Transit Oriented Development in India

Mukund Kumar Sinha, Ministry of Urban Development Government of India
High Capacity Transit Corridors

Metro Rail Operations

300 + kms
High Capacity Transit Corridors

Metro Rail Operations

300 + kms
High Capacity Transit Corridors

Metro Rail Operations

300+ kms

BRT Operations

250 kms
Earliest forms of TOD in India

Mumbai

Delhi

Kolkata

Hyderabad

High Density Mixed Land use along Main Arterial/ Transit Corridor
Navi Mumbai – The 1\textsuperscript{st} Modern TOD in India

- Started Building in 1992, to accommodate the growing population of Mumbai
- Spread over 344 sq. km. of land, including a 150 km-long creek line
- Close to the world's 10th largest & India's largest seaport, Jawaharlal Nehru Port (JNPT)
TOD in India
Ahmedabad – Station Level TOD
- Population: 5,570,585 (2011)
- Area: 466 Sq. Km
- Gross Density: 12,000 person / sq.km

- A special tax – “betterment charge” – on property within 250 m of transit corridor
- Increased FSI along transit corridors- 1.8 to 3.6/ 4.
- Additional 2.2 FSI To Be Purchased From ULB
- 10% reduction in parking for commercial uses
- Income from Sale of FSI/Concessions to be Part of Transport Fund
After

Before
Kochi – Station Level TOD
500m TOD Area along Metro - Kochi

Edapally Station Influence Zone

Development around Edapally Station
- FSI in TOD Area – 3
- Mixed Land Use Development
- Multimodal Integration
- NMT and Place Making

- Land Value Capture
  - Sale of Additional FAR
  - Metro Cess on Property Transactions
  - “Accessibility Tax” as part of property tax
Delhi – Area Level TOD
• Population: 11 million (2011)
• Urban Area Density: 11.3 Persons/ Sq. Km

• TOD policy notified in July, 2015
• Applicable: 500 m belt along Metro corridors
• Covers 20% of Delhi urban area
• Exceptions:
  • Lutyens Bungalow Zone
  • Civil Lines bungalow zone
  • Zone-O (Yamuna river bed)
Round the Clock Activity Streets

Better Light, Ventilation & Quality of Life

Land Distribution

50% Buildable Land Area

ROADS

20%

GREEN OPEN SPACE

30%

Mixed Use - reduced Travel Needs

Residential (1000 sq.ft. or less) 30%
Public Facilities (schools, hospitals, social infra.) 10%
Commercial 5%
FLEXIBLE USE 55%
Socially inclusive communities – sharing of amenities

finer road networks created for shortcuts on foot

Before

After
Multi-modal integration with pedestrian priority

Equitable allocation of space for all modes at stations

Before

After
Mumbai – Area Level TOD
Population: 12.4 million
Urban Area Density: 31,700 persons/ square kilometre
Influence zones along Rail corridor in Mumbai Metropolitan Region

- **FSI**
  - Premium FSI from 2 to 8

- **land amalgamation**
  - Min. 1Ha plot

- **Density**
  - 400Du/Ha to 1000Du/Ha

- **Mix Use**
  - At least 20% to be non-residential

- **Inclusionary housing**
  - At least 30% to be LIG
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<td>Ensure Connectivity and Manage Vehicular Traffic and Parking</td>
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<td>Create Pedestrian and NMV-Oriented Design</td>
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<td>Make each Transit Station/ Corridor Area a “Place”</td>
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Conceptual TOD along Transit Corridors

300m Buffer (5mins walk)
500m radius or (5mins walk)

Transit Corridor Area
Transit Station Area

Transit Corridor
Transit Station
Navi Mumbai – City Level TOD
Seawoods in Navi Mumbai

- Similar to Canary Wharf in London, IFC in Hong Kong, Shinjuku in Tokyo
- Being Implemented by L&T
Features of Seawoods

Total Area: 40 acres
Proposed built-up area 33,90,477 sq feet
- mall 5,08,633 square feet,
- offices 26,78,799 sq ft and
- hospitality / service apartments 2,03,453 sq ft
Naya Raipur – City Level TOD
“To develop a transit supportive framework that supports a series of seamless self-sufficient neighbourhoods in Naya Raipur each with a distinct character- linked with sustainable mobility options”. 
Planning Strategy

• Mixed Use Core
• High Density Transit Corridor
• Development as per the contours. Water network has been retained.
• Hierarchy of greens connecting amenities within walkable distance
Designing a New City for Sustainable Mobility

- Multimodal Transit Interconnected Street Pattern
- Mixed Use Development
- Walkability
- Compact Development
- Urban Place making
- Streetscape Design
TOD Guiding Principles in India
TOD Components

- Multimodal integration
- First and Last mile connectivity
- Interconnected street network
- NMT Network
- Complete streets
- Housing diversities
- Informal sector integration
- Managed Parking
- Optimised densities
- Traffic Calming
- Mixed land use
TOD Support Principles and Tools

Engage Private Sector

Safety & Security
  - Technology Integration
  - Right size Infrastructure

Barrier free environment
  - High Quality Transit System

Preserve and Create Open Spaces

Land Value Capture

Green buildings and Infrastructure

Mechanisms
  - Issue TDR in lieu of compensation for land acquisition
  - Cess on extended benefit of increased FAR for all properties within specified TOD area
  - Imposition of Vacant Land Tax, Un-utilised FSI in specified TOD area
  - Cess & surcharge on market value of land/building
Thank you!