

ASSESSMENT OF TOD POLICIES AND IMPLEMENTATION PROCESS CASES OF DELHI - AHMEDABAD

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Background & Need for the Study

Problem Statement

WORSENING TRAFFIC CONGESTION

UNCOMFORTABLE & UNAFFORDABLE MOBILITY OPTIONS

ENVIRONMENTAL WEAKENING

SOCIAL INEQUALITY

LACK OF SAFETY

More CARS & Demotion of Public Transport.

SEGREGATED LAND USES

Increased no. of Trips

LARGE URBAN BLOCK PERIMETER

Non-walkable blocks

SUPPLY OF EXTRA WIDE ROADS

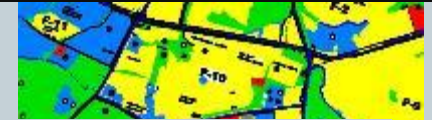
Encourage Cars

LACK OF STREET INFRASTRUCTURE

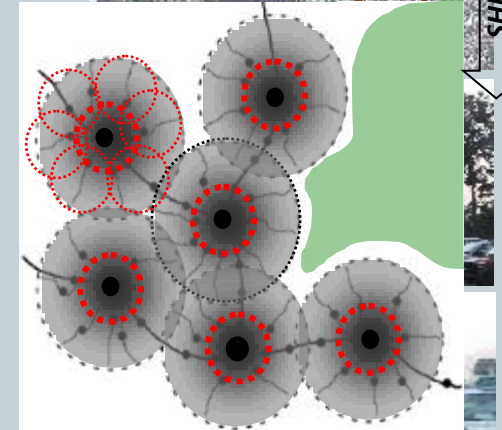
Lack of Safety

NO PROPER FOOTPATHS

Discourage walking



Auto-Oriented City



Transit-Oriented City

Health problems

Degradation of Quality of Life

Background & Need for the Study

National Urban Transport Policy

Identified Need of TOD for Indian cities

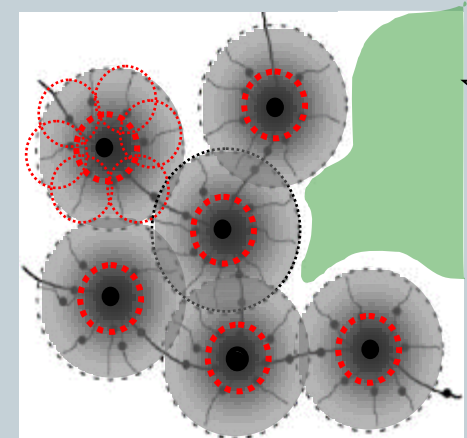
Many cities in India are now trying to incorporate TOD in their Planning process. Example, Delhi, Ahmedabad, Haryana, Naya Raipur, Mumbai etc.

Important to understand TOD for Indian cities to promote easy and efficient implantation of TOD in India.

Delhi and Ahmedabad earliest examples of TOD in India.

Can be studied in order to understand on ground complexities to implement TOD.

Auto-Oriented City



Transit-Oriented City

Image Source: UTTIPEC, 2010

Aim and Objectives

AIM

To assess the Transit Oriented Development (TOD) policies and its implementation strategies in two Indian cities namely, Delhi & Ahmedabad.

Objectives

To examine TOD concept and policies for implementation.

To examines the TOD implementation process in terms of pace of implementation (likely implications on urban form).

To identify barriers or enablers in TOD implementation in Delhi and Ahmedabad.

Scope and limitation

- Scope of the study includes assessment of TOD policies in Delhi and Ahmedabad, so as to understand the enablers or barriers in implementation of TOD in these cities.
- The study is limited to, examine implementation strategies and TOD norms mentioned in respective Development Plans of Ahmedabad and Delhi.

Methodology

Background.
Problem
Statement.
Need for the
study.
Aim
Objectives.
Scope &
limitations.

Concepts &
theories of TOD.
Case Studies.
Policies &
strategies to
implement TOD in
world.

To understand
their approaches
for TOD.
To understand
TOD policies and
implementation
strategies in Delhi
& Ahmedabad.

To understand the
difference in TOD
approaches in
Delhi and
Ahmedabad

To identify
barriers &
enablers of TOD
in Delhi &
Ahmedabad.

Study

**Understanding
TOD**

**TOD in India:
Delhi & Ahmedabad**

**Comparative
Analysis**

Conclusion

**Preliminary
study**

**Literature
Review**

Secondary data:
Planning documents
Primary survey
Personal Interviews
of Practitioners &
academic planners,
architects &
developers.

Qualitative Analysis

Transit Oriented Development

Transit Oriented Development is a **high density** and **mixed used** type of **development close to transit** service or around transit station so that more trips can be made on **foot, bicycle** and by **public transport**.

Characteristics

- Proximity to transit station
- High quality transit
- Compact mixed-use buildings
- Housing options
- Moderate to high density
- Pedestrian orientation/ connectivity
- Transportation choices
- Reduced parking
- High quality design



Transit Oriented Development

Household benefits

Reduced cost of driving.

Improved access to destinations.

Provides mobility options.

Promotes health

Environmental Benefits

Reduces green house gas emission

Preserves agricultural land and assist with food security

Promotes energy independency.

Economic benefits

Increases productivity and saves time.

Encourages concentration of business activity.

Increases economic competitiveness

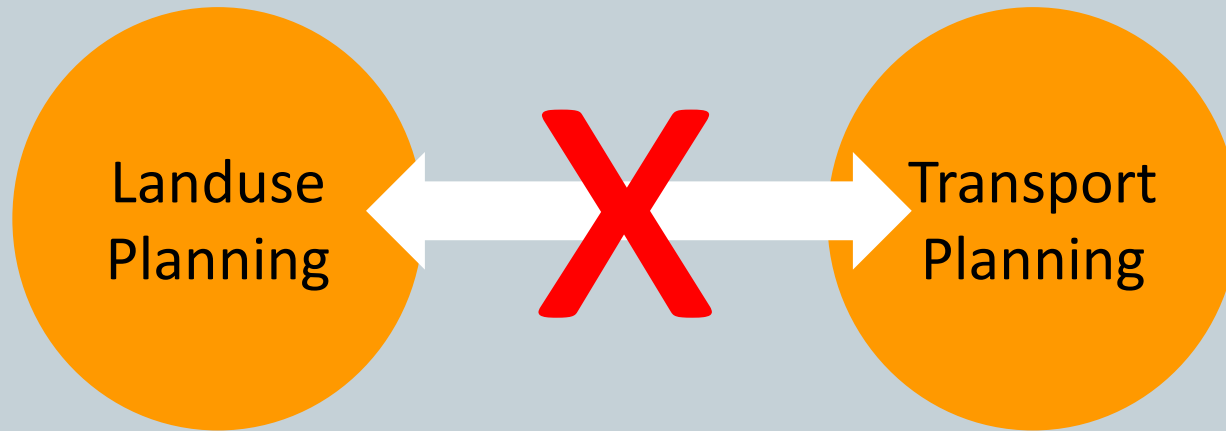
Increases property values & development potential.

Fiscal Benefits

Saving on cost to build and maintain highway and roads

Generates stronger tax revenues

Land use and Transportation Planning in India



TOD



All ready developed area
(To meet urgent demand)

City Profile: Delhi

420 Vehicles per 1000 population.

Fatal road accidents 2200 in year 2014

Vehicles Registered (2011) 6.93 million

MPD 2021 aims at a modal shift of 80:20

NCT of Delhi
Area:
1483 sq kms
Population (2011)
16.7million

RITES Study in 2008, modal share of 45:55

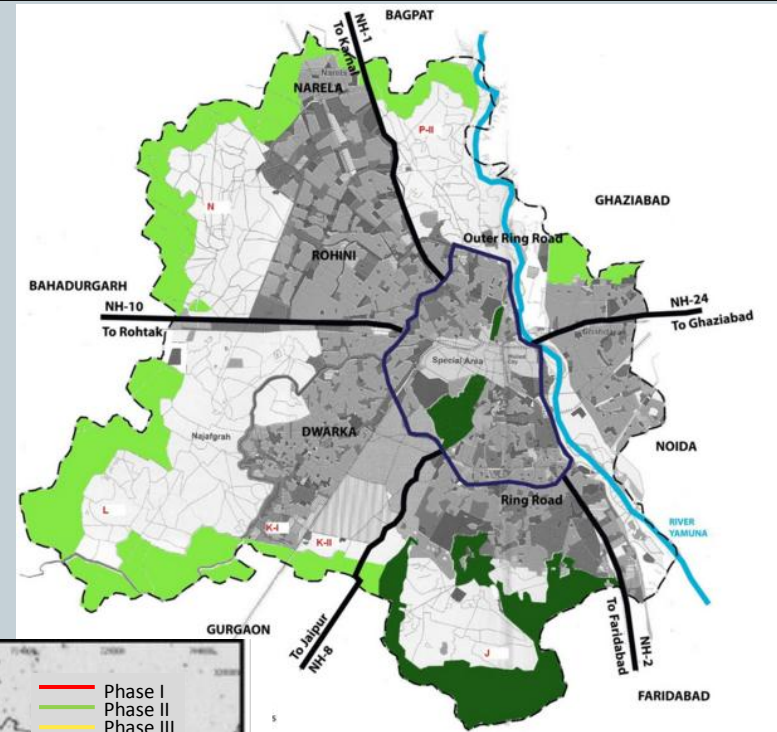


Image Source: Urban India: Evidence – IHS Publication, 2011

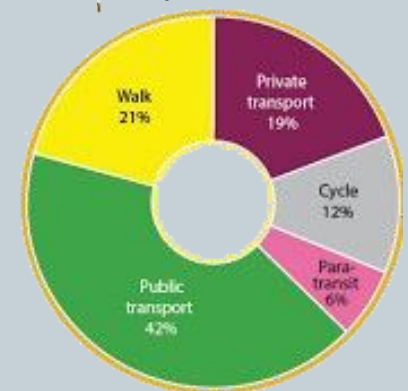
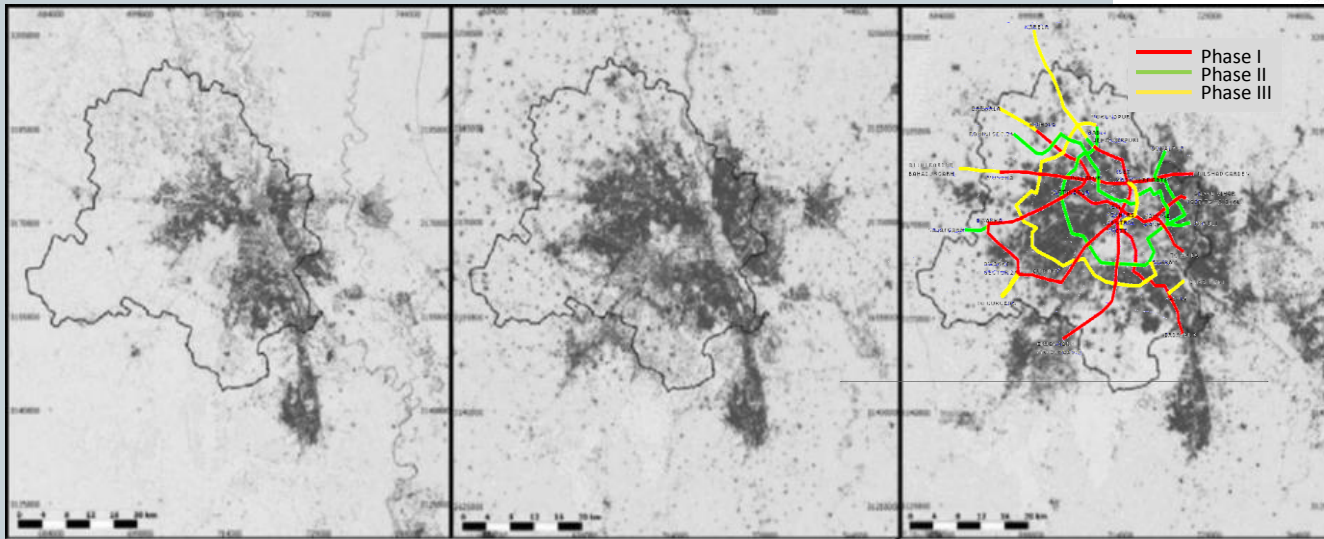


Image Source: Journey issues7, November 2011



1991 | 8.7 mil. People

Urban Area: **685.34 SqKms**

Urban Population Density: **124 PPH**

2001 | 13.7 mil. people

Urban Area: **924.68 SqKms**

Urban Population Density: **139 PPH**

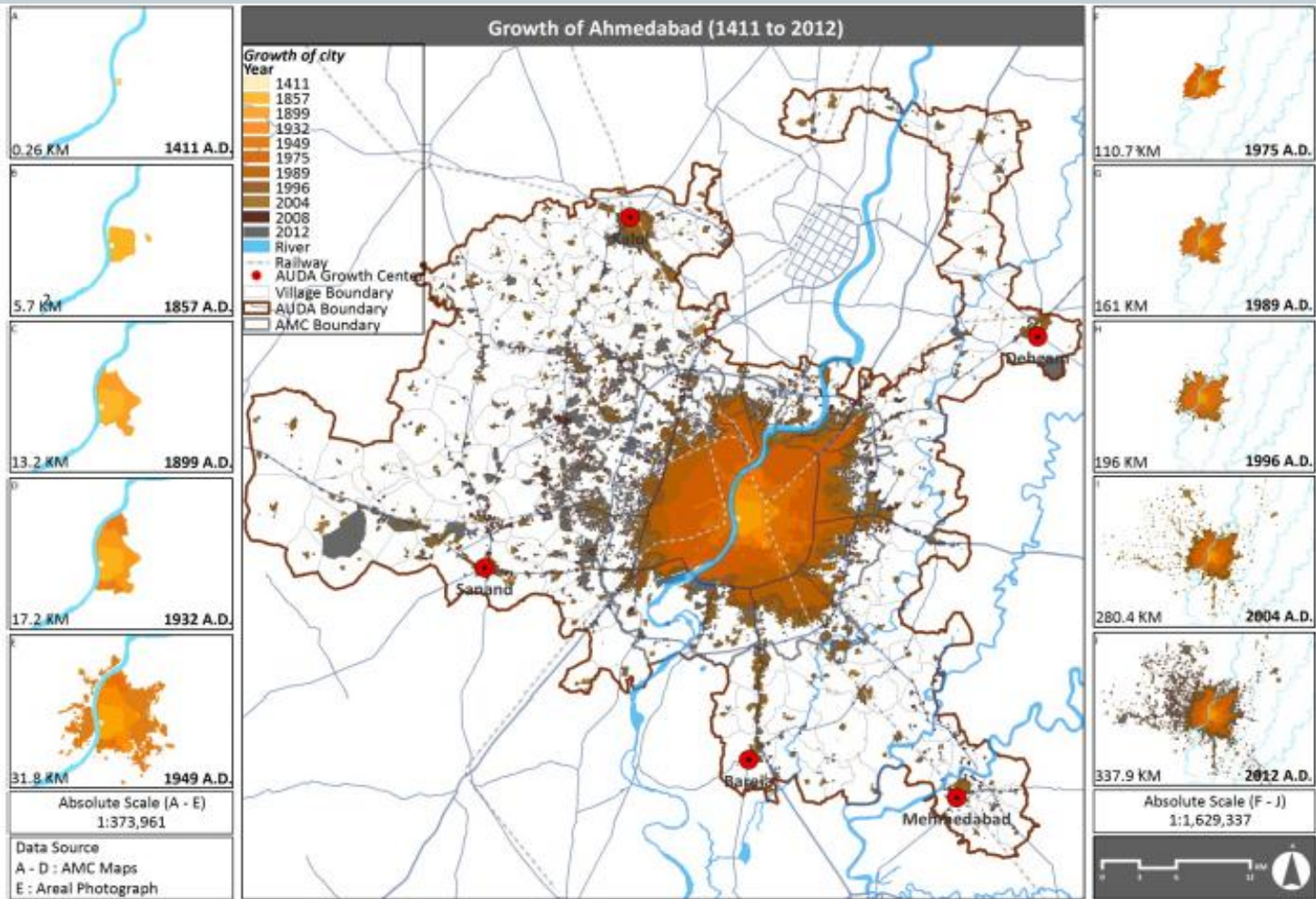
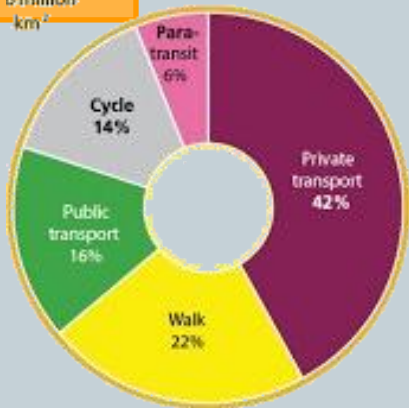
2011 | 16.3 mil. People

Urban Area: **1113.65 SqKms**

Urban Population Density: **147 PPH**

City Profile: Ahmedabad

6 million km²



Expected Population
AUDA: 8.86 million

Total road accidents
year 1888 in 2014
(250 Fatal)

total registered
vehicles: 24,00,000,

2,63,205 are
registered cars (RTO,
2012).

	AMC
Area:	466.06 SqKm
Population:	5.5 million
Pop. Density:	120 PPH

	AUDA
Area:	1877.7 SqKm
Population:	6.46million
Pop. Density:	35 PPH

Image Source:
AUDA DP-2021
Journey issues7, November 2011



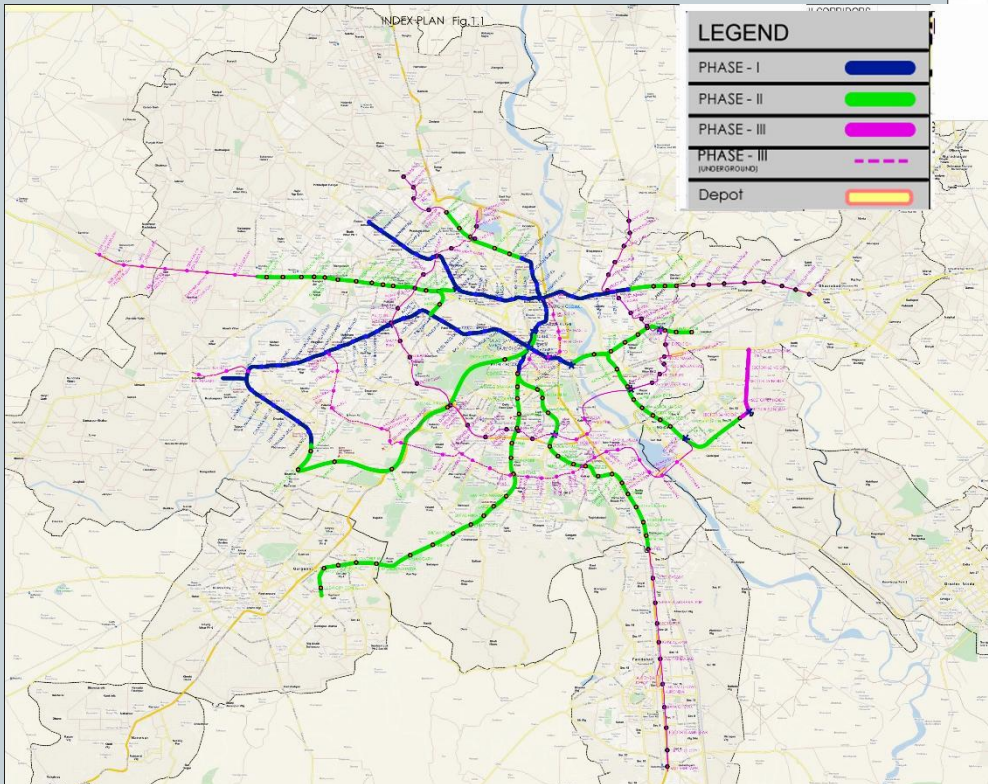
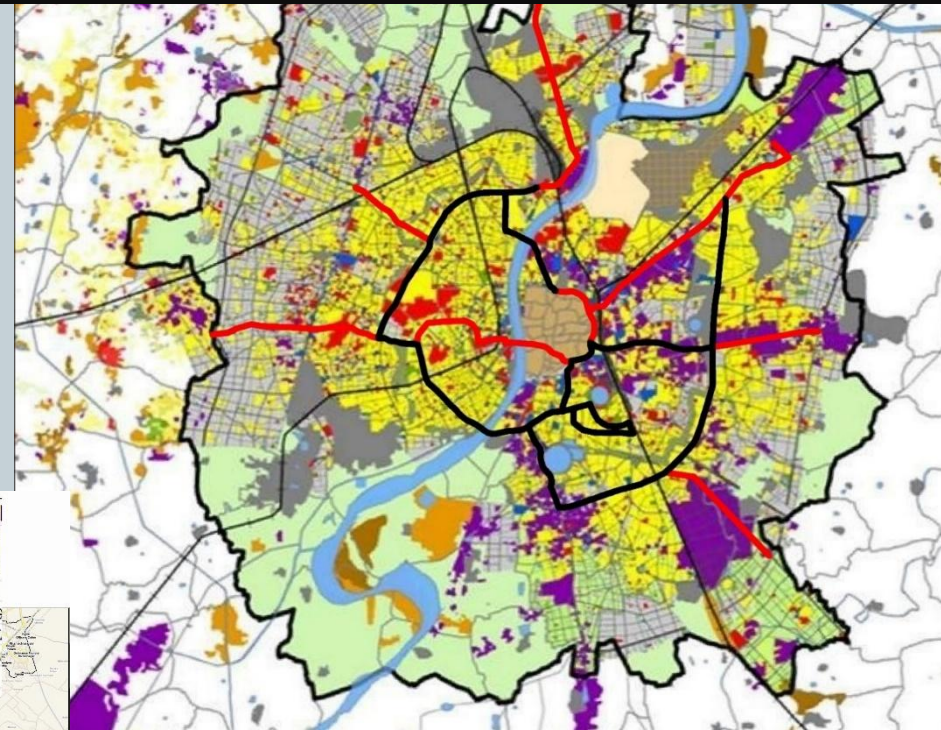
Transit Network and Influence Zone

Delhi

Phase 1 (2002-2006) and Phase 2 (2008-2011) of Delhi metro constitutes:
6 lines and **193 kms** and **145 metro** stations

Phase 3:
(2013-2015)
160.27 km

Phase 4:
Expected deadline
2021 **100 km.**



Phase 1 Pilot stretch (12.5 kms.):
Phase 1 (46.0 kms): Operational
since 2009

Phase 2 (30.5 kms.):
Operational since 2013

Ahmedabad

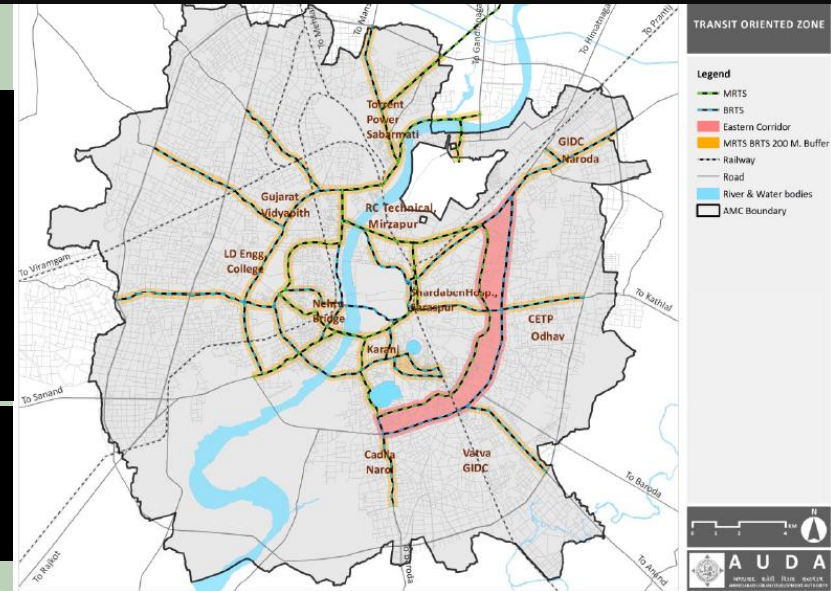
Image Source: DMRC & Neetu, 2013

Transit Network and Influence Zone

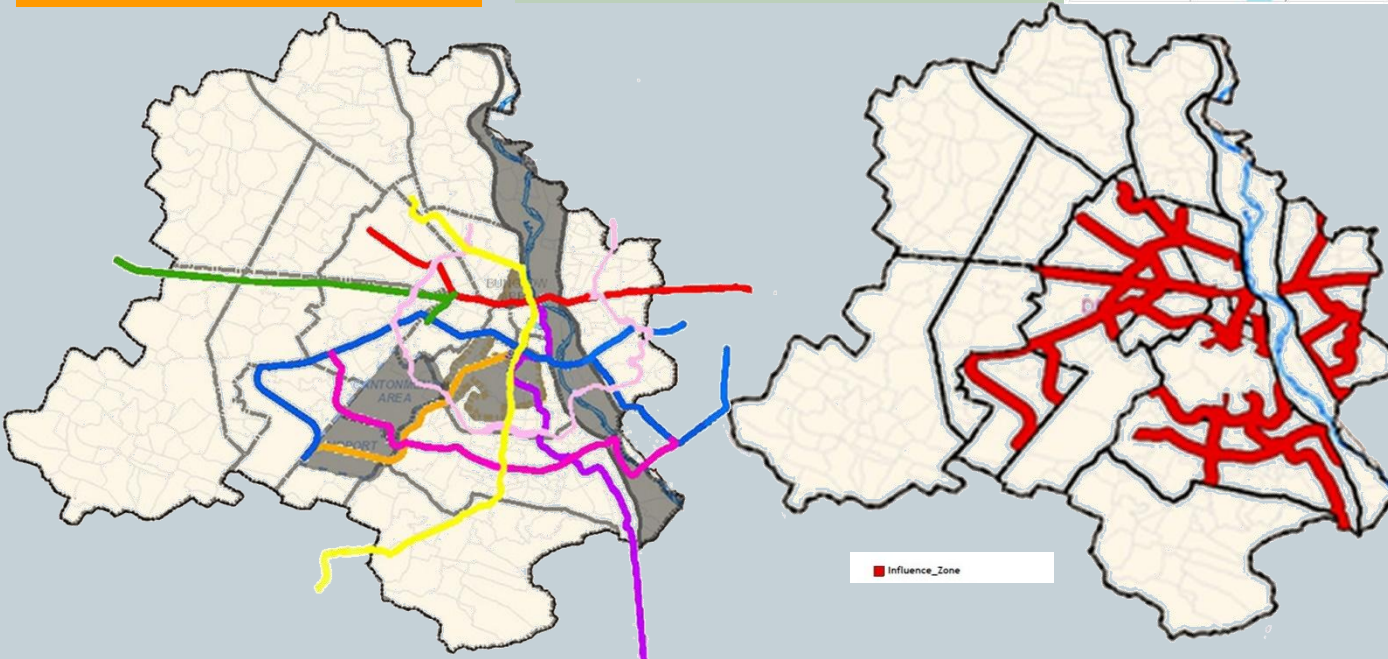
Ahmedabad

200 meters on both the sides along **BRTS, Proposed Metro corridor, eastern high density corridor** (between Narol Naroda) highway and **132 feet ring road** on eastern side of the city.

60 SQ KM (approx.)
12.8% Off AMC area.



Delhi



NOT TO SCALE

Map Source: GSDL and AUDA

500m depth on either side from centre line of MRTS.

400 SQ KM (approx.)
40% of Delhi's Urban area
FSI 4

Transit Network and Influence Zone

- Is it TOD oversupply situation?
- Can Delhi absorb that much of TOD?
- Are all stations important?
- How to decide more important location?
- How to differentiate?
Should we create zones?

**In Delhi argument of 500 and 800m
300m buffer | Land values exponentially high
300-800m Land values median and above
To serve MIG or LIG**

**Important stations can be identified on the basis
of TOD readiness.**

Both cities are considering entire corridor

**While Selecting only some stations to be
developed might have led to political
interference.**

**Ahmedabad is limiting the buffer to 200m so as
to provide limited TOZ in market.
While Delhi is proving a situation of oversupply.**

TOD Regulations

Delhi

min. area 1 Ha

Ground Coverage 40%

Roads 20%

Public Open Spaces 20%

FAR 4 | No height restriction

30% residential

10% commercial

10% social

50% as/zonal land use plan.

30% mandatory residential use has fixed unit sizes to ensure increase in number of dwelling units.

So as to increase population density.

Strict norms

Ahmedabad

No Ground coverage restrictions

Up to 60m ROW : Max. Height 45m

60m & above ROW: Max. Height 70m

FAR 4

Uses allowed in a TOZ are:

Residential-1 & 2, Assembly-1, 2 & 3, Religious, Business, Educational-1 & 2, Institutional, Mercantile-1, 2 & 3, Storage, Transport, Hospitality, Sports and Leisure, Parks and Temporary Uses. So **mixed use would be according to market.**

High FSI will only ensure **more built up** and there would be chances for **lavish unit size** in TOZ. Therefore increase in **population density is not ensured.**

More market friendly approach

FAR & Land
Distribution

Mix
use

Population
density

TOD Regulations

Affordability

Delhi

30% minimum mandatory residential,

50% 32-40sqm

50% 62 sqm

to ensure affordability for LIG/ MIG group.

Provision for **rental housing** for students, couples, migrants etc.

Extra and mandatory **15% EWS FAR** is provided.

Ahmedabad

No such strategies for affordability in Transit Oriented Zone.

separate affordable housing zone and TPS has provision of affordable housing for urban poor.

Inferences

Ahmedabad is having its separate zone for affordable housing, **concept of mixed income group of TOD** is missing from TOZ.

On other hand, Delhi is trying to provide affordable housing in TOD but with the **strict %**, it can **restrict the market to participate**.

TOD Regulations

Delhi

No front setback with active frontage

Side & rear Setbacks to be handed over to local bodies as constructed roads for the public use.

250m c/c spacing for vehicular street network. 150m c/c spacing for pedestrian network.

Ahmedabad

Setbacks to be used for pedestrian access

Thoroughfares
& setbacks

Inferences

possible **threats of encroachments** like, parking, vendors, etc. which

could block the passage

could **resist the entry important services** in case of emergency.

Image Source: UTTIPEC,2010 & AUDA DP-2021

TOD Regulations

Parking

Delhi

1.33 ECS/ 100 sqm built-up

Unbundled from property

50% of parking should be shared parking.

Ahmedabad

10% relaxation for commercial parking.

Inferences

Delhi

One size fits to all

TOD typologies: city center TOD, suburban TOD, commercial TOD, Residential TOD.

Relaxing parking norms in commercial: **Promote PT**

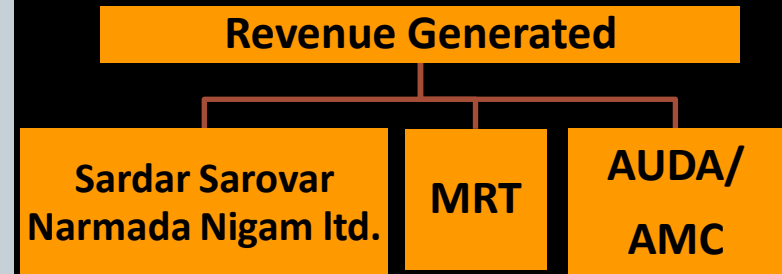
Delhi

extra FSI charges will be as per standard rate, irrespective of landuse/ use premises

to avoid any complications to change the use of FSI in future.

Ahmedabad

Additional FSI has to be purchased by payment (40% of the Jantri rates) to the Competent Authority.



Inferences

Uniform FSI rates for **commercial and residential in Delhi**, either adversely affect the affordability of residential

Or chances for govt. to loose opportunity to earn from commercial FSI.

Delhi

No identified financial model

Expected Resources:

Sale of FSI

EDC Charges

Betterment Charges

Financial
Mechanism

Ahmedabad

Implementation of TOZ can be funded by AMC and AUDA through various **mechanisms identified in LAP,**

example- sale of FSI, sale of land identified through TP Schemes, Public Private Partnership for improvement of public open spaces, advertisement rights etc.

Inferences

Though the resources of finance (direct collection and LVC) have been identified but **use of revenue** (generated from TOD), **in TOD policies/regulations is not ensured in Delhi.**

Local Area Plan

Delhi

Need of LAP has been discussed in various meeting but no work has been done on it yet.

500m Pedshed area will be marked on ZDP according to existing road network.

Ahmedabad

LAP includes

overall mobility, pedestrian accessibility, public transport, public open spaces, amenities infrastructure and enhancement of overall neighbourhood character.

East zone has been divided in 23 LAPs and West Zone has 26 LAPs.

10 LAPs from West zones; completed by AMC & AUDA.

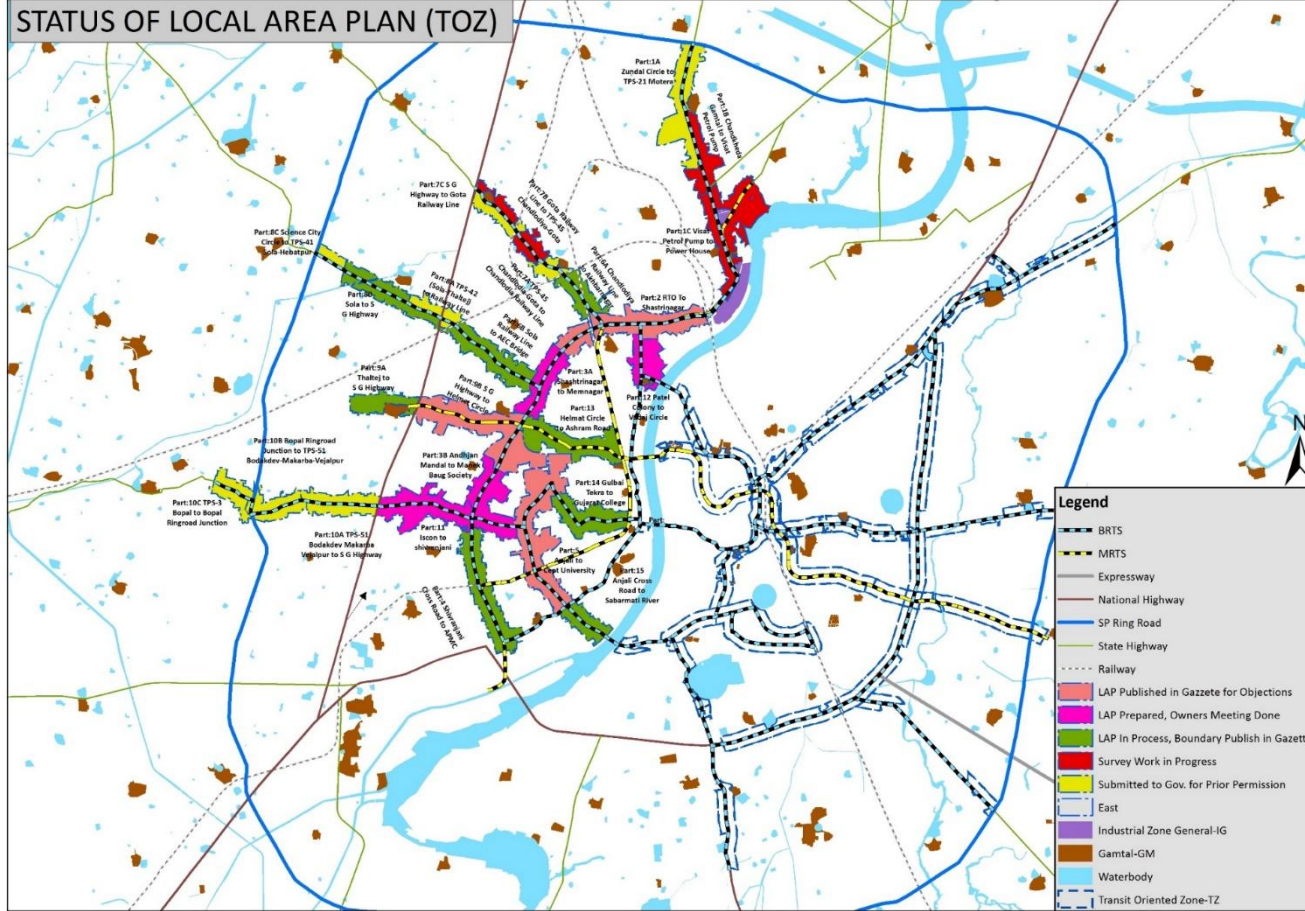
Will be submitted to Government by November 2016.

Inferences

- Delhi is not able to work on LAPs, due to lack of capability of Municipal Corporation
- Ahmedabad: smooth integration of city and local level interventions

Local Area Plan

STATUS OF LOCAL AREA PLAN (TOZ)



10 LAPs from West zones; completed by AMC & AUDA.
Will be submitted to Government by November 2016.

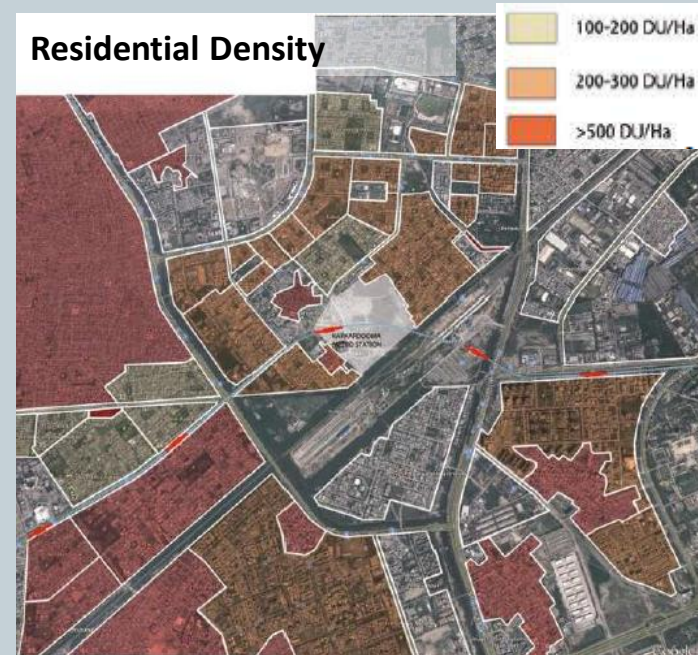
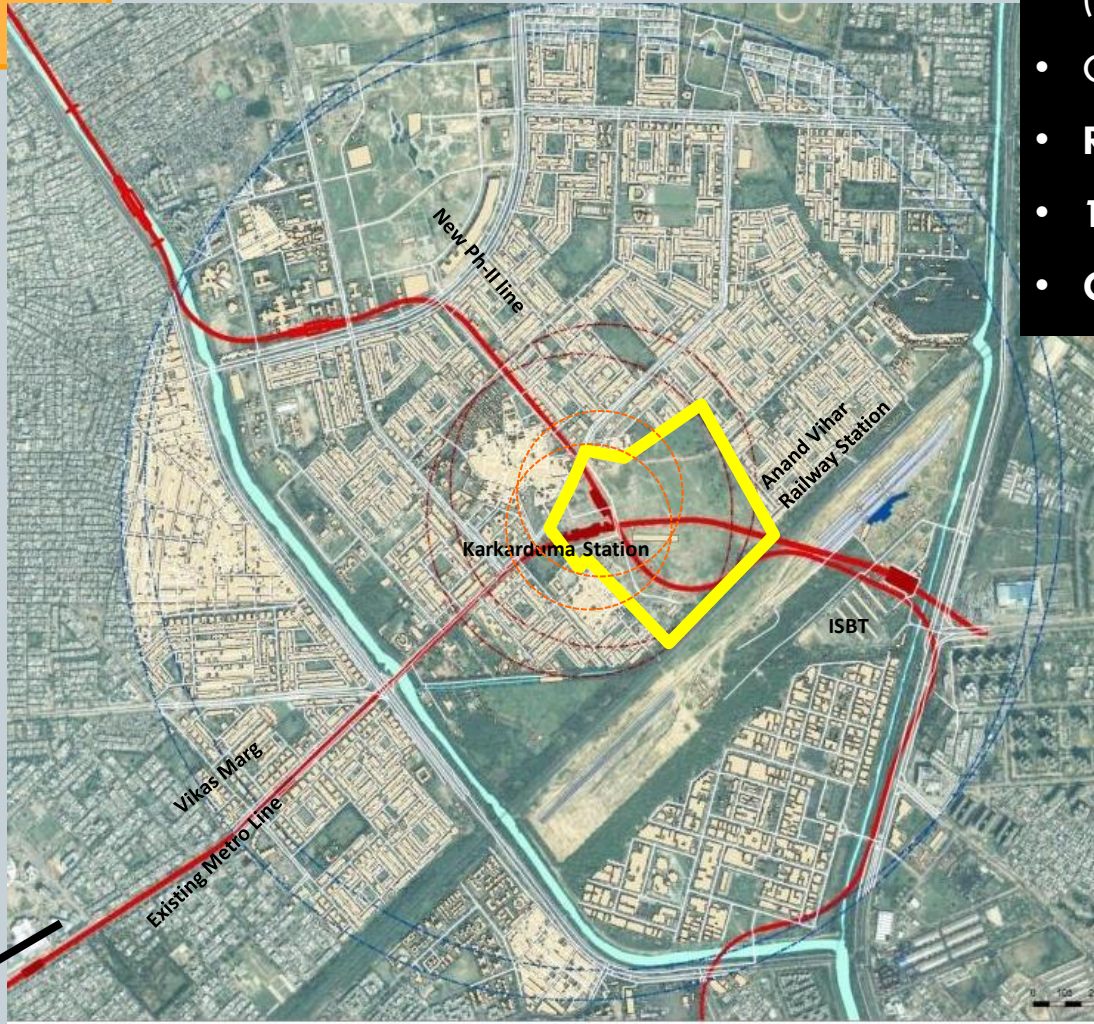
A typical Local Area Plan consist:

- **Study of existing area**
built form,
development character,
activity pattern.
- **Specific proposals & recommendation**
for improvement of street network,
public transportation infrastructure, parks,
public spaces,
physical and social infrastructure.

Image Source: AMC

Delhi: Pilot Project Karkardooma

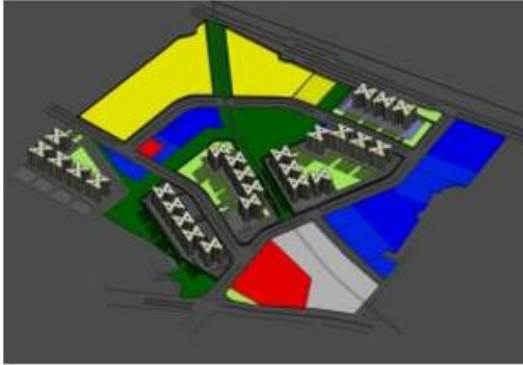
- Mixed-use at main street level Re-densifying into G+4 developer flats (with stilts)
- Gated Colonies with no thoroughfare
- **Rental: Ownership Rate = 30:70**
- 100 sqm - 300 sqm
- **Costs of home: Rs 2.2 crore +**



Source: UTTIPEC

Delhi: Pilot Project Karkardooma

Business As Usual



Business As Usual-MPD

Residential population = 14060

Residential = 81.7 % of total FAR

Neighborhood & Community level facilities = 18 % of total FAR

Usable Open Space = 15% of land area

Ground Coverage = 15 %

Roads = 15% of land area

Density = 500 pph

Design Option-1



Densification by MPD-2021

Residential population = 30,375

Residential = 80 % of total FAR

Neighborhood & Community level facilities = 20 % of total FAR

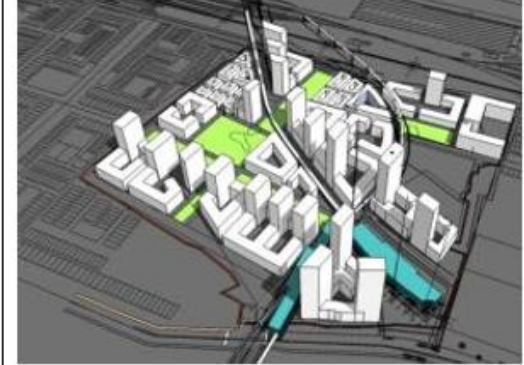
Usable Open Space = 30% of land area

Ground Coverage = 20 %

Roads = 20% of land area

Density = 1242 pph

Design Option-2



Densification by TOD principles

Residential population = 21,000

Residential = 50 % of total FAR

Neighborhood, Community & District level facilities = 25 % of total FAR

Additional Commercial = 25 % of total FAR

Usable Open Space = 20% of land area

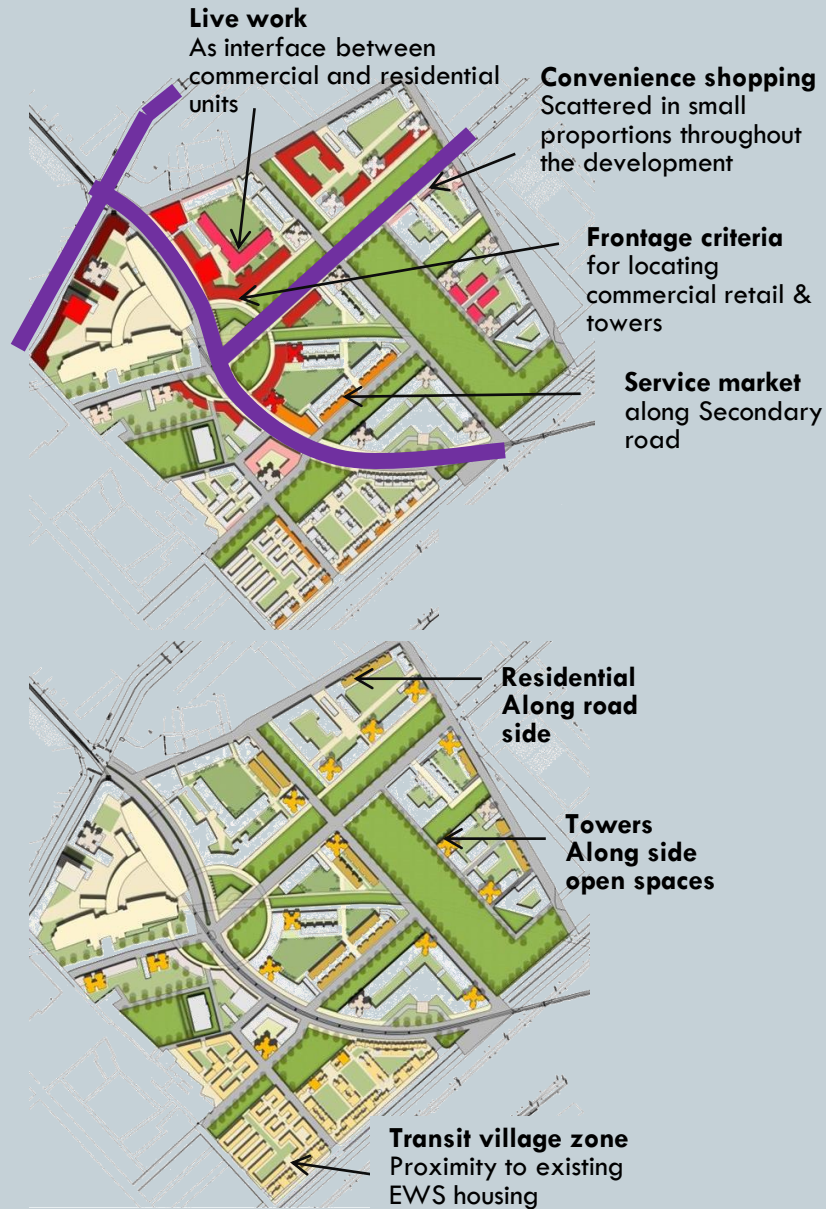
Ground Coverage = 35%

Roads = 20% of land area

Density = 830 pph

Source: UTTIPEC

Delhi: Pilot Project Karkardooma



According to JLL Study

Prime location 2 metro stations | Anand Vihar in proximity.

1 BHK: 60 lakhs

2 BHK: 1.08 Cr.

Layout proposal has been approved by governing body in principle.

MoU has been signed between DDA and NBCC

Source: UTTIPEC

Implementation Strategies

Delhi

Inclusion of **TOD concept** in **MPD 2021**, as city level policy with **urban design norms**.

Preparation of **TOD regulations** to ensure the design elements of TOD.

Preparation of **influence zonal plan**

Provision of online, georeferenced system with **single window clearance**.

Formation of **Competent Authority**

Identify and propose **pilot projects**

Ahmedabad

Inclusion of **TOD** in **AUDA DP-2021**, as city level policy with **modifications in regulations**.

Adding provision of **Local Area Plan** in **GTPUD Act**.

Preparation of **LAP by AMC and AUDA** with the help of consultants.

Ensuring any **redevelopment project** in **TOZ** (to avail 4FSI) would follow **LAP**.

Identification of any **TOD supporting project** in **LAP**.

AMC & AUDA would be responsible for approval of any such project.

Inferences

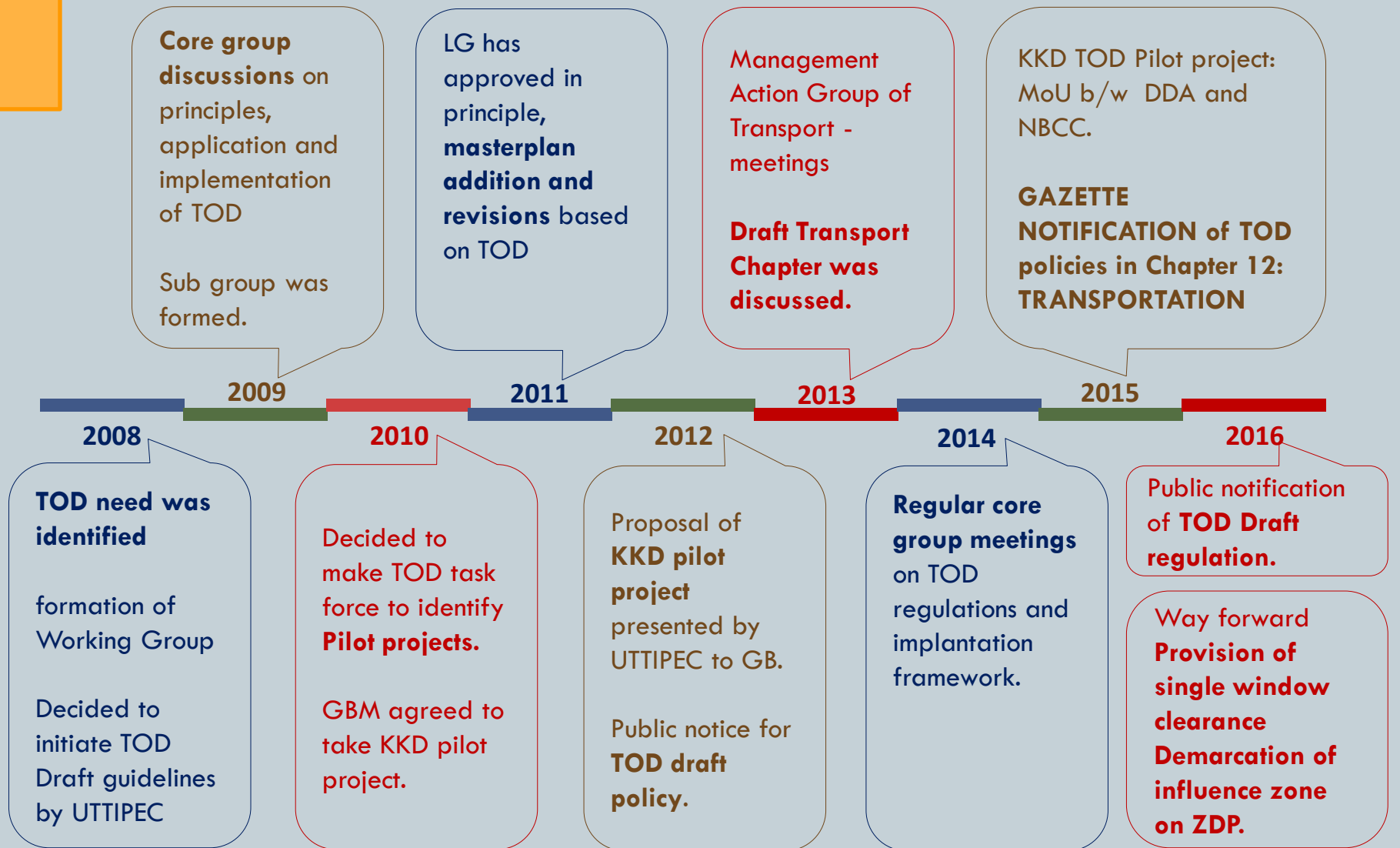
Delhi TOD **policies and urban design guidelines** have been deliberately discussed and proposed **clarity in implementation process is still not visible.**

Approval process, Single window clearance, influence zone on ZDP **need more clarity.**

While Ahmedabad has **started on ground development** along BRT with less changes in approval process.

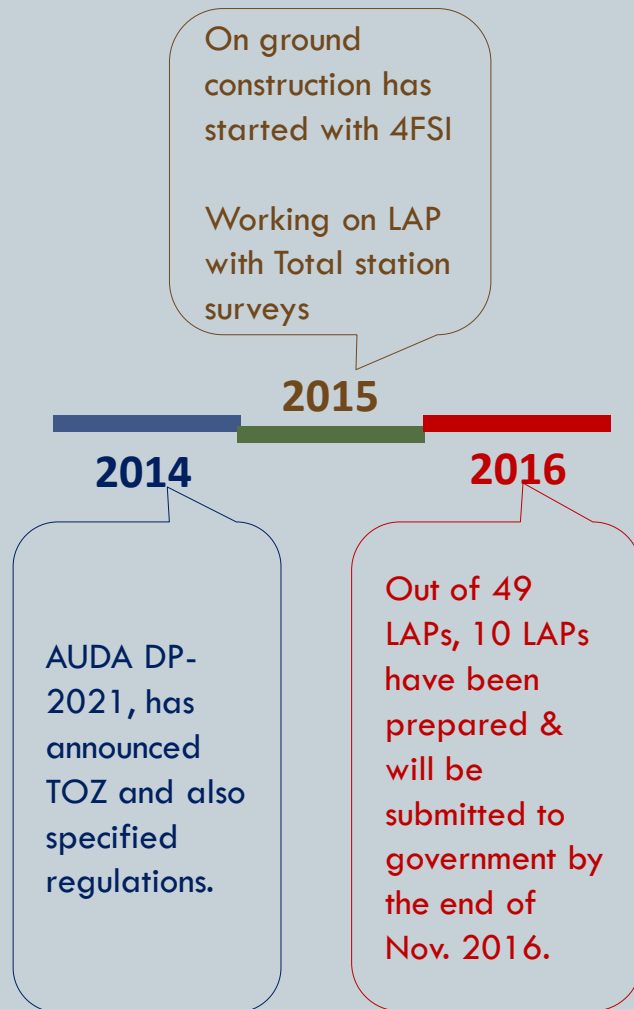
Integrated working of AMC and AUDA is major supporting factor in Ahmedabad.

TOD in Delhi: From concept to Commission



Source: MOM GBM UTTIPEC

TOD in Ahmedabad: From concept to Commission



Inferences

In Delhi

- **targets** were not defined.
- **TOD as Desk exercise**
- **lack of integration**
- **lack of political will**
- **Misinterpretation**

While Ahmedabad is having a **defined targets** collaboration of AUDA and AMC. On ground **implementation of projects** (with 4FSI) has been **started**. (**5 lakh Sqm** built-up approved in TOZ by AMC)

On other hand in Delhi, in the **absence of TOD regulations**, on ground **development has not been started**.

Conclusion

2 CITIES 2 APPROACHES.

- **Delhi centralised approach** with **stringent norms** while **Ahmedabad** is having more **market friendly approach**.
- Delhi TOD's **institutional framework** involves: Engineering Dept, (concerned local body) Delhi Urban Arts Commission, Dept. of Urban Development GNCTD, Dept. of Transport GNCTD, Planning Dept, DDA, Land Management, DDA, Delhi Jal Board, Delhi Fire Services, Dept. of Power GNCTD, Airport Authority of India, Delhi Urban Shelter Improvement Board GNCTD, Public Works Dept. GNCTD, and National Monument Authority.

While in Ahmedabad, **AUDA & AMC are working in collaboration** on TOD.

Involvement of private sector in collaboration is a key factor for pace of implementation of TOD in Ahmedabad.

- **Delhi: Pilot approach** while **Ahmedabad: LAP approach and guided approach**.
- **Delhi: “one size fits to all”** while **Ahmedabad: location efficient development**.
- There is a need for Delhi to speed up the implementation of TOD.
- Ahmedabad with the help of TPS and LAP, able to **intervene successfully on local level** to ensure TOD built form over a time while Delhi has no such tool to mechanise land.

Due to **arrangement of city level strategies as well as local level interventions and coordinated working of AUDA and AMC**, **Ahmedabad is proactively promoting TOD in city.**

Thank You