



Integrated Mobility Plan for Greater Ahmedabad Region

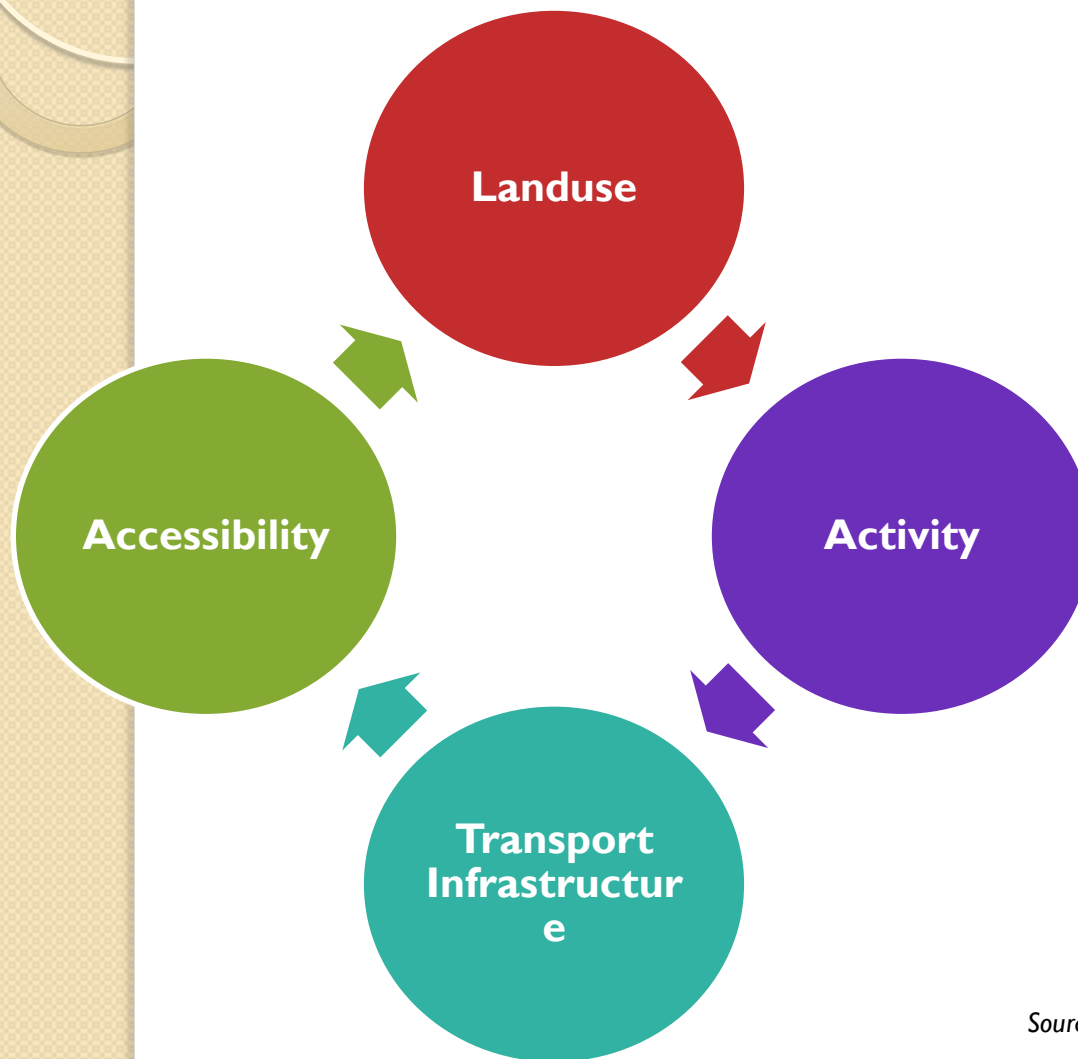
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CEPT
UNIVERSITY

9th Urban Mobility India
Conference & Expo **2016**
Planning Mobility for City's Sustainability

10th November, 2016

Concept of Land use Transport Integration



Involves two simultaneous mutually supportive processes-

- Organizing the physical form and land use pattern of a city
- Organizing all systems of transportation from pedestrian pathways to mass transit systems

Source: <http://people.hofstra.edu/geotrans/eng/methods/tlucomponents.html>

Urban Structure – Impact on Transport Demand

Land use and Transport are intricately linked to each other a 2way relationship

- Land Use/Activity distribution determines the demand for transport
- Transport supply influences land use/activity distribution
- Planning is undertaken separately as two different exercises; often by two different agencies
- Making separate plans is like **clapping with one hand**
- Lack of integration leads to un-intended consequences

Integrated Land Use Transport !!

- **Land Use Planning Framework – Statutory**

- **Plan Elements**

- Location & Intensity of Land Use – Plan/Map
- A set of DC Regulations – FSI, Zoning, Setbacks,...

- **Issues**

- Takes a long time to prepare; Revisions – once in 10 years ?
- Lack integration – economic development, environment, urban poor, transport
- Focus on New Developments – Expansion - No renewal
- Networks form the only part of transport plan
- Generally restricted to regional level- urban and local level issues ignored
- Implementation & Monitoring not robust

Inward looking plans that often lack comprehensiveness

- **Urban Transport Planning Framework – Not statutory**

- **Plan Elements**

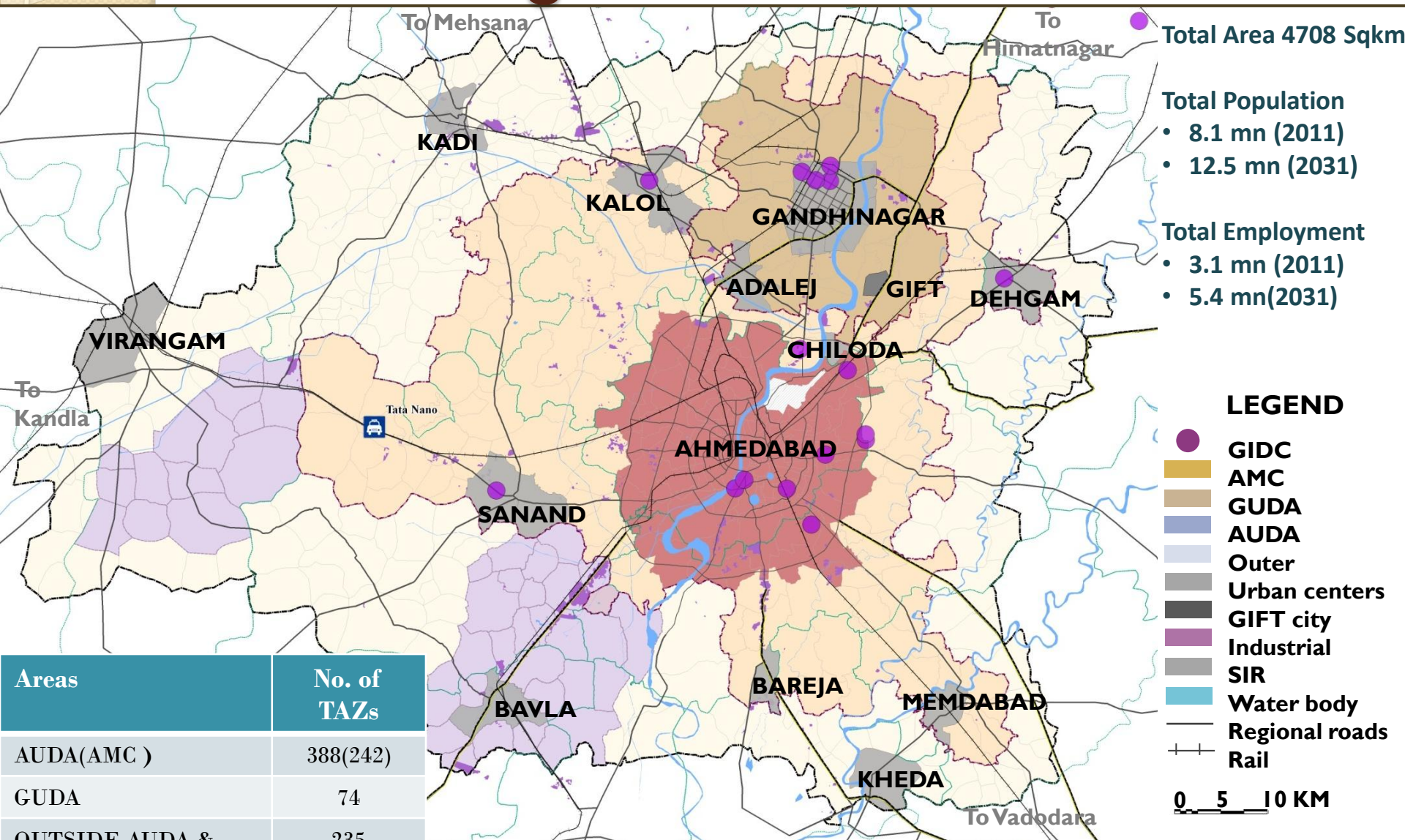
- Proposals for transport networks, infrastructure, etc

- **Issues**

- Predict & Provide & Not Strategic
- Inputs & Outputs– Not Outcomes
- Projects & Not Strategies
- Investment Focus – Not Management
- Big Ticket Projects - Mode bias – Affordability?
- Driven by Funding /Donor /Technology Provider
- Takes Land Use as Given – Generated Traffic – Ignored
- Usually unrealistic

What we need is Access; Mobility of People & Goods

Ahmedabad Region - When cities grow, they become 'City Regions'



Areas	No. of TAZs
AUDA(AMC)	388(242)
GUDA	74
OUTSIDE AUDA & GUDA	235
Total	697

Study Area

Jurisdictional areas	Comprises of	Area	Population 2011
AUDA	10 urban areas (Ahmedabad, Ahmedabad Cantonment, Bopal, Singarva, Nandej, Sanand, Kalol, Chiloda, Dehgam and Mehmabad) & 163 villages	1877.7 sq km (includes new AMC area of 466.06 sq km)*	6,526,017 (5,568,695)
GUDA	2 urban areas (Gandhinagar, Adalaj) and 37 villages	394.71 sq km	549,730
Outside AUDA and GUDA	4 urban areas (Kadi, Kheda, Viramgam, Bavla) and 270 villages	2436.04 sq km	1,091,207
Total	16 urban areas, 470 villages	4708.45 sq km	8,112,465

12.5 million people by 2031

Employment would increase by 70% from 3.1 million jobs to 5.4 million jobs in 2031

Plan Vision

The vision for the Greater Ahmedabad region for the year 2031 and beyond is to

“Integrate city structure and transport system towards greater accessibility, efficient mobility and lower carbon future”

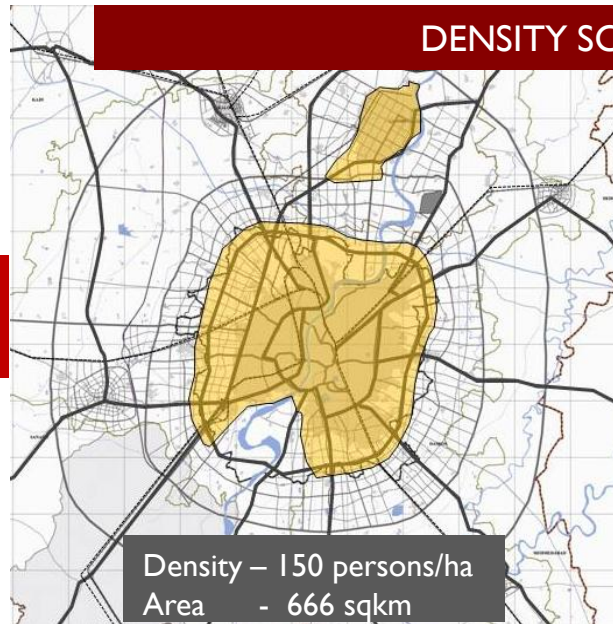
Strategic Goals

- To develop **integrated urban growth strategies and transportation infrastructure** which encourages compact development and supports envisaged economic development in the region making Ahmedabad a globally preferred investment region
- To **facilitate efficient movement of people and goods** by improving transportation network and also providing more transportation choices to its residents
- To provide **a sustainable and safer transportation system** focusing on non motorised modes and public transportation system

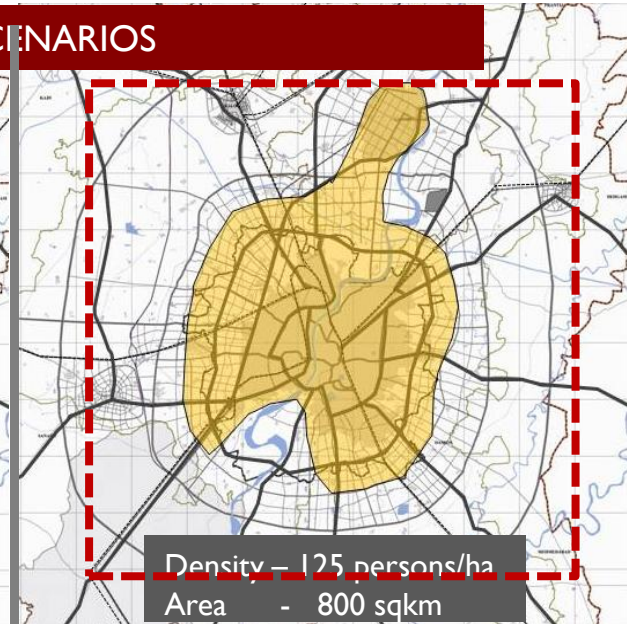
Urban Growth Scenario

DENSITY SCENARIOS

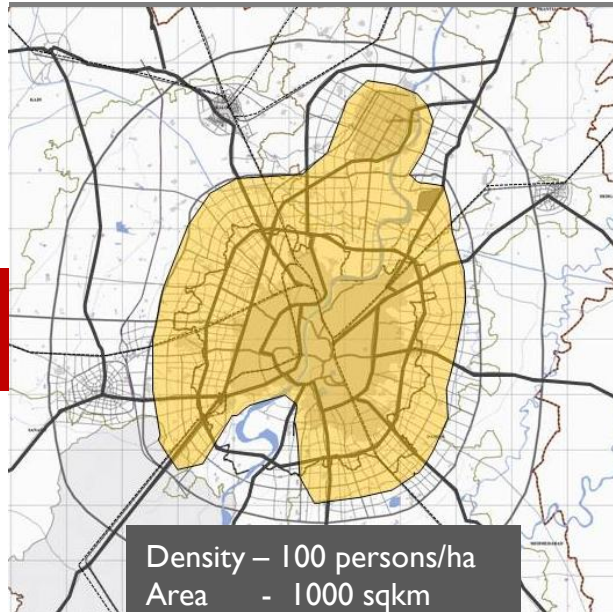
INR 2000
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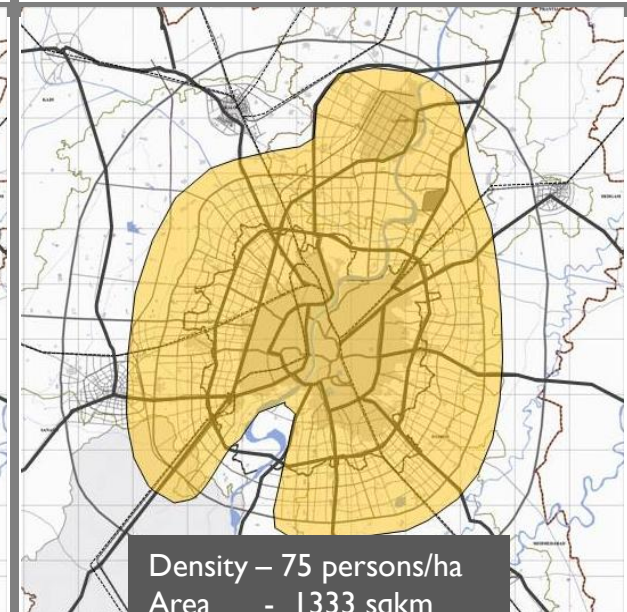
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INR 4500
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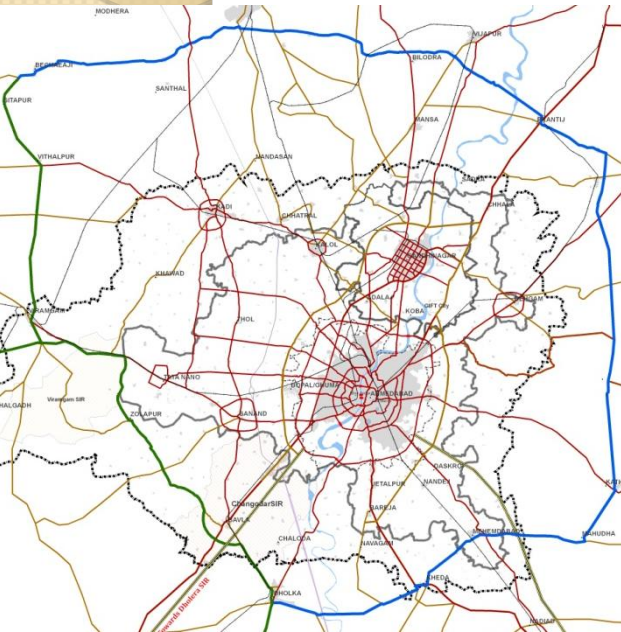
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3 tier development approach- transport plans

REGIONAL PLAN

Greater Ahmedabad Region

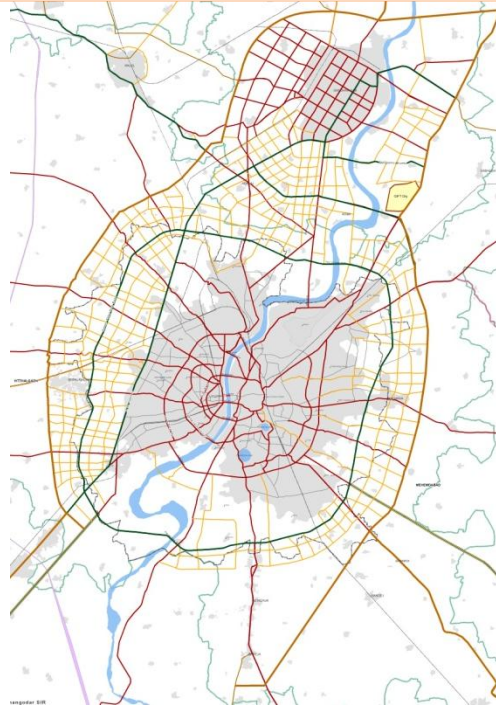


A regional plan functioning for integrating the main city and surrounding nodes/towns.

Developing Freight Corridors for the Specially developed zones

URBAN PLAN

Ahmedabad -Gandhinagar City



A Compact City Plan

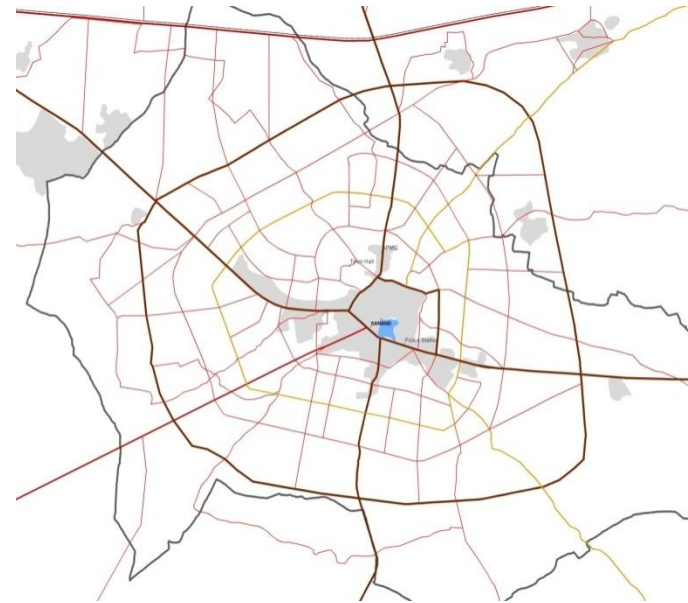
Developing strong ring and radial as city wide network

While community forms a grid network
Developing Radials as transit ready streets

Promoting NMV transit

NODAL PLANS

e.g. Sanand



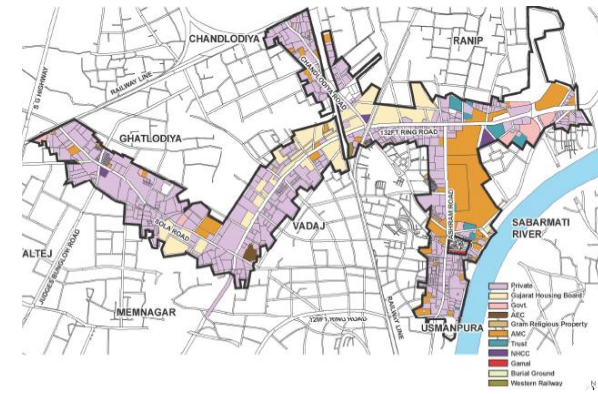
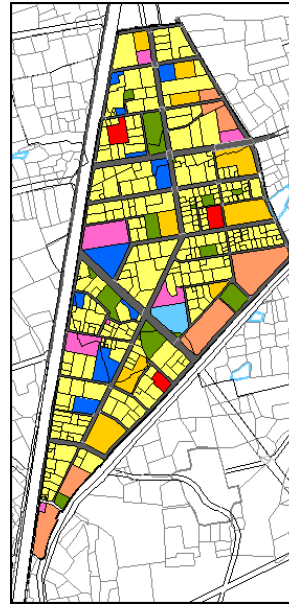
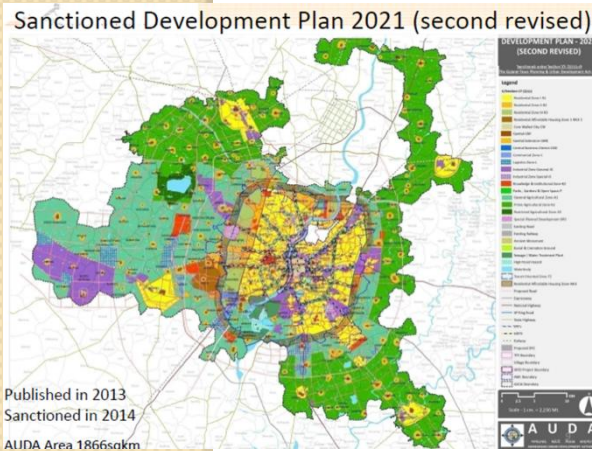
A plan for the nodes to develop as towns of high quality residential/activity areas comparable to that of Ahmedabad.

3 tier Planning Process

Development Plan” (Macro Level)

“Town Planning Schemes” (Micro Level)

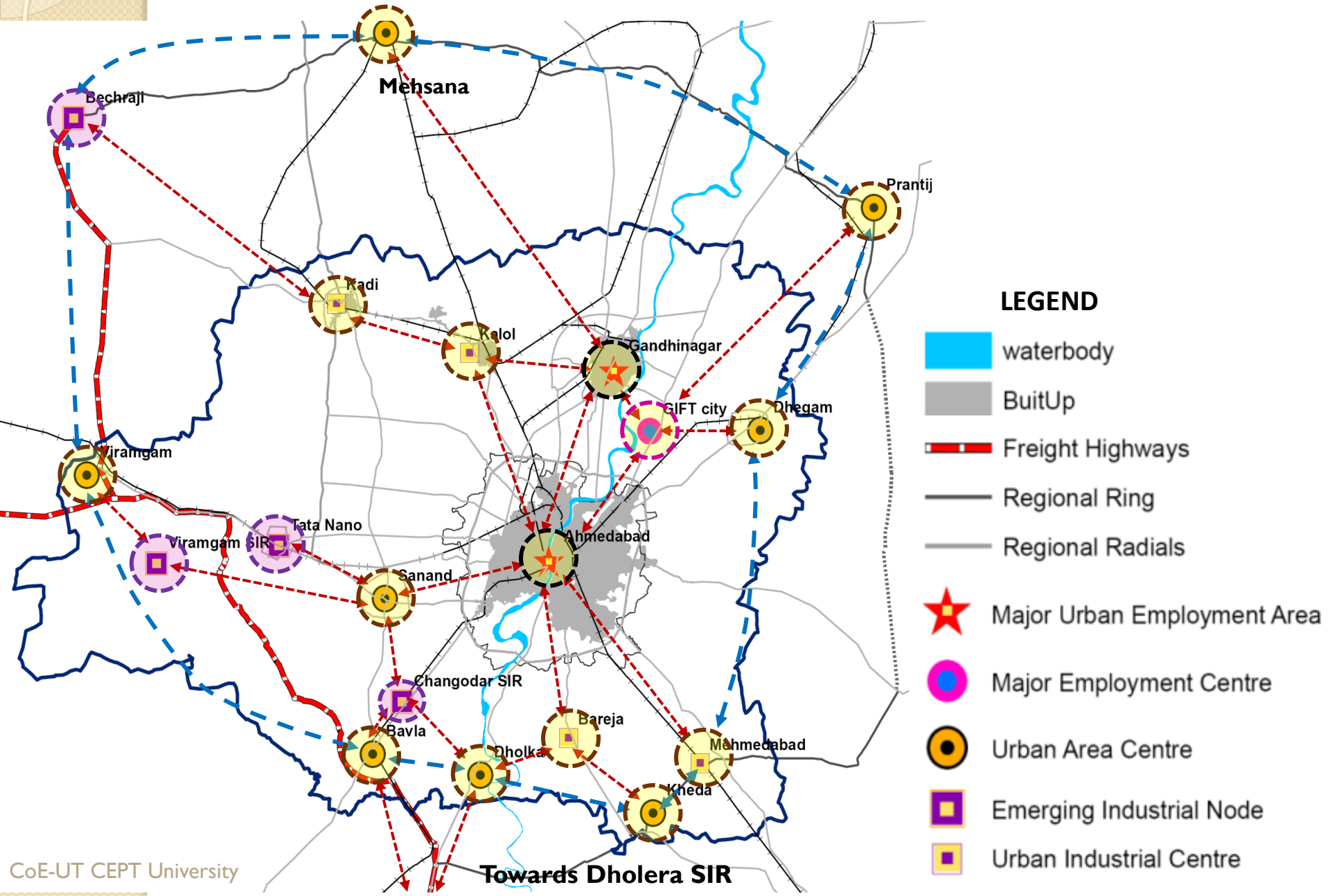
Local Area Plan” (Micro Level)



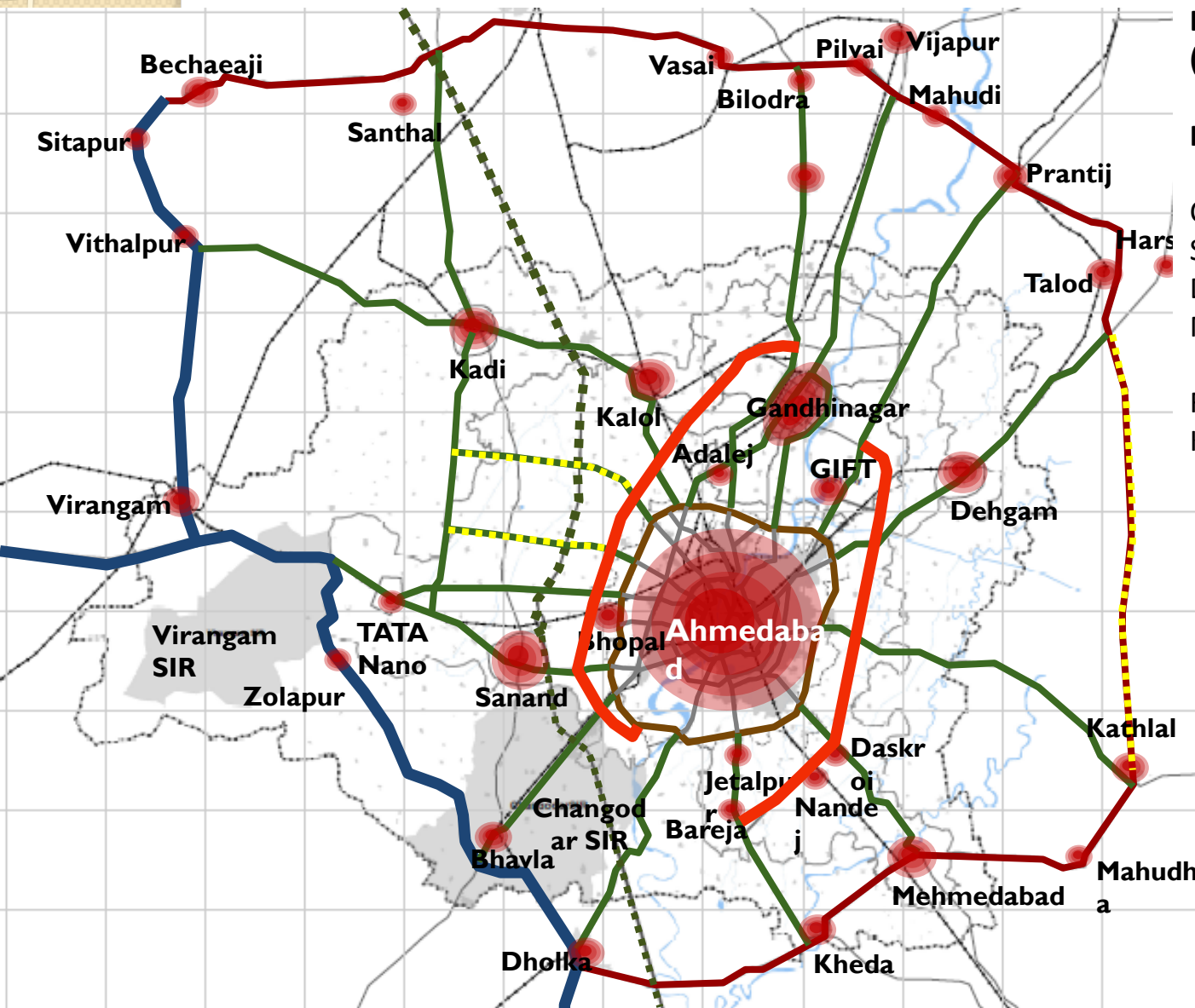
Land reconstitution
Neighborhood level road network ,
social and physical
infrastructure
Financing of neighborhood level
infrastructure

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

Linking growth in the region



Regional Network



Development of New section (45 km)

Freight corridor (125 Km)

Connects - Bechraji, Viramgam SIR, Tata Nano, Changodhar SIR, Dholera SIR to Kandla and Mundra Port.

Freight Corridor connects to Kandla Port

-  **Urban centers**
-  **Regional ring**
-  **Regional Freight corridor**
-  **Regional radials**
-  **Dedicated Freight corridor**
-  **Bypass road**
-  **SP ring road**
-  **Special Investment Zone**
-  **Major proposed regional line**
-  **Major proposed regional radial**

0 10 20 KM

Urban Arterials

Road Network Characteristics:

Number of Regional Radials – 14

Number of Urban Radials (arterials) – 17

Avg distance between Inner rings- 1.5 km

Avg distance between Outer rings- 4-5 km

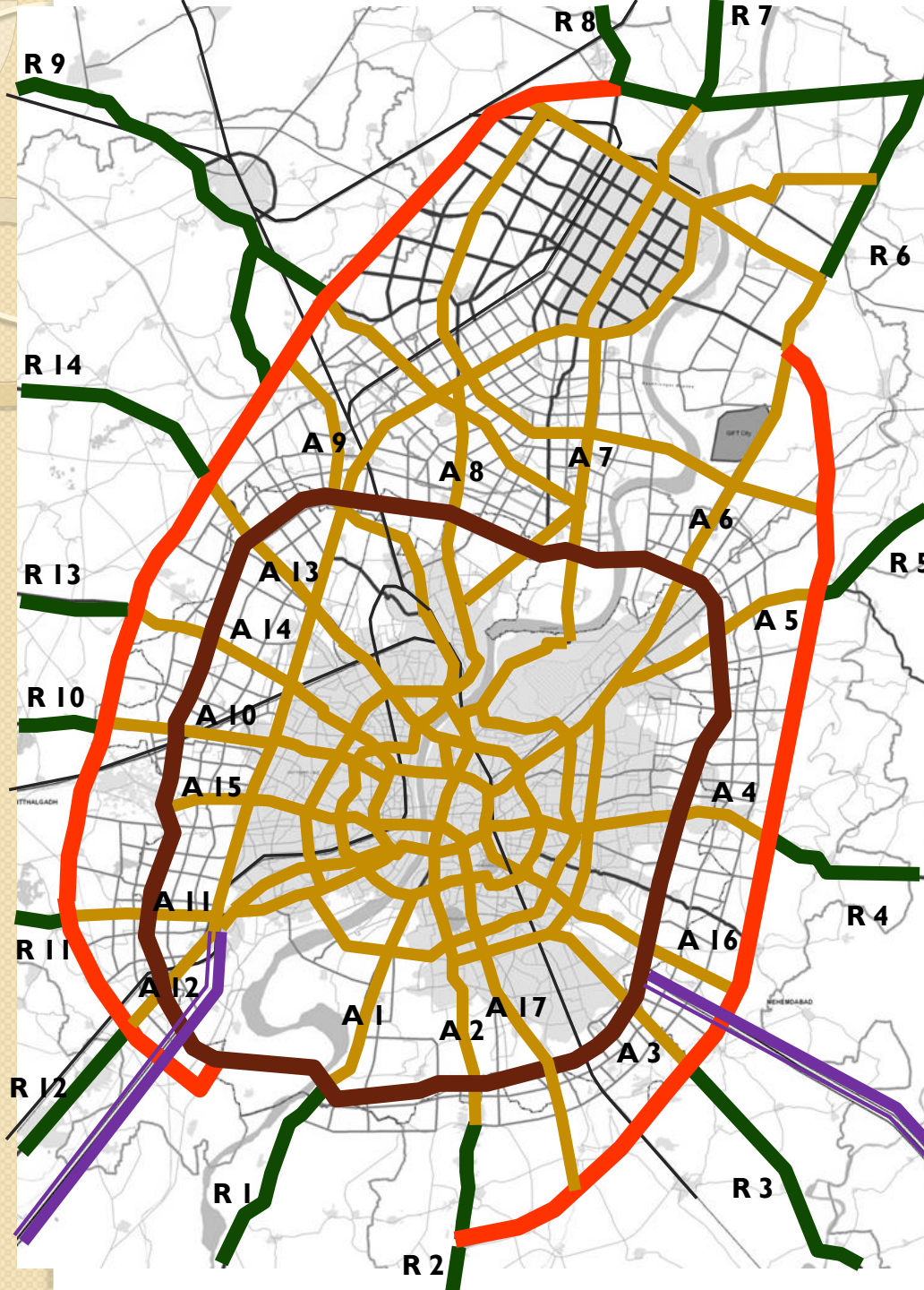
Avg distance between radials – 5.5 Km
(WRT SP Ring Road)

Average Grid size at block level _ 1.2 x 1.5 km

LEGEND

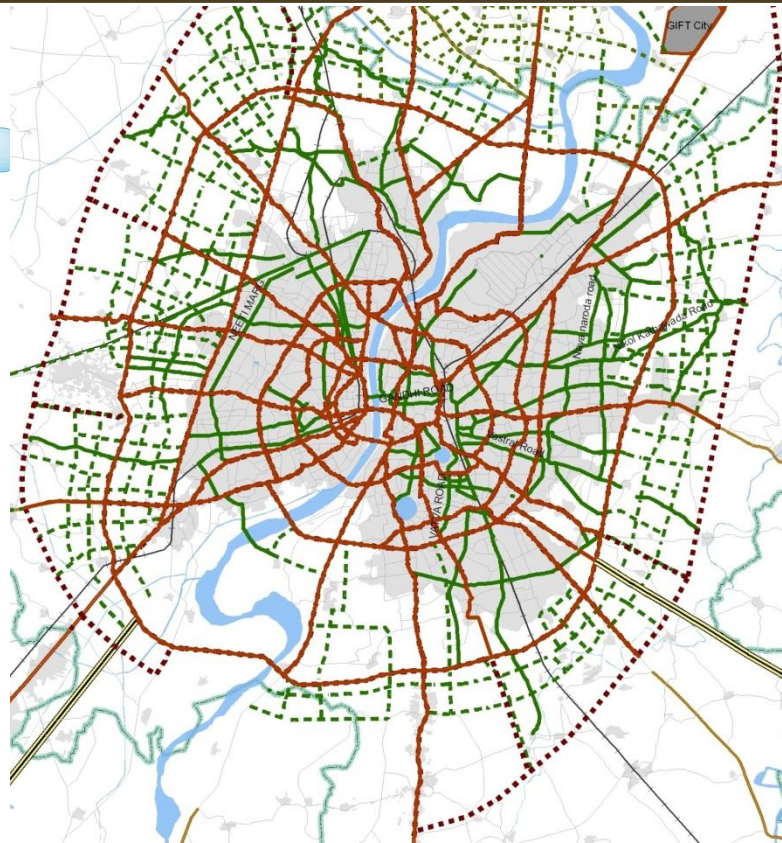
-  Regional radials
-  Urban Arterials
-  SP ring road
-  Proposed bypass
-  Express highway
-  Other roads
-  Railway line
-  Urban built

0 2 4 8 KM



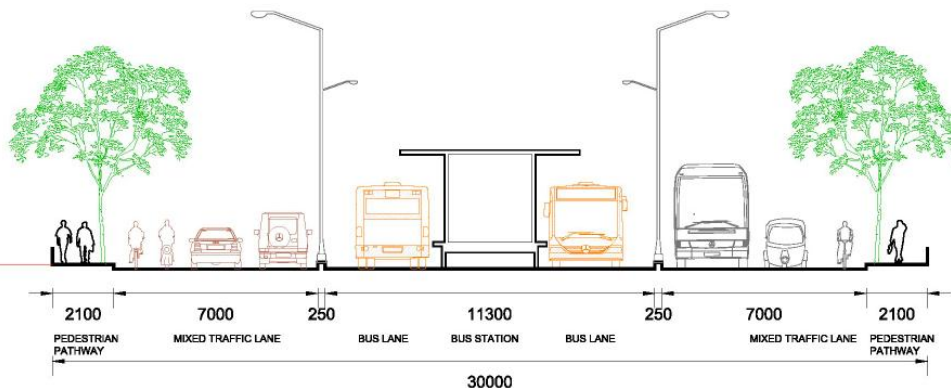
Urban Arterials and Sub-Arterials – Level 1 & 2

Concept of Transit Ready Streets adopted



LEGEND

- Existing Urban Arterials
- Proposed Urban Arterials
- Existing Sub-Arterials
- Proposed Sub-Arterials
- Railway line
- Urban built
- Water body



Collectors – Level 3

Road structure Characteristics- emphasis on Pedestrians

Average Neighbourhood size – 1.5 kmX2km

Signalized Junction at every 1-1.5 Km

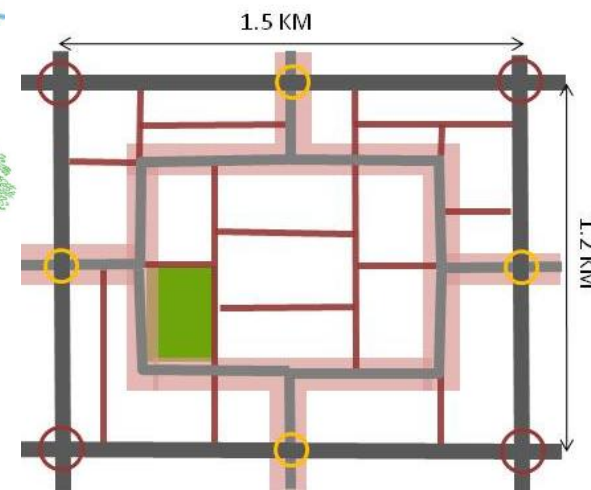
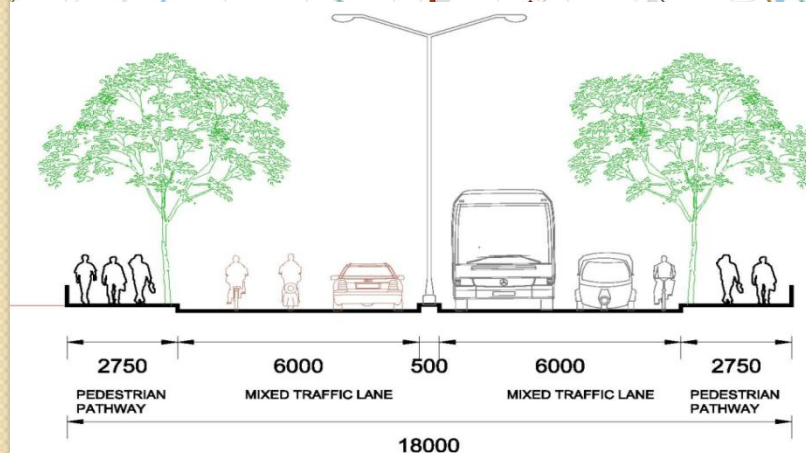
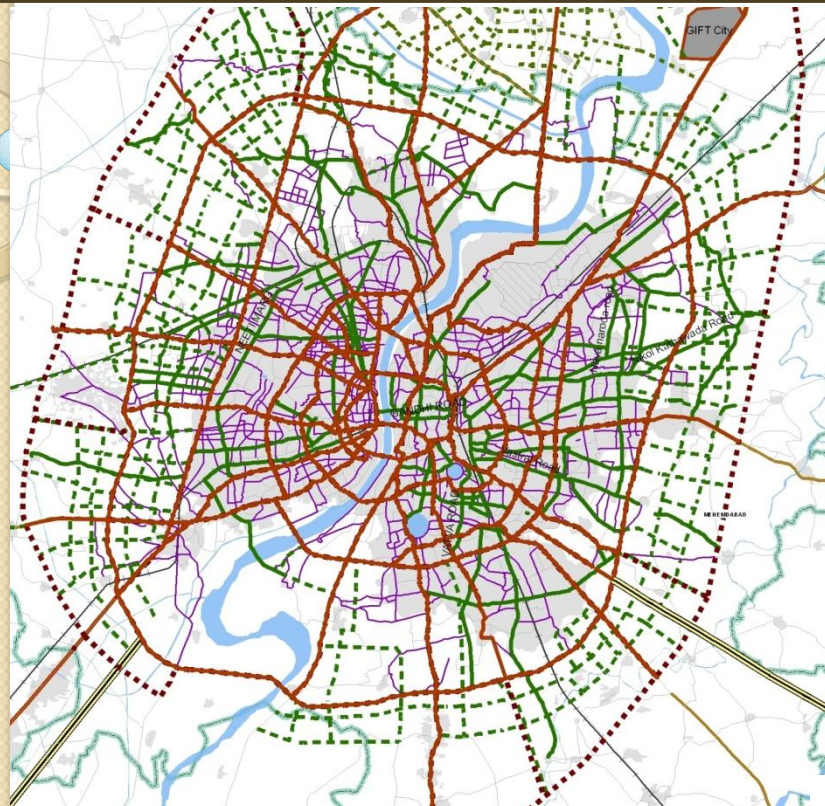
Non signalized junction at every 0.5-.08 Km

Multiple access points for each block to reduce congestion

No through roads to discourage through traffic

LEGEND

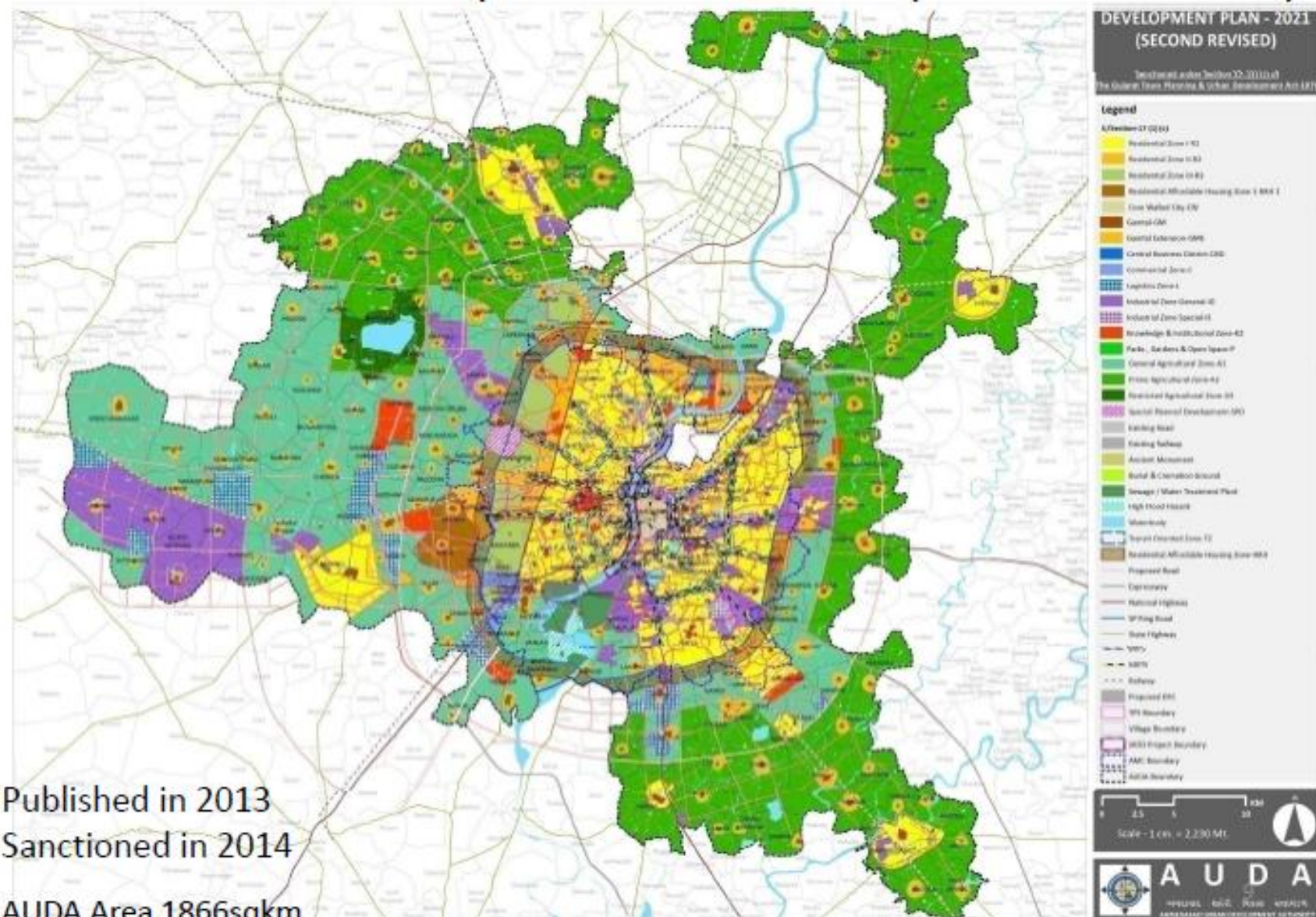
- Existing Urban Arterials
- ... Proposed Urban Arterials
- Existing Sub-Arterials
- ... Proposed Sub-Arterials
- Existing Collectors
- Railway line
- Urban built
- Water body



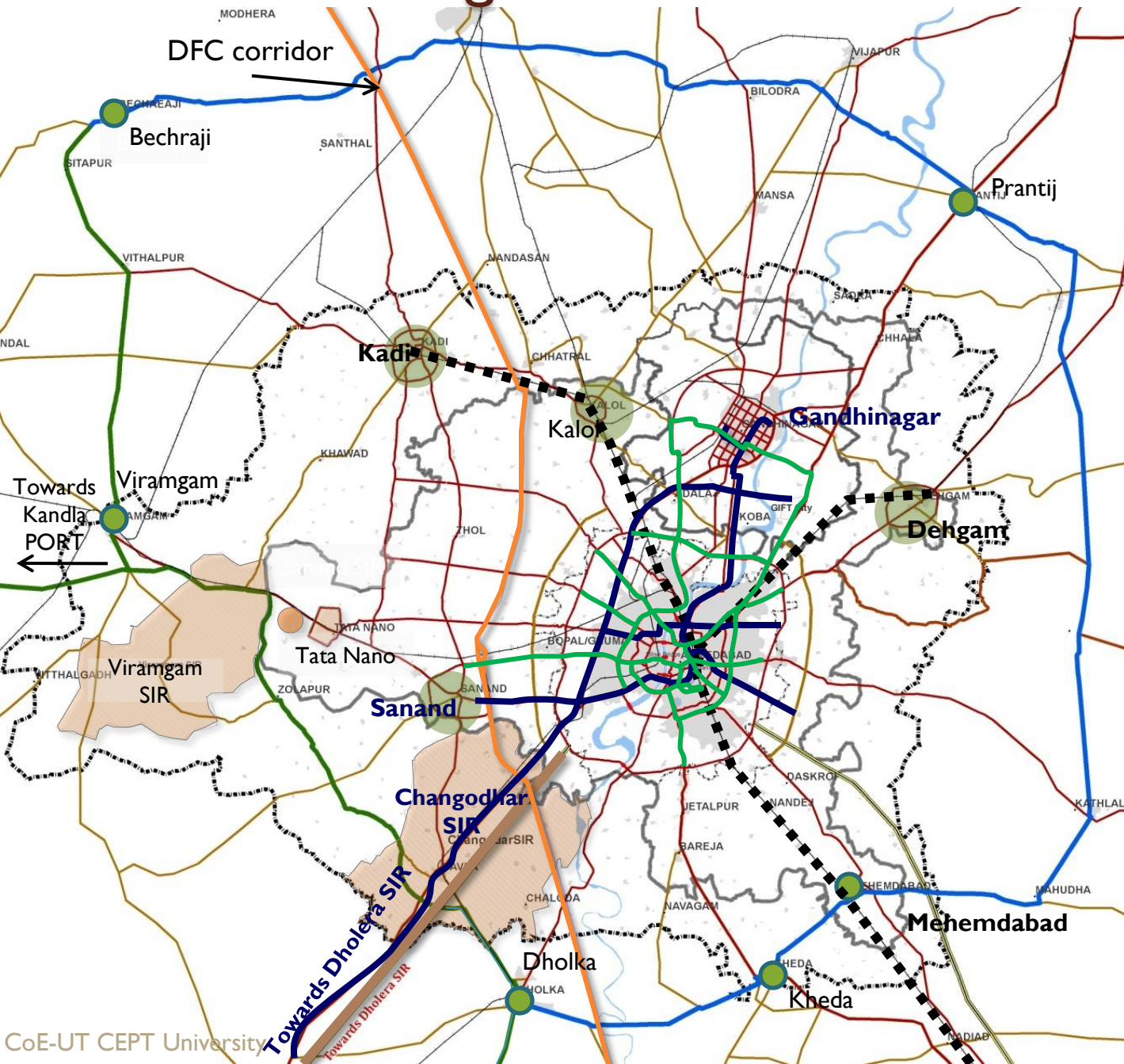
LEGEND

- Non signalized junction
- Signalized Junction
- NMV facilities
- 36 m Urban Sub-arterials
- 18 m Collectors
- 12 m Distributors
- 10% green space

Sanctioned Development Plan 2021 (second revised)



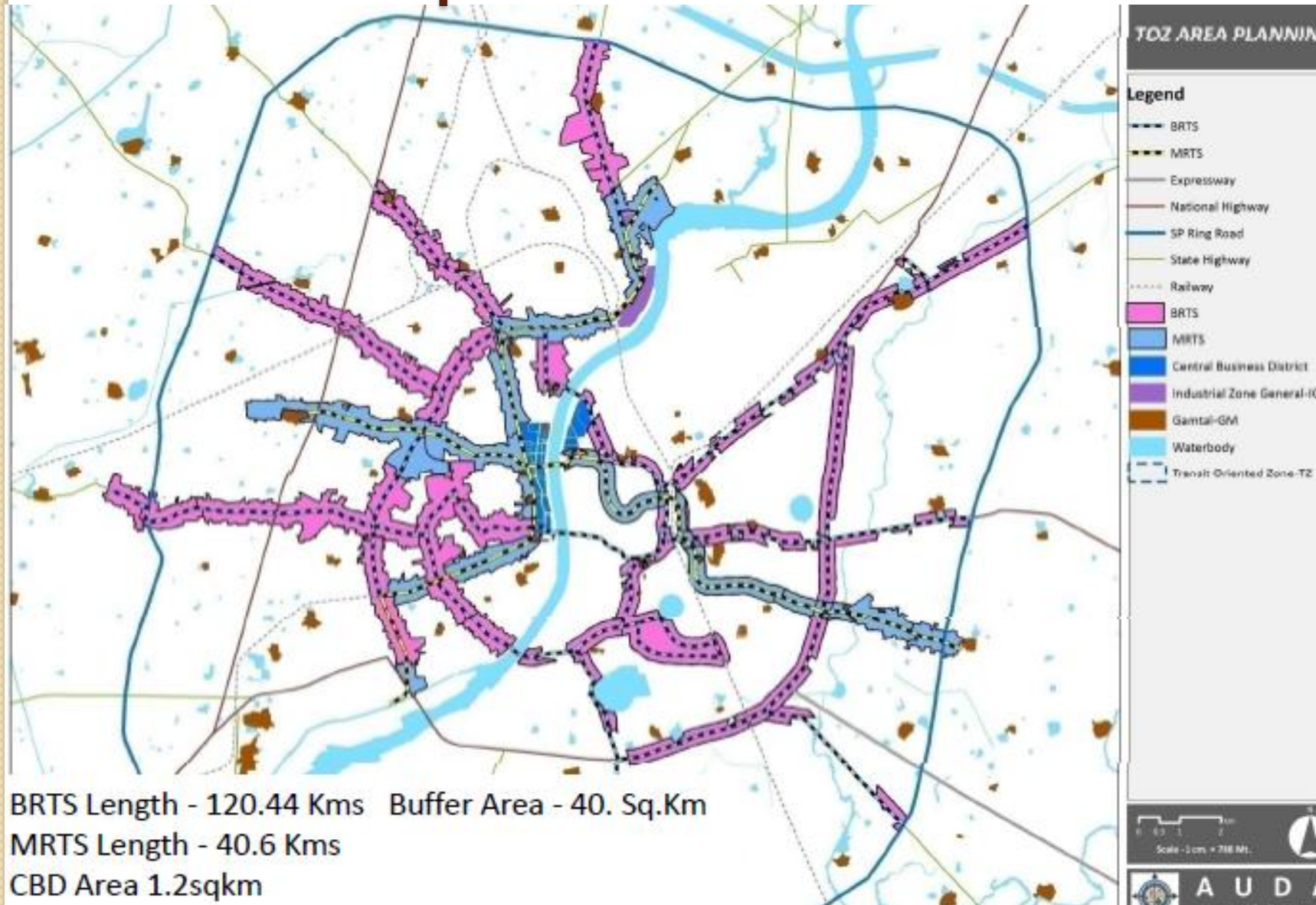
Connecting Clusters with PT



LEGEND

-  BRT
-  Metro
-  Regional Rail

Public Transport Network



BRTS Length - 120.44 Kms Buffer Area - 40. Sq.Km

MRTS Length - 40.6 Kms

CBD Area 1.2sqkm

Transit Oriented Zone



Transit Oriented Zone

- 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)
- Destine to city tourist places, Economic Centre, Commercial hub and major transit route

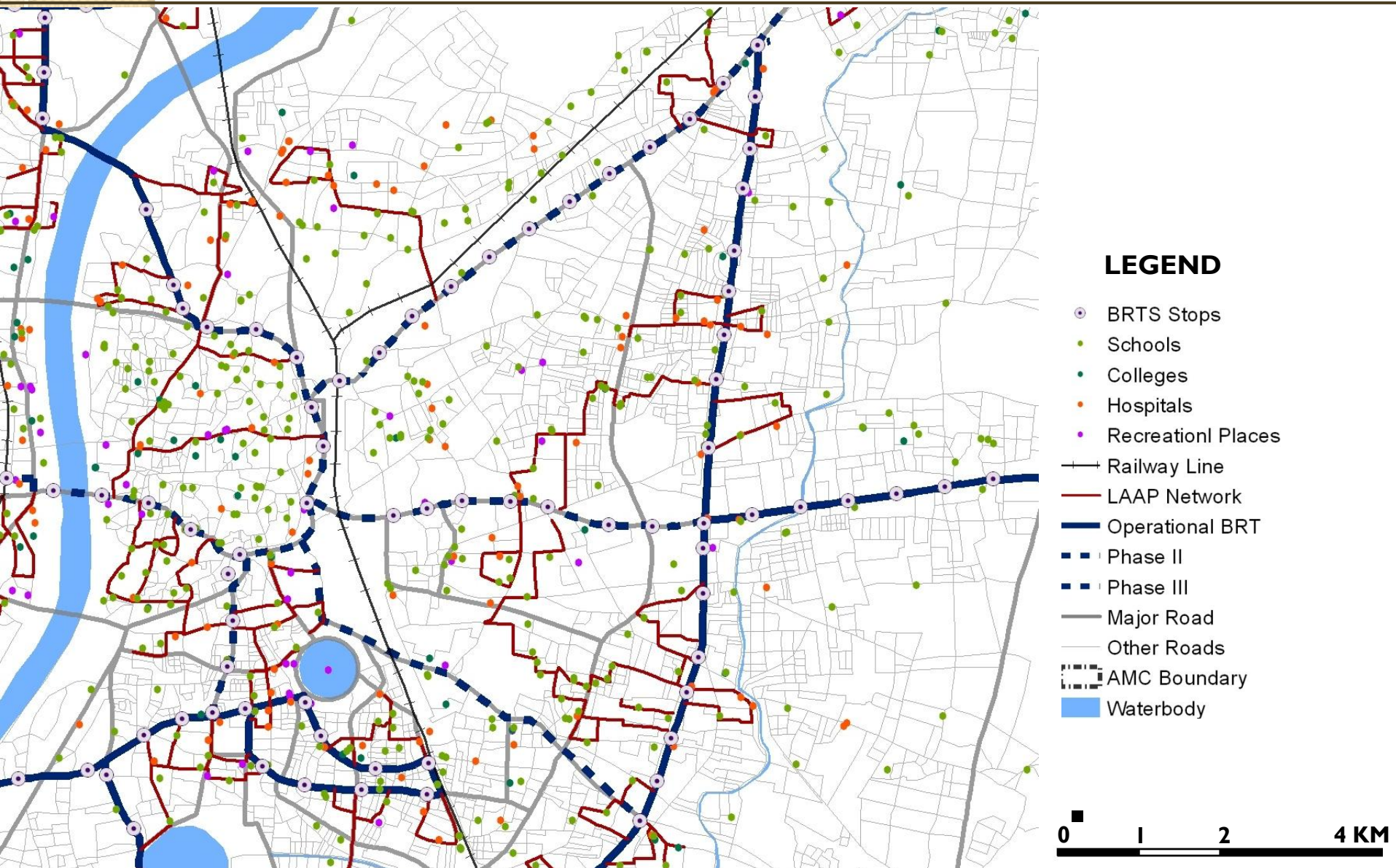
Proposals for city bus services

- **Fleet Augmentation**
- **Route rationalization**
 - Bus improvement scheme
 - Network coverage densification
 - Feeder services
- **Improvement in service quality**
 - Infrastructure improvement
 - Fleet renewal
 - Passenger information system

Strategies for NMT

- Creation of complete streets for facilitating non-motorised movements
- Improving access to mass transit stations - Local Area Access Plans (LAAP)
 - Design of pedestrian and cycle friendly streets having continuous and well maintained footpaths
 - Providing direct connections to activity centres
 - Minimising conflicts with motorised traffic at the area level through traffic calming measures
- Place making projects around Bhadra fort and Law Garden area aiming to “provide spaces back to people”

Local Area Access Plan



Demand management

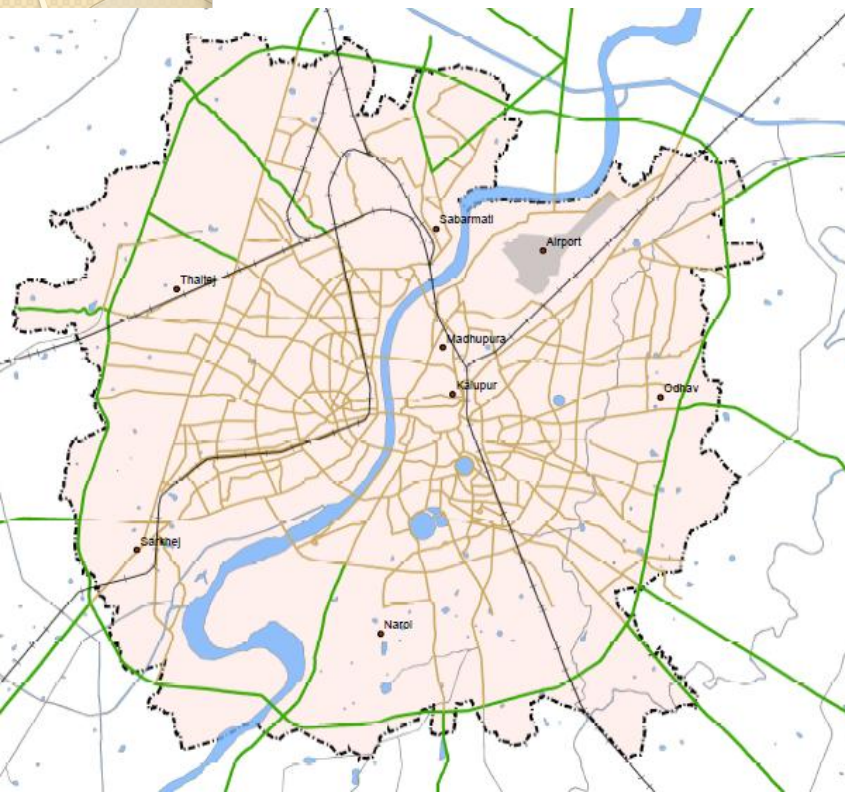
- Parking policies

- Free parking should be minimized or eliminated
- Use variable parking charges more widely to reduce peak demand
- Parking rates lower at peripheral Park and Ride locations to encourage use of PT modes to travel into the city
- Parking space provision near BRT stops and metro for autos, bicycles, two-wheelers and cars

- Parking facilities:

- Park and ride facilities proposed at the major PT nodes on the SP Ring road. (Tragad, Sarkhej, Koba, Naroda, Aslali, Kathwada)
- Development of multi-storied parking lots
 - Municipal plot located behind Navrangpura bus station
 - Navrangpura Municipal Market Plot
 - Kalupur Railway station
 - Sarangpur Bus terminal
 - Sarangpur Anand market

Freight Management



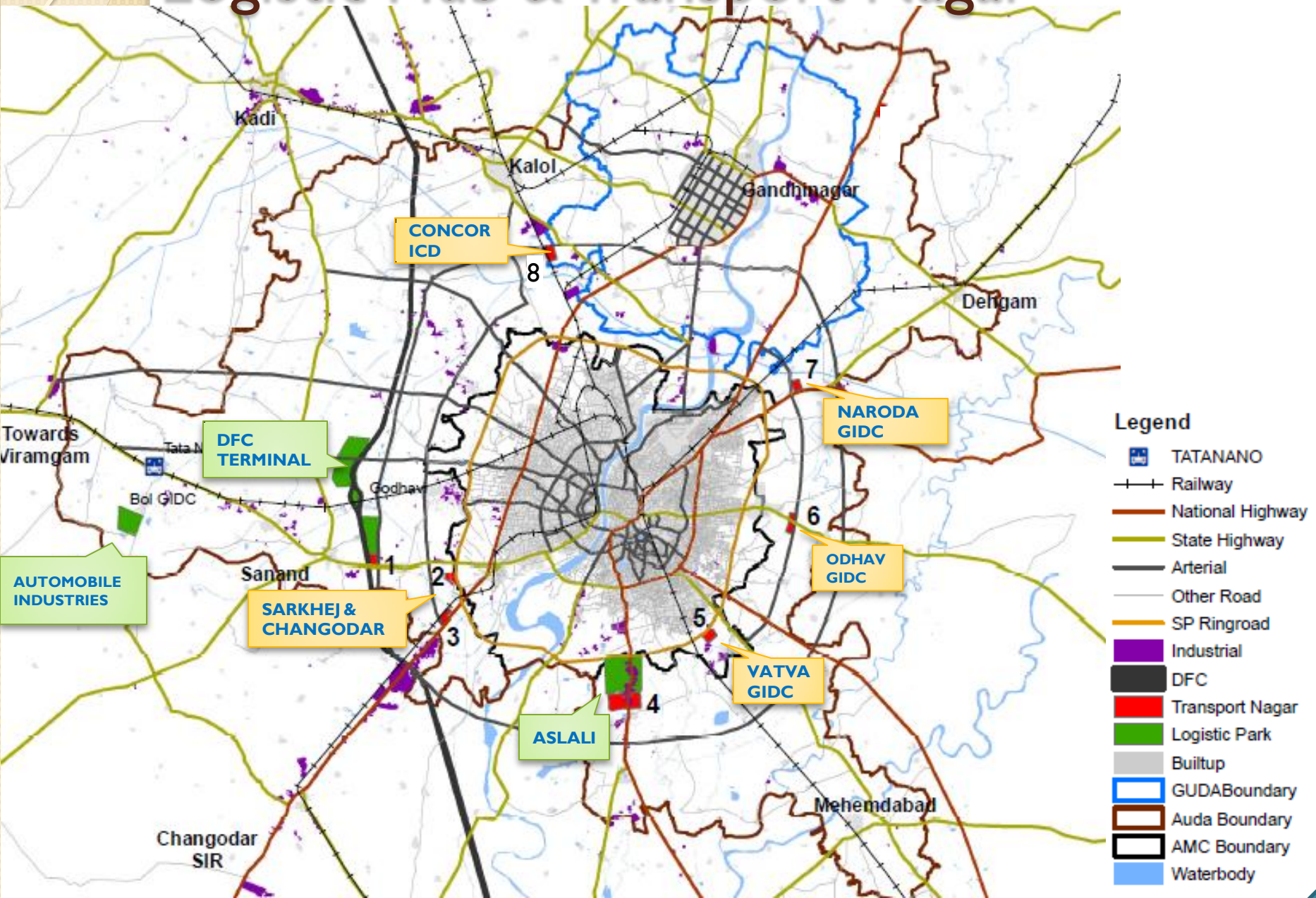
- No Restriction
- Allowed 9 pm to 9 am
- AMC Boundary

- **Redefined freight Routes and Time zones**
 - Night time delivery period : 11 pm to 7 pm
 - It is also advisable to discontinue off-peak time zone (from 1 pm to 4 pm).
- **Redefine Freight Access in GIDC Area**
- **Provision for Parking and Transporter Facilities within GIDC Estates**
 - - Naroda GIDC
 - - Vatva GIDC
 - - Odhav GIDC
- **Trucking Information Systems, Signage and Truck Traffic Control**
- **Upgrading Warehousing and Transport Facilities - Logistic Hub (Sarkhej & Aslali)**

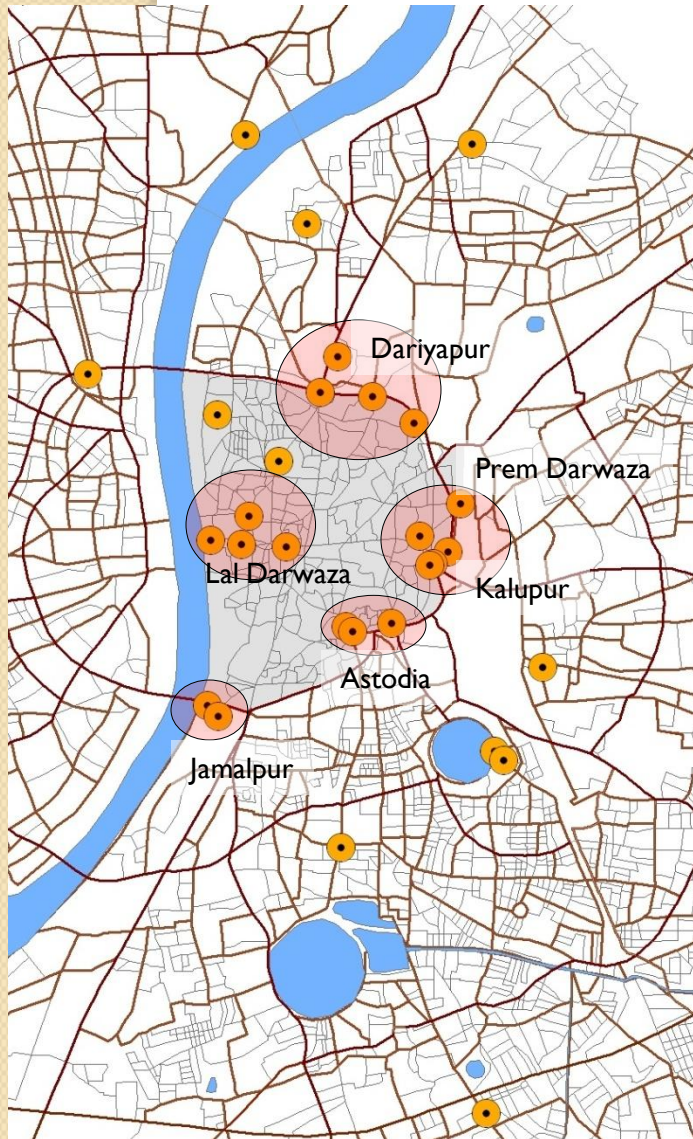
Strategies

- **Establish Logistic Hubs-Consolidation/Distribution Centers**
 - Developing several UCCs (Urban Consolidation Center) in Ahmedabad near commercial centers & city area.
- **Logistics hubs & Transport Nagar need to be integrated with the city logistic areas for smooth movement of goods.**
- **Institutional Arrangements for developing UCCs**
 - Preference for legally constituted bodies involving main players to establish and oversee UCCs
 - Commercial organization or logistics operator to take sole lead and decide legal and commercial framework to operate a UCC

Logistic Hub & Transport Nagar



Freight Management – Heritage Sites



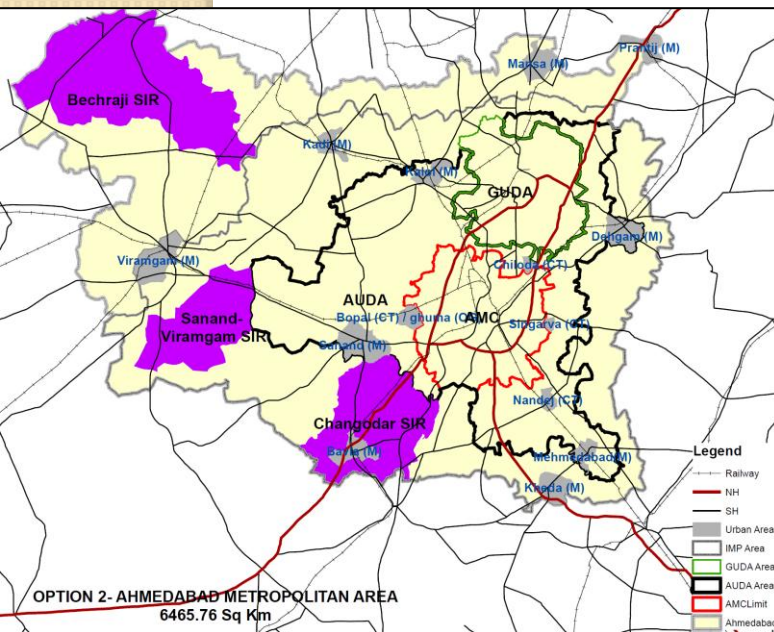
Legend

- Walled city area
- Heritage sites
- Major Roads
- Restricting Freight Movement

- City Centre land use – transport policies
 - Declare the entire walled city and surrounding area as Heritage Area
 - Encourage wholesale grain and wood markets and warehousing activity to relocate
 - Encourage development of heritage, tourism and retail activity in and around
 - Encourage use of cleaner fuel driven vehicles for goods transport
 - Implement Inner-city transit development plan

Development Framework

GREATER AHMEDABAD METROPOLITAN DEVELOPMENT AUTHORITY



**G
M
D
A**

Spatial Development wing

Urban Infrastructure
Fund (50%)

Urban Transport Fund
(50%)

Transportation Development wing

- Varying FSI (CBD, Nodes,
Corridors)
- Sale of FSI

Land use-Transport Plan

- Land use Plan
- Transit Plan
- Travel Demand Mgmt
- Parking Policy
- Congestion Charges
- Pollution Taxes

AUDA to be upgraded to GAMDA
In line with 74th Constitutional
Amendment
Coordinated Regional Development
Long Term Perspective



Thank you
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