INTEGRATED LAND USE AND PUBLIC TRANSPORT PLANNING

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STRUCTURE

- Overview
- Land use and Public Transport Planning in India
- Case of Ahmedabad city
OVERVIEW

Land use and transport are intricately linked

- Land use/activity distribution determines the demand for transport
- Transport supply influences land use/activity distribution

Integrated land use transport plans help:

- promote compact development (TOD) supported by rapid transit system
- reduce trip lengths and veh-kms
- boost transit ridership, thus increasing its share over private trips
India Rapidly Urbanising and Economic Levels Improving

- 31% live in Urban Areas
- 69% live in Rural Areas

2011:
- Urban population: 377mn
- Urbanization level: 31%

2031:
- Urban population: 600mn
- Urbanization level: 40%

Urban India will drive a near fourfold increase in average national income

- GDP growth: 6.5% to 7.4%
- Population growth: 1.3% to 1.1%

Source: India Urbanization Economic Model, McKinsey Global Institute analysis

1. MoUD, NIUA, India’s Urban demographic transition 2011
URBAN SPRAWL

- Growth extending beyond municipal areas
- Haphazard and low density
- Estimated additional land requirement is 11 mn hectares for 2031

Source: CoE-UT, CRDF
Sprawl and/or leap-frog development
- increases dependence on private vehicles
- Increased trip lengths and veh-km
- Congestion, accidents, GHG emissions

Development not coordinated with public transport investments

May lead to provision of transport infrastructure in areas not developable or desirable for development.

**IMPACTS**

\[ y = 9.1695x^2 + 15240x + 461913 \]

\[ R^2 = 0.9701 \]

Source: CoE-UT, CRDF
No mandated linkage between CMP and Development Plan

- Not prepared concurrently
- No coordinated land use transport strategies developed
- CMP strategies often not implemented
ELEMENTS OF INTEGRATED LAND USE TRANSPORT

- Strategic Alignments supporting the urban structure
- Complete Networks and Complete Streets
- Integrated Multimodal Transport & Transit Oriented Developments/ Redevelopment in city core areas
- Accessibility Improvements - Local Area Plans

Source: CoE-UT, CRDF
INTEGRATED MOBILITY PLAN 2021, AHMEDABAD

- Development Plan (DP) 2021 developed along with the Integrated Mobility Plan (IMP) for Ahmedabad
- Land use transport integration strategies developed concurrently
- Network planning concept at 3 levels proposed as a part of IMP adopted in DP
  - Strategic alignment
  - Complete network and streets
  - Local Area Access Plans
- PT Network and TOD zones proposed as a part of IMP integrated in the DP proposal.
THREE TIER DEVELOPMENT APPROACH

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

Compact City Plan - developing strong ring and radial as city wide 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.

Source: CoE-UT, CRDF
POPULATION DISTRIBUTION

Scenario 1  Scenario 2  Scenario 3

Source: CoE-UT, CRDF
EMPLOYMENT DISTRIBUTION

- Scenario 1
- Scenario 2
- Scenario 3
PUBLIC TRANSPORT NETWORK

Source: CoE-UT, CRDF
TRANSIT ORIENTED ZONES

BRTS Length - 120.44 Kms  Buffer Area - 40. Sq.Km
MRTS Length - 40.6 Kms
CBD Area 1.2sqkm

Source: AUDA
TRANSIT ORIENTED ZONES

Source: AUDA
Sanctioned Development Plan 2021 (second revised)

Published in 2013
Sanctioned in 2014
AUDA Area 1866sqkm

Source: AU DA
COMPLETE STREETS

Transit Ready Streets

- Planning for Future
- Reserved space for PT

Source: CoE-UT, CRDF
LOCAL AREA ACCESS PLANS

Around all rapid transit stations: Metro / Regional rail / BRT

Legend:
- BRTS
- Proposed BRTS
- Bus Stops
- Recreation places
- Schools
- Colleges
- Hospitals

Source: CoE-UT, CRDF
TRANSIT ORIENTED DEVELOPMENT (TOD) POLICY — 2017

- Growth management strategy – compact cities
- Transforming horizontal expansion to vertical expansion
- Transit Oriented Development is the strategy to integrate Land-Use and transport

Aims to develop planned sustainable urban growth centers, having walkable and livable communes with high density mixed land-use.

- Promoting PT and NMT
- Reducing to travel long for other purposes (shopping, entertainment etc.) by enhancing mixed land use.
- High density development along transit
SUMMING UP

- Land use transport integration desirable strategy to ensure sustainable development
- Planning processes may not allow coordinated land use transport strategies
- Ahmedabad’s Development Plan and Transportation Plan coordinated – alignment of development areas with transit and focus on local area access plans
- Policy response of the Government of India for transit oriented development
Thank you