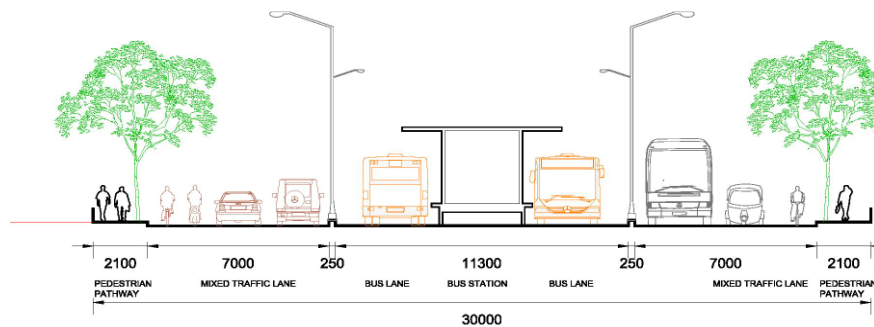




Arterials



Sub Arterial

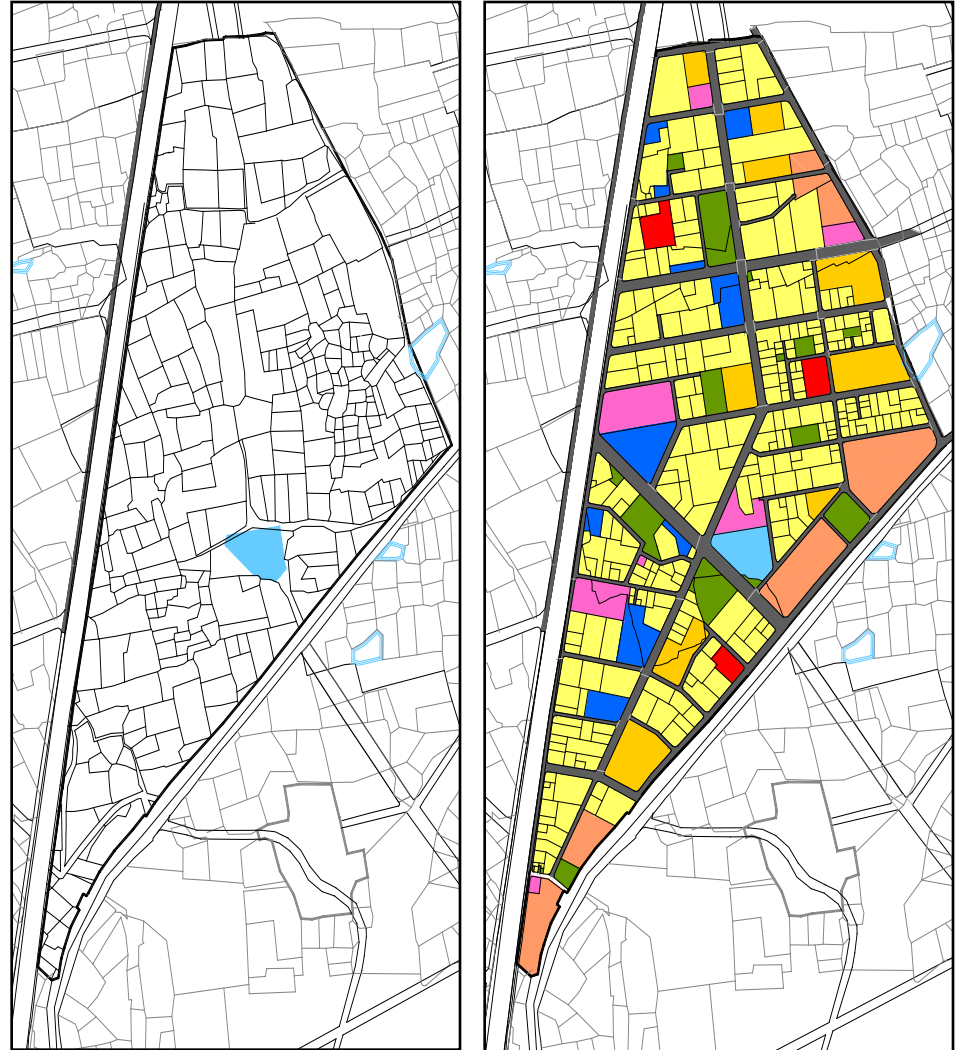


Land Management Process

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%)

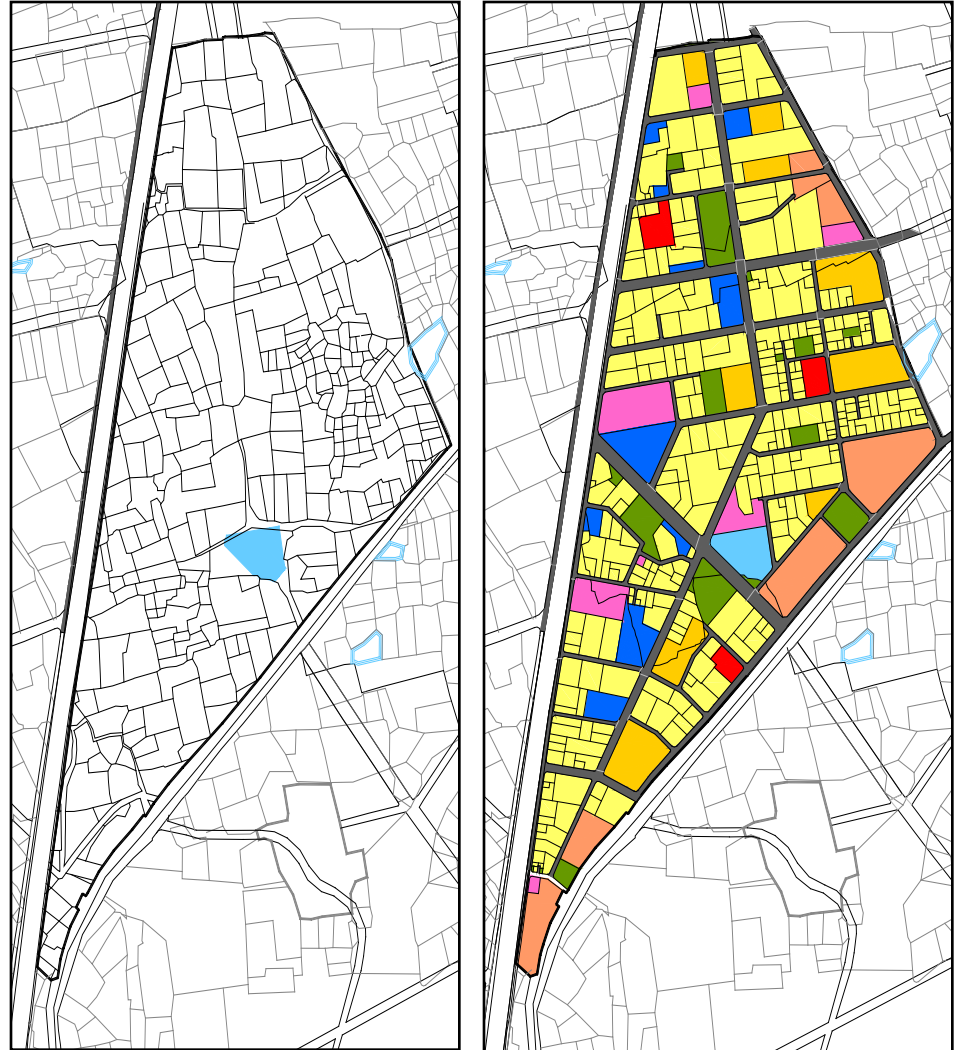


Town Planning Scheme

Under the Gujarat Urban Development and Town Planning Act-1976

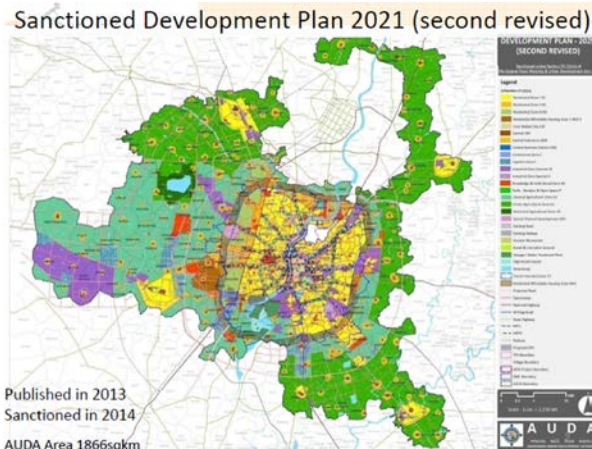
Land Area for Public Purposes

- 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%)*



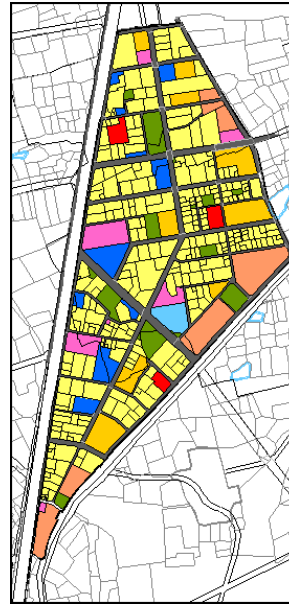
“Town Planning Schemes” to be read as “Town Planning Schemes or Local area Plans”

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



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

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



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

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

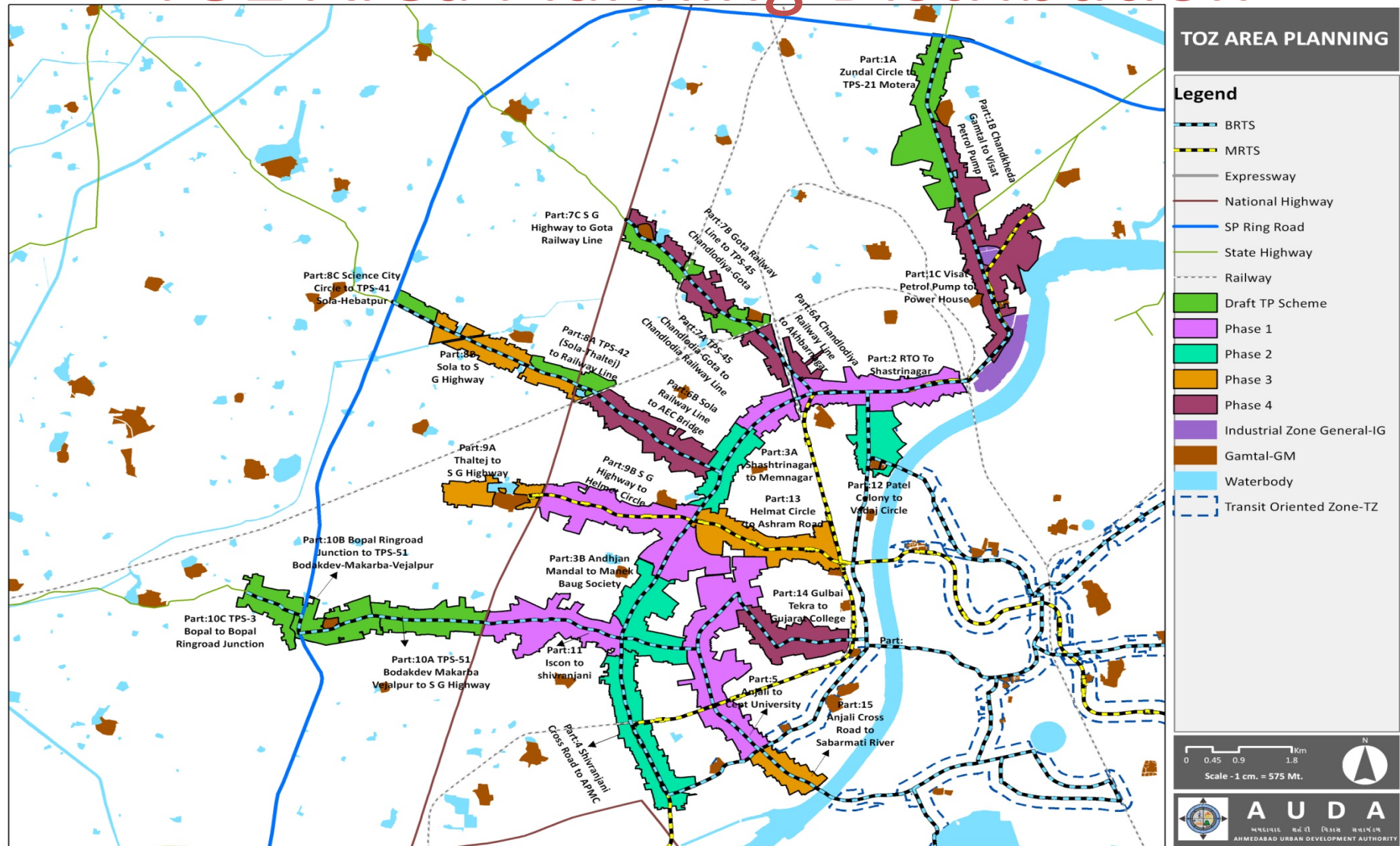


Detailed area level plan with urban
design interventions
Planning for TOZ
**Amendment in Gujarat Town Planning &
Urban Development Act, 1976**
-Local Area Plan

200mt Buffer Along BRTS and MRTS corridor- FSI 4.0



TOZ Area Planning Distribution





CODATU 2017

| 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

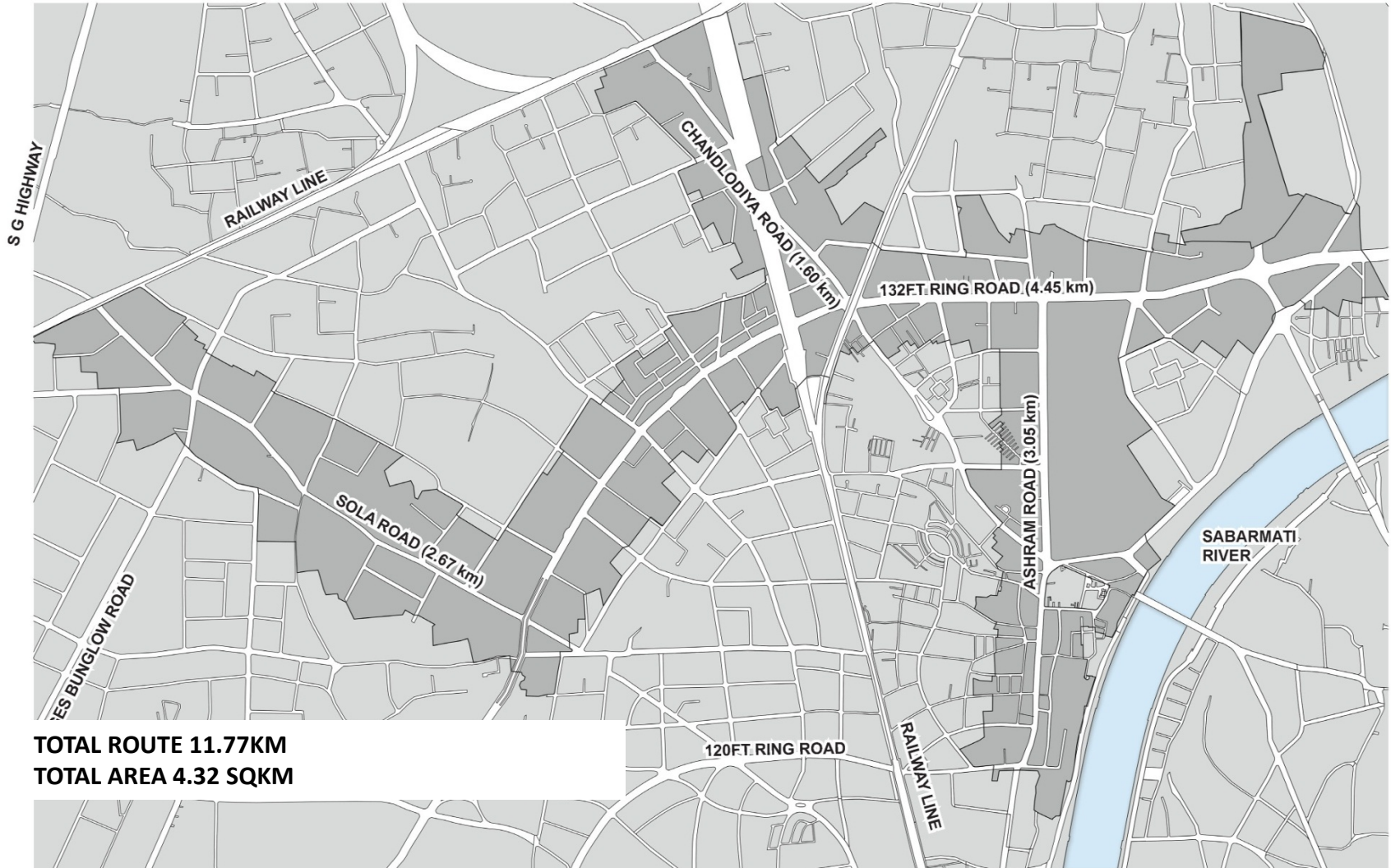


Street related Interventions

- **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)



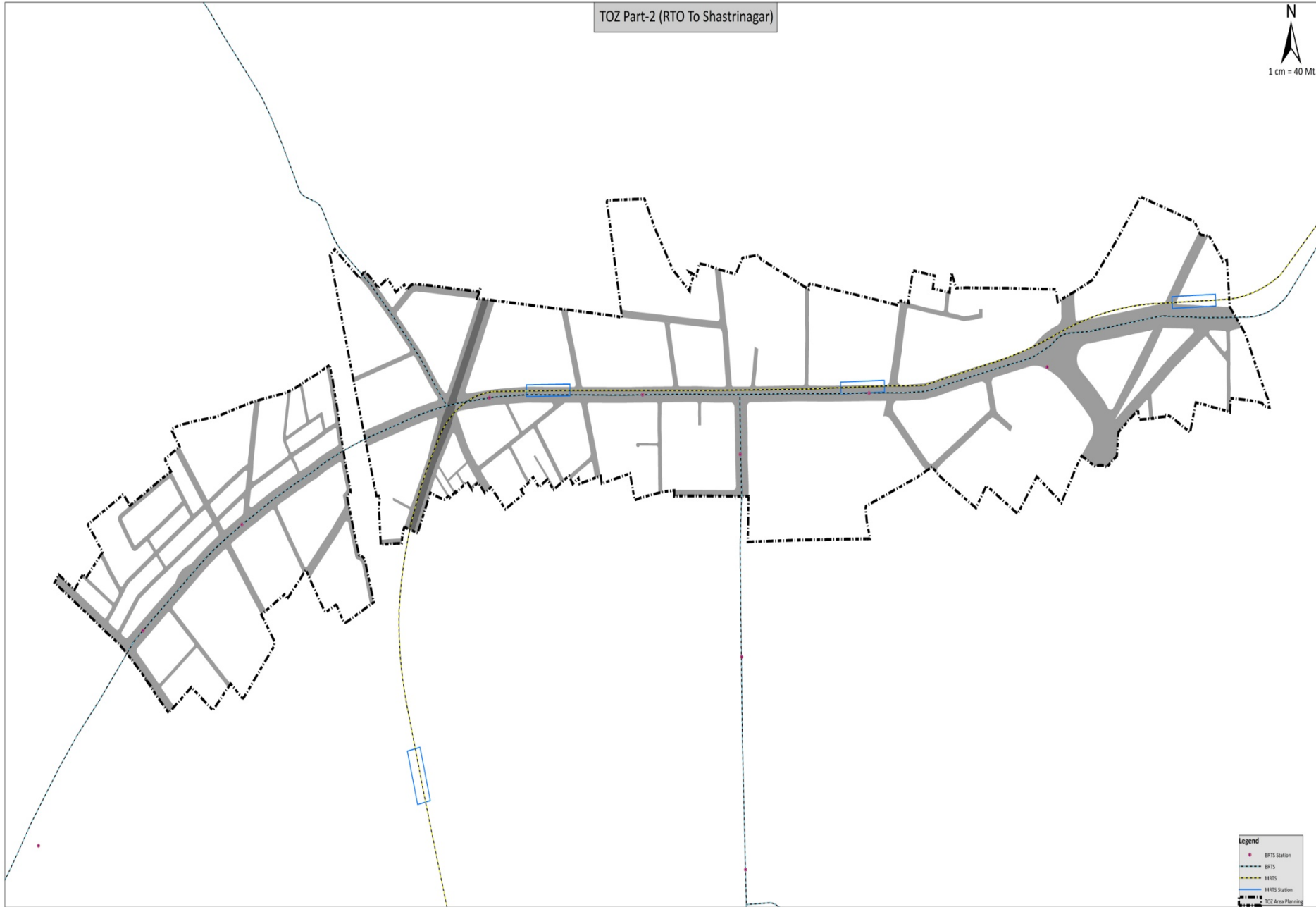
Existing Street Network– TOZ Wadaj



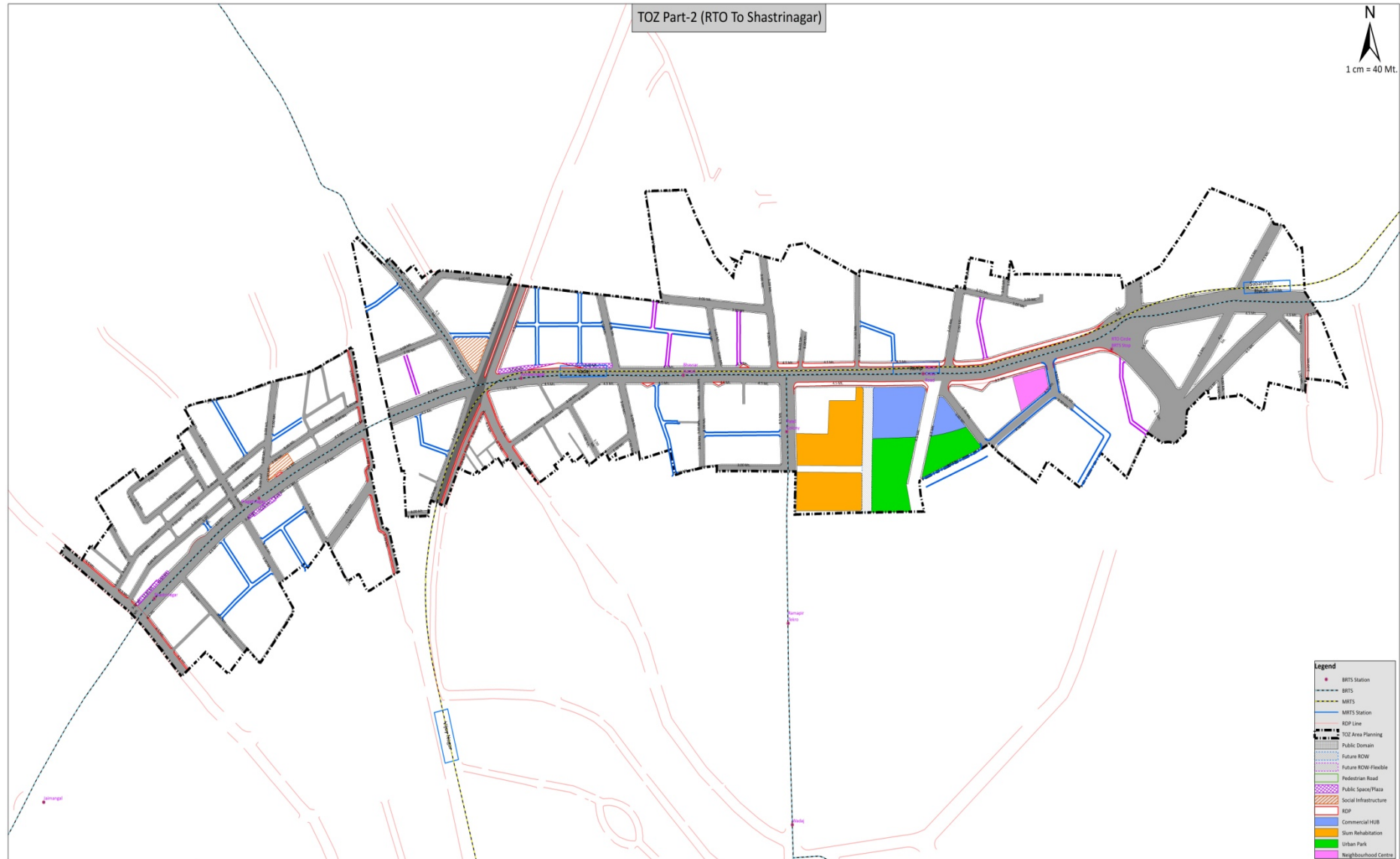
Existing notified road

TOZ Part-2 (RTO To Shastrinagar)

N
1 cm = 40 Mt.



Proposed Network



Street Hierarchy



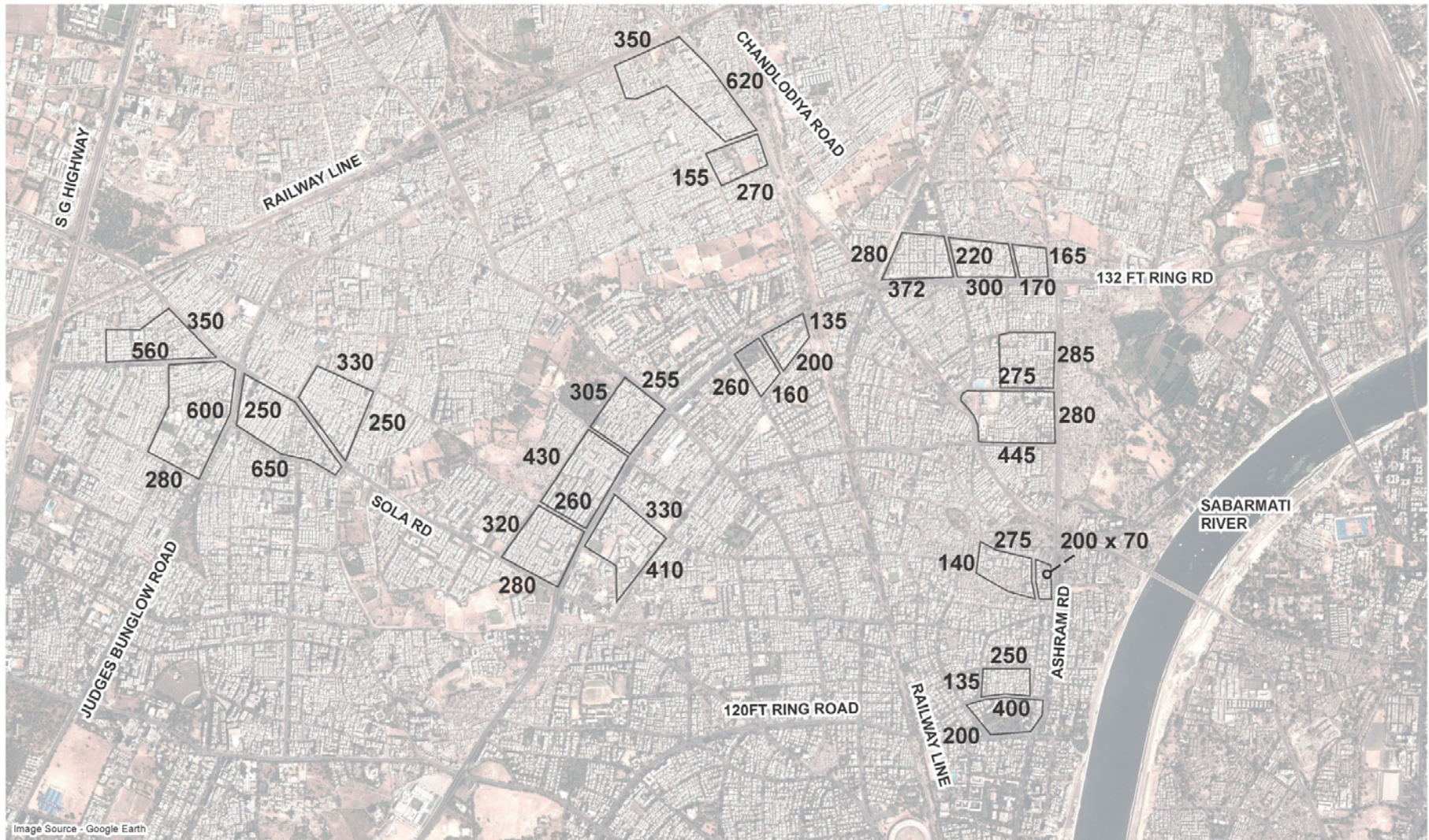
Public Domain - Margins



Public Domain - Margins



Block Sizes -Proposed

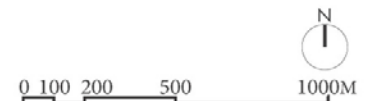


BLOCK SIZES : 165 x 170 to 350 x 620

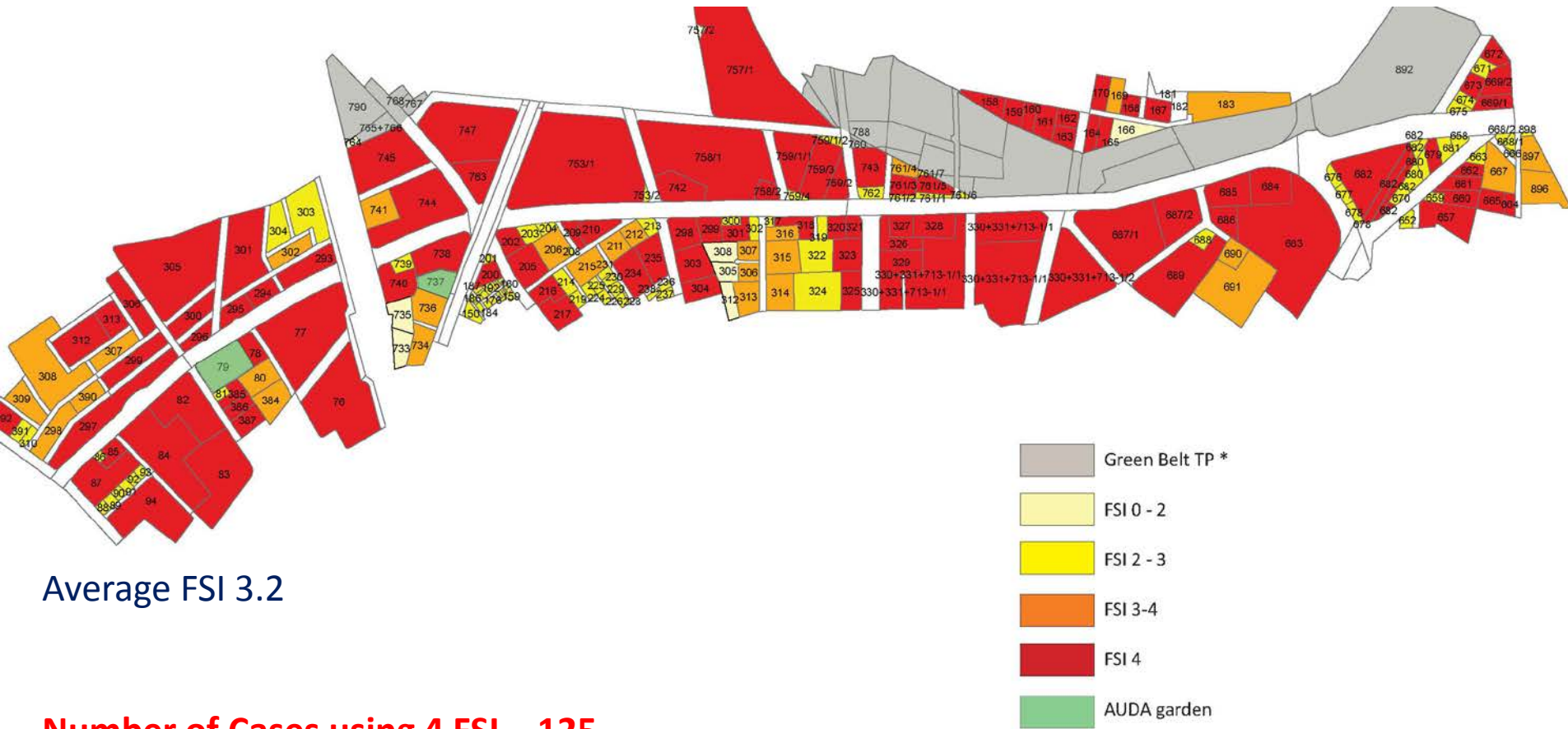
AVG BLOCK SIZE : 250 x 350

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

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



Existing BRTS Station

BEFORE



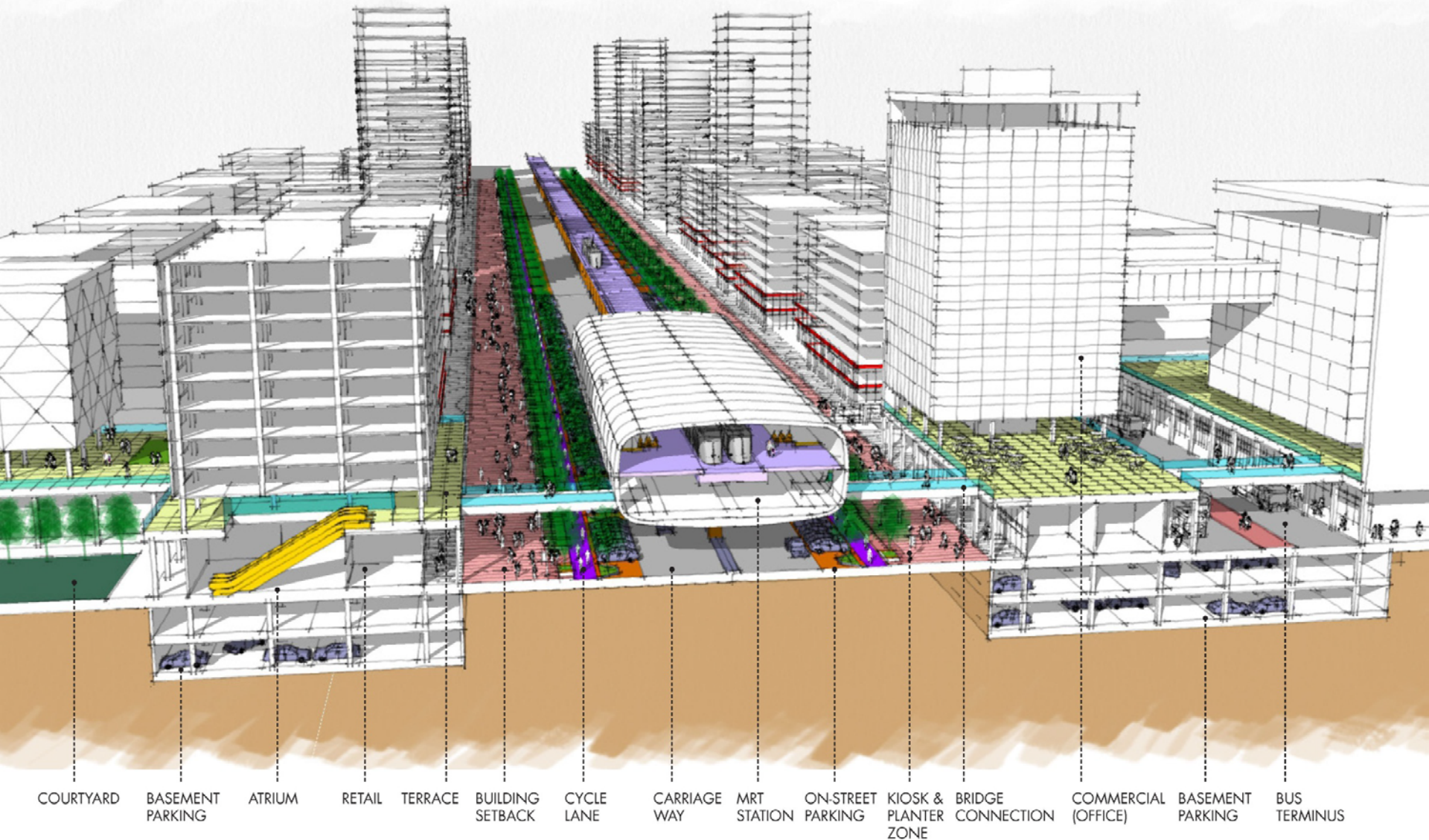
Propose Plaza at BRTS Station

AFTER

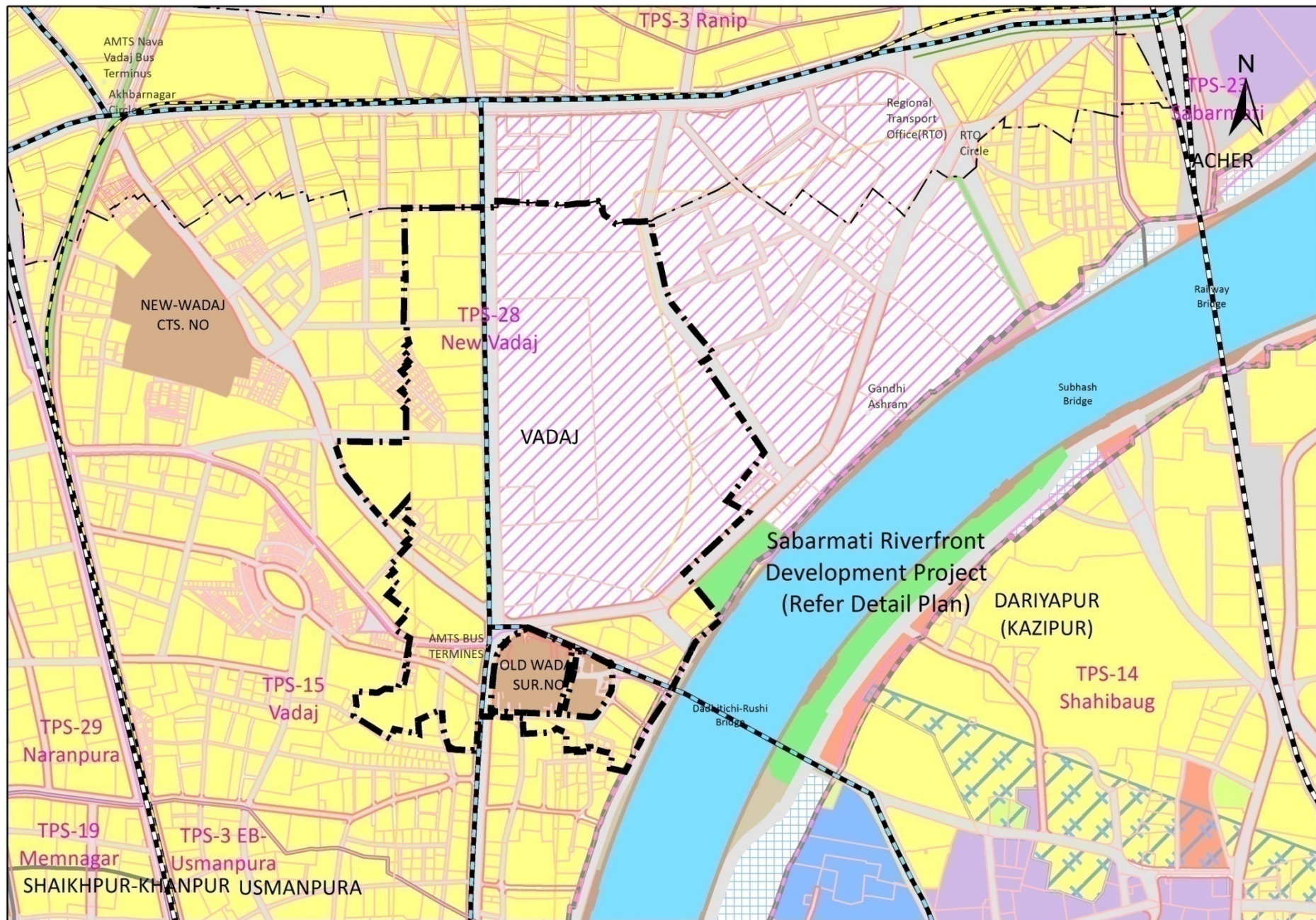


- Commercial (Offices)
- Terrace (Outdoor dining, etc.)
- Public Plaza
- Cycle Lane
- Carriage Way
- BRTS Station
- Bike Share
- Planter Zone
- OnStreet Parking
- Pedestrian Zone
- Public Plaza (Outdoor dining, etc)
- Terrace Garden

Propose Schematic View Near MRT Station

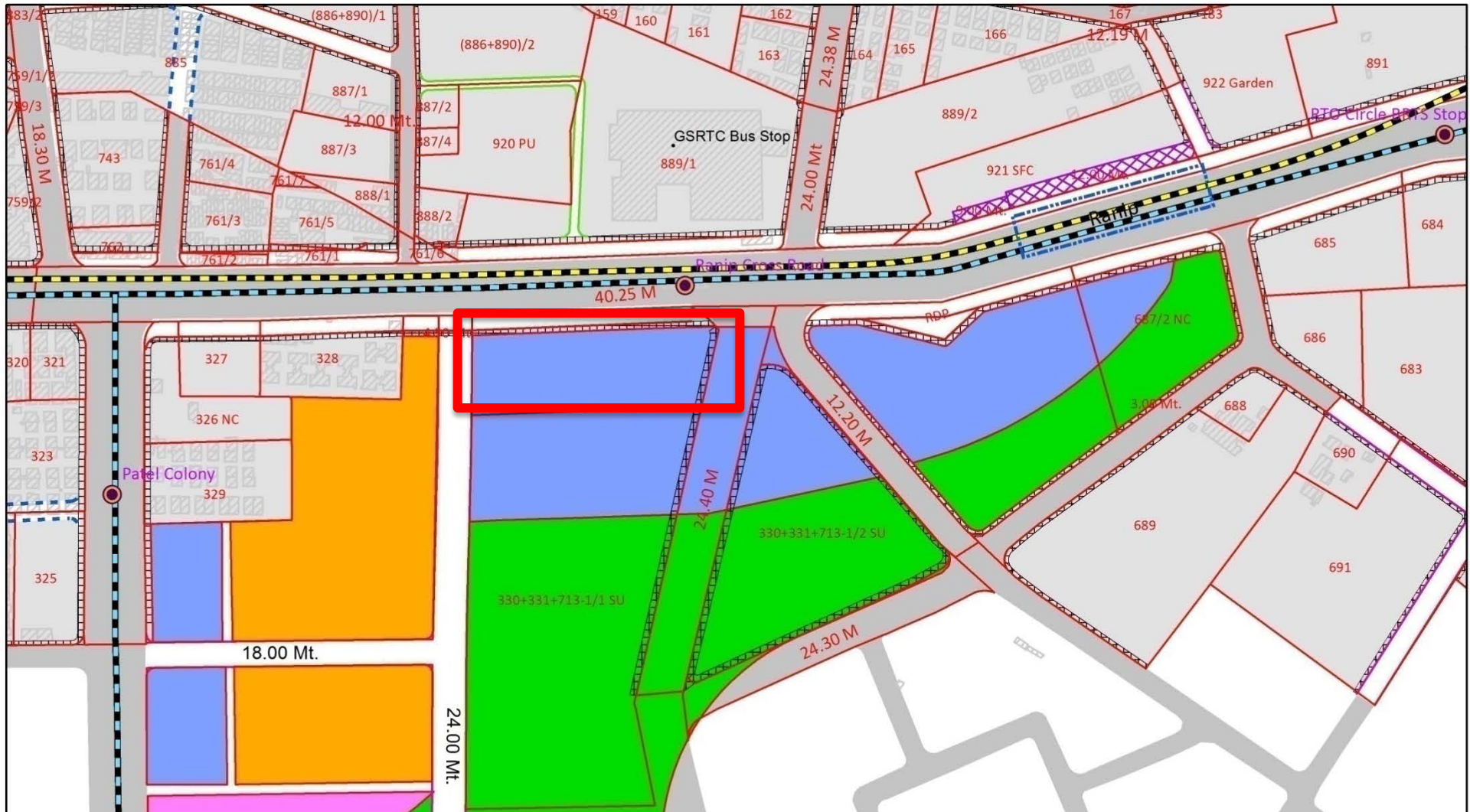


Proposal for Special area development - Wadaj



for Special area development

Proposed Inter Model Hub



Thank You!