

Challenges on Implementation of Multi modal integration in Chennai City – Chennai Metro Rail Perspective



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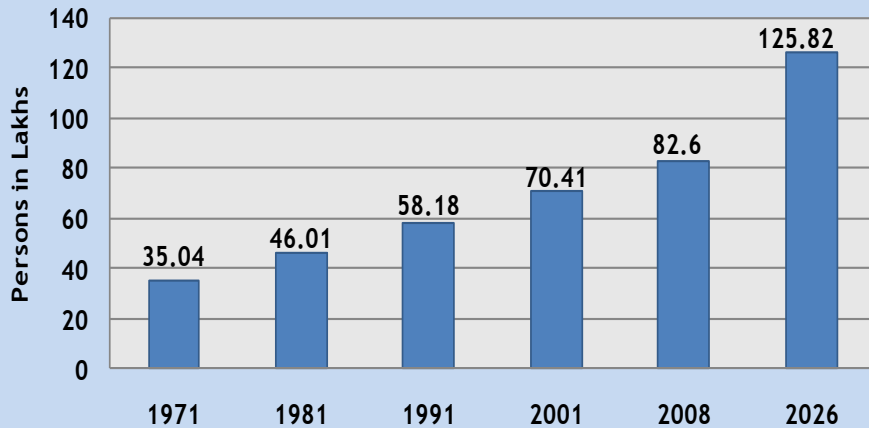
Chief General Manager (PF)
Chennai Metro Rail Limited



Chennai Metro Rail Limited

Chennai Today

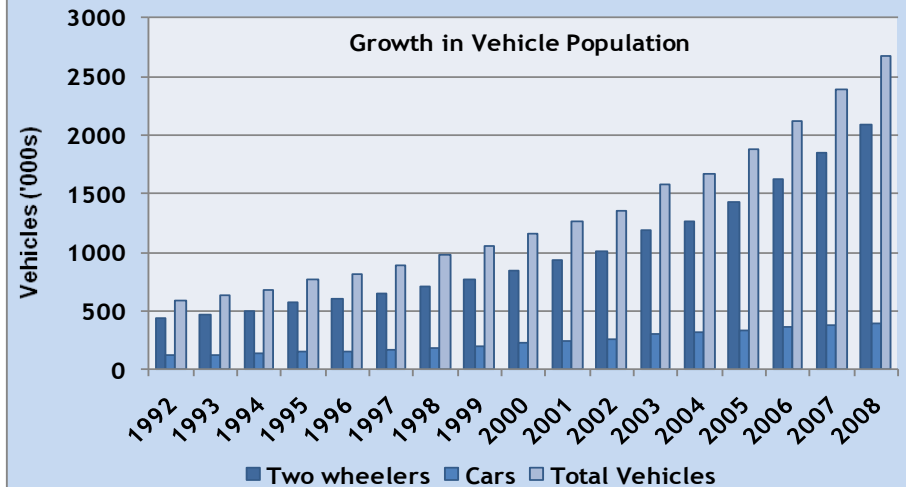
Population Growth in CMA



- Total vehicle population : 33.75lakhs (2011)
- Registered vehicles increased 5 times during last 16 years
- Around 2 lakh vehicle registration per year
- Compound Annual Average Growth Rate (CAAGR) 12.5%

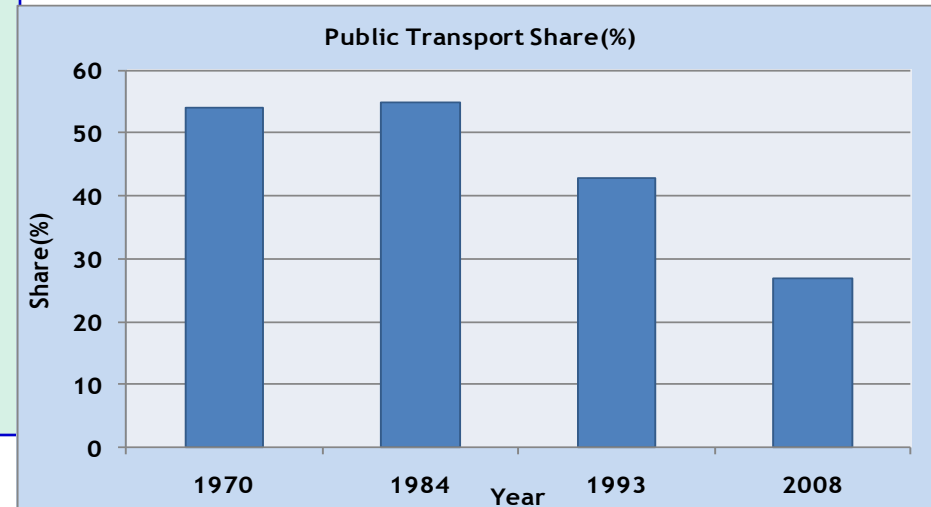


Growth in Vehicle Population



Public Transport

- Bus/ Lakh Population remained almost stagnant (1981-2008)
- Metropolitan Transport Corporation (MTC) Operates
 - Bus Routes - 640
 - Fleet Size - 3300
- PT Share Drastically reduced from 54% (1970) to 31% (2008)
- Bus – 58 lakhs trips/day
- Sub urban Rail – 9 lakhs trips/day
- MRTS – 1 lakhs trips/day



Modal Share – Other Metro Cities

City	Public Transport
Mumbai	45%
Kolkata	54%
Delhi	43%
Bangalore	35%
Hyderabad	35%
Chennai	31%

City	Walk	Cycle	Two Wheeler	Car	IPT
Mumbai	27%	6%	7%	8%	7%
Kolkata	19%	11%	4%	8%	4%
Delhi	21%	12%	5%	14%	6%
Bangalore	26%	7%	17%	8%	7%
Hyderabad	22%	9%	19%	9%	7%
Chennai	22%	9%	20%	10%	8%

Source: MoUD, Traffic & Transportation Policies and Strategies in Urban Areas in India

CMRL Network

- Chennai Metro Rail - Improve the Public Transport Share With the Mission Convenient, Fast, Economical, Reliable

- Total Length – 45.1 Km
- Corridor 1 – 23.1 Km
- Corridor 2 – 22.0 Km
- No of Stations – 32 Nos
- No of Interchanges – 2 Nos

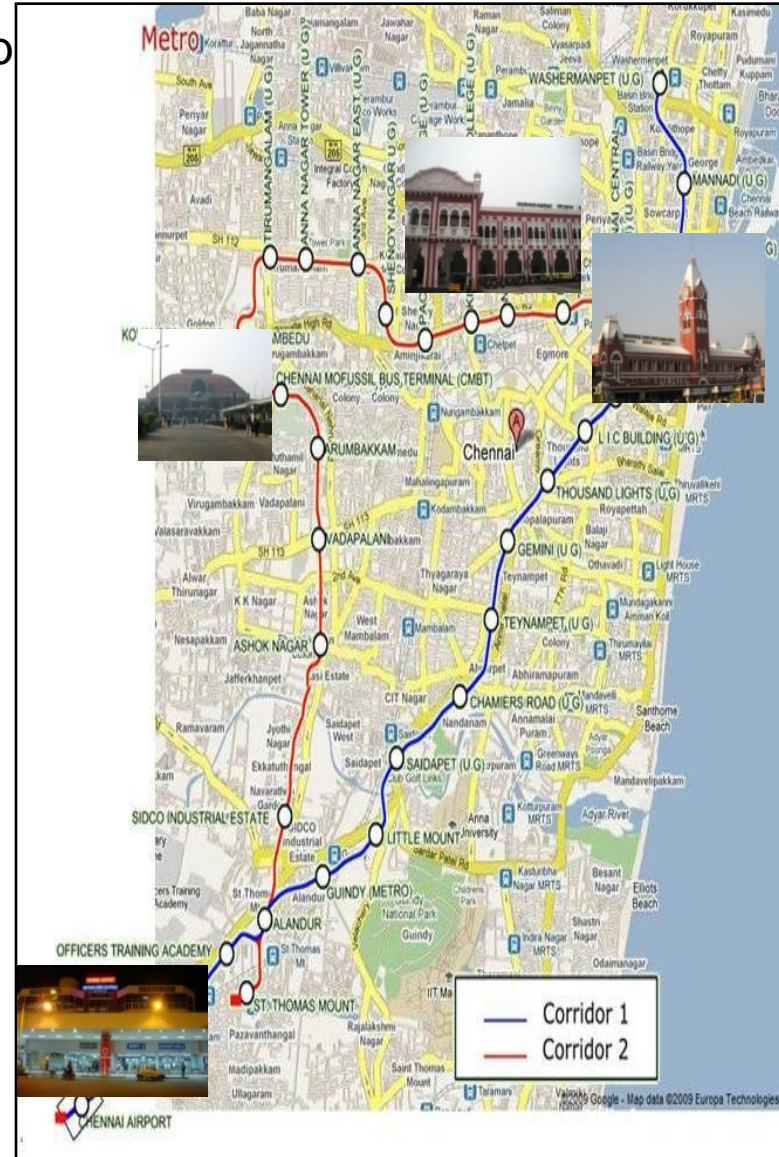
- It is running along the major arterial roads and connecting important places such as Airport, Chennai Central station, Ignore station, Chennai Mofusill Bus Terminus (CMBT), etc.

- About 55% of the corridors in Phase I is underground and the remaining elevated



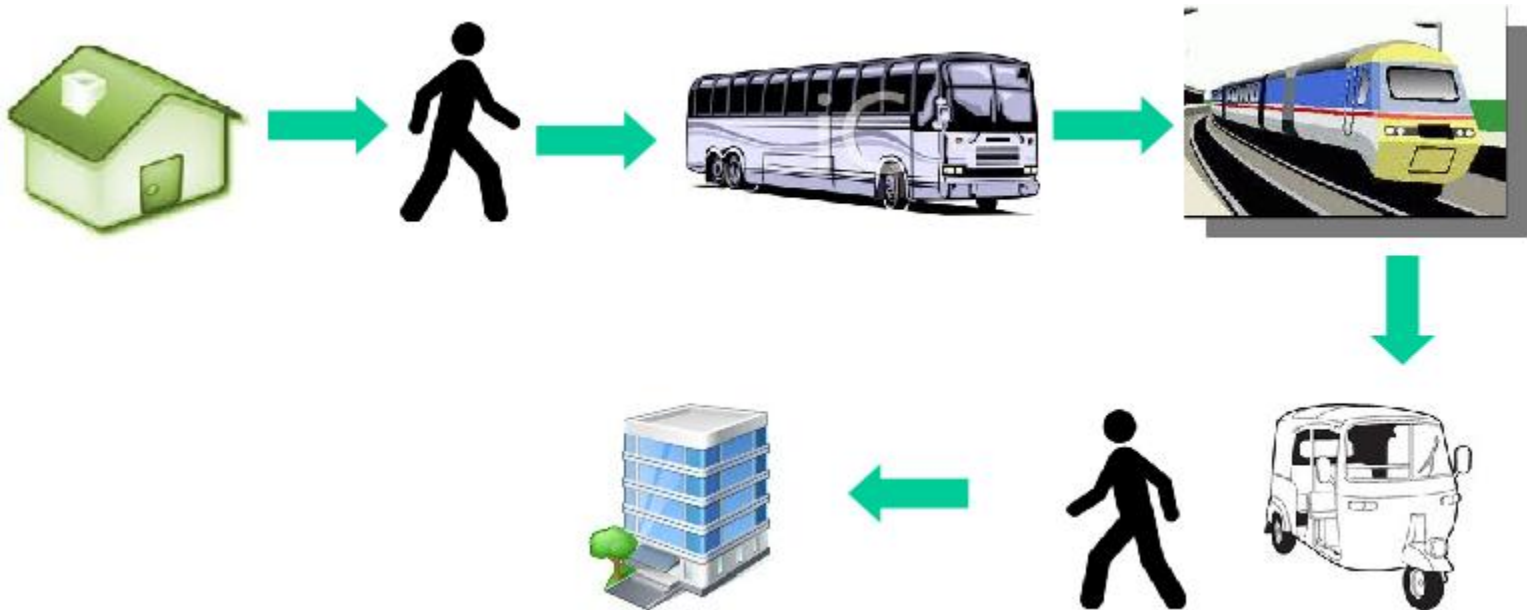
Inter Modal Integration with Public Transport

- Washermenpet – Link with Washermenpet suburban station & Mini Bus Station
- Central – Interchange with Central SR, Moore Market Suburban, Park Station and MRTS station
- High Court – with Broadway bus stand
- Egmore – Intercity and Suburban
- CMBT – Intercity Bus Terminus
- Alandur & Central – Interchange
- St.Thomas Mount – with MRTS, Suburban
- Airport



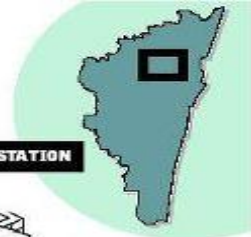
MMI - Concept

- Integrating various available modes of transport to make it complementary to each other modes so as to ensure the optimal functioning of the existing transportation system
- Providing easy access across various modes at the Metro stations –Seamless Travel

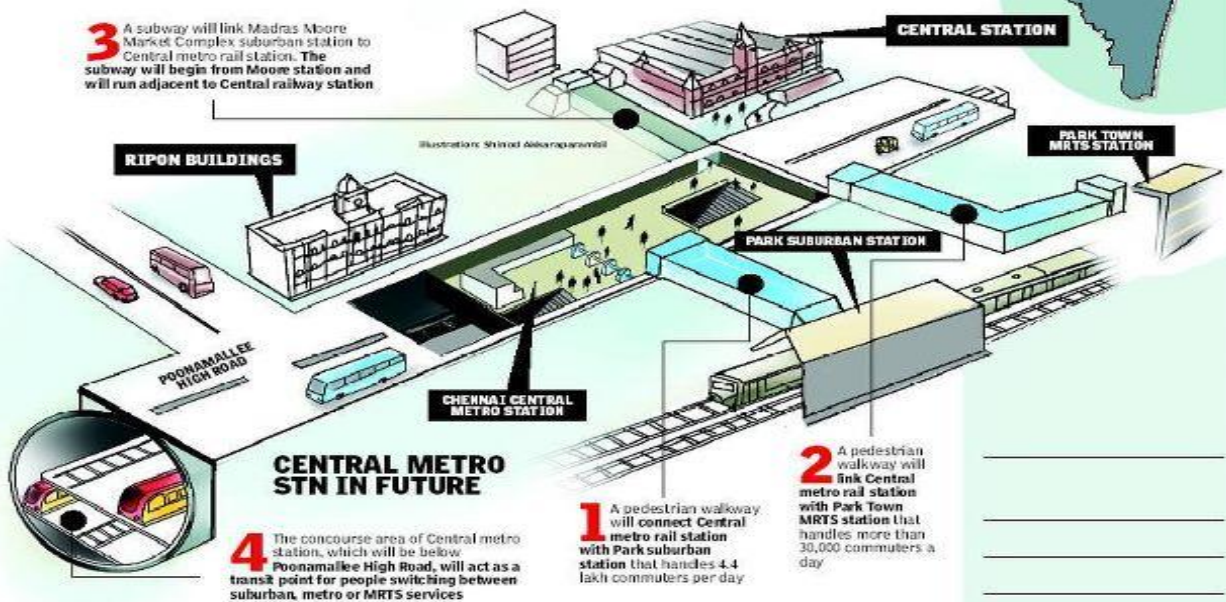


- Physical Integration
 - Integrating Various Modes through Physical structures
- System Integration
 - Integrating Various Modes through System such as Common Ticketing System, unlimited passes





3 A subway will link Madras Moore Market Complex suburban station to Central metro rail station. The subway will begin from Moore station and will run adjacent to Central railway station



CENTRAL METRO STN IN FUTURE

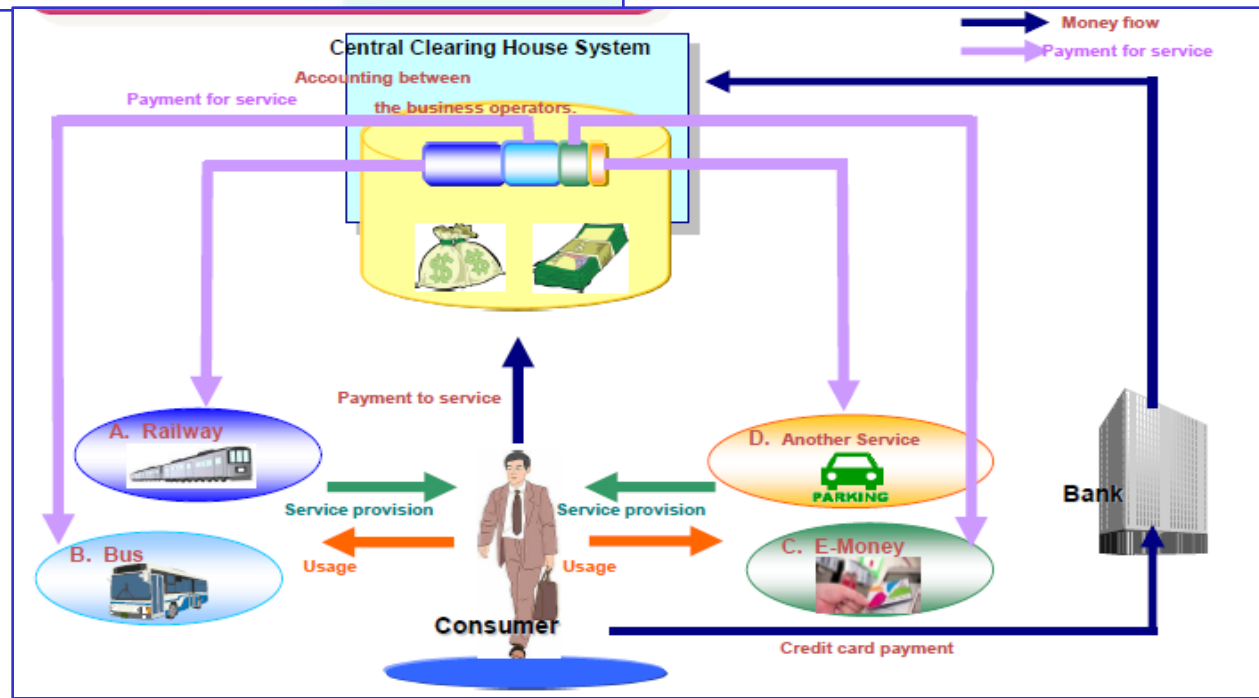
4 The concourse area of Central metro station, which will be below Poonamallee High Road, will act as a transit point for people switching between suburban, metro or MRTS services

1 A pedestrian walkway will connect Central metro rail station with Park suburban station that handles 4.4 lakh commuters per day

2 A pedestrian walkway will link Central metro rail station with Park Town MRTS station that handles more than 30,000 commuters a day

Physical Integration

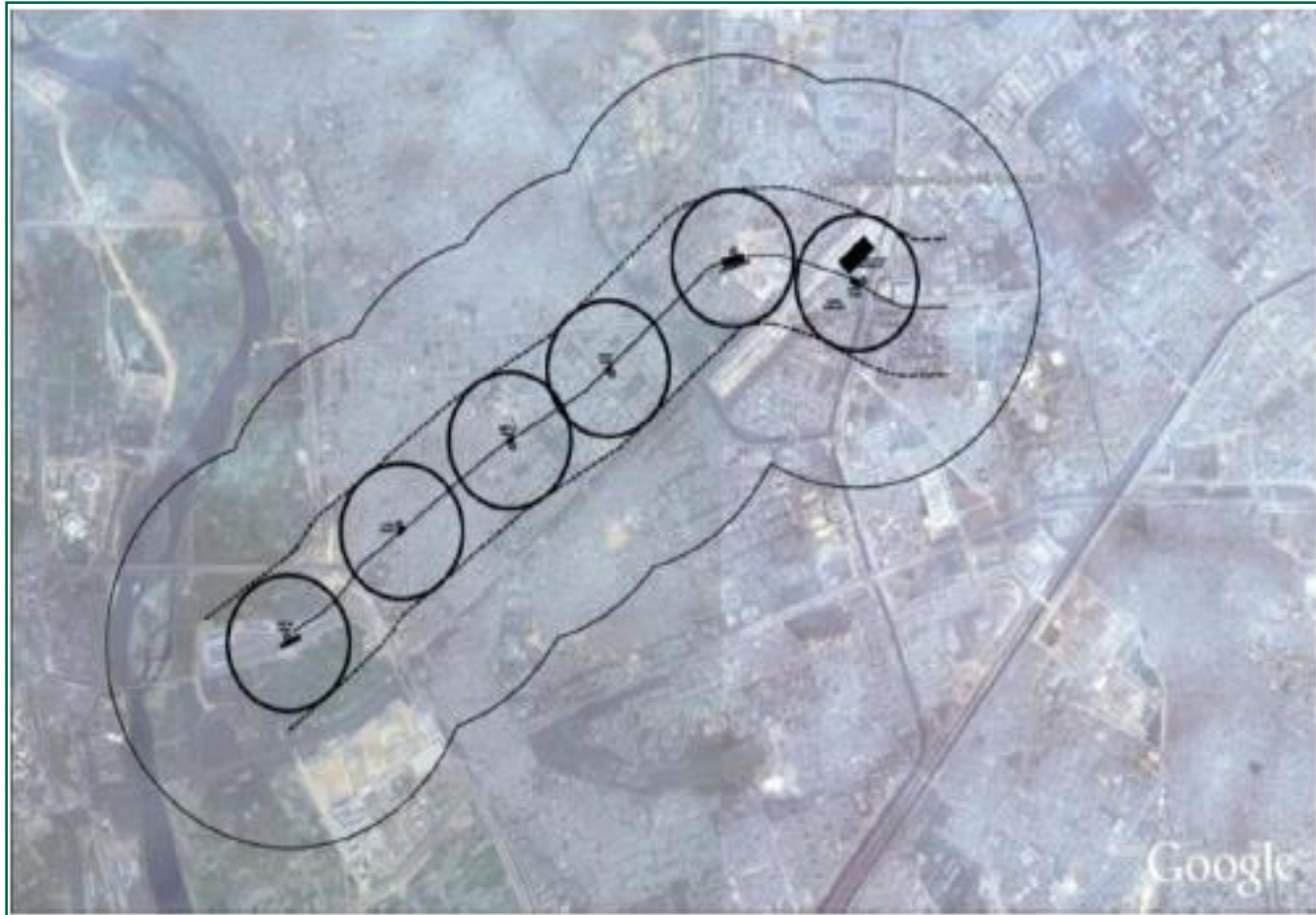
System Integration



- Identification of Station Influence Area
- Pedestrian access/dispersal proposal
- Public Transportation pick up & drop off facility
- Intermediate Public Transportation pick up & drop off facility
- Identification of Feeder routes
- Parking Demand Assessment
- Enhance existing connectivity
- Identification of Missing Links
- Preparation of Concept Plan

Metro Station Influence Area

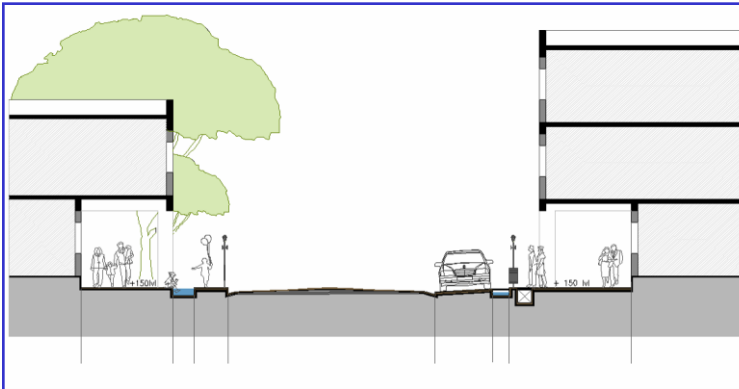
- Immediate Influence area - 500 m around the station
- Broader Influence area - 2.5 Km and 5.0 Km on either side



Pedestrian & PT/IPT Pick up & Drop off

- Predominant Metro Users - by Walk
- Mapping Pedestrian Generation/Attraction locations
- Assess existing pedestrian demand and supply
- Pedestrian Infrastructures – Footpath/FOB

Access Mode	Share
Walk	40%
IPT	21%
Bus/Feeder Bus	19%
TW	15%
Others	5%



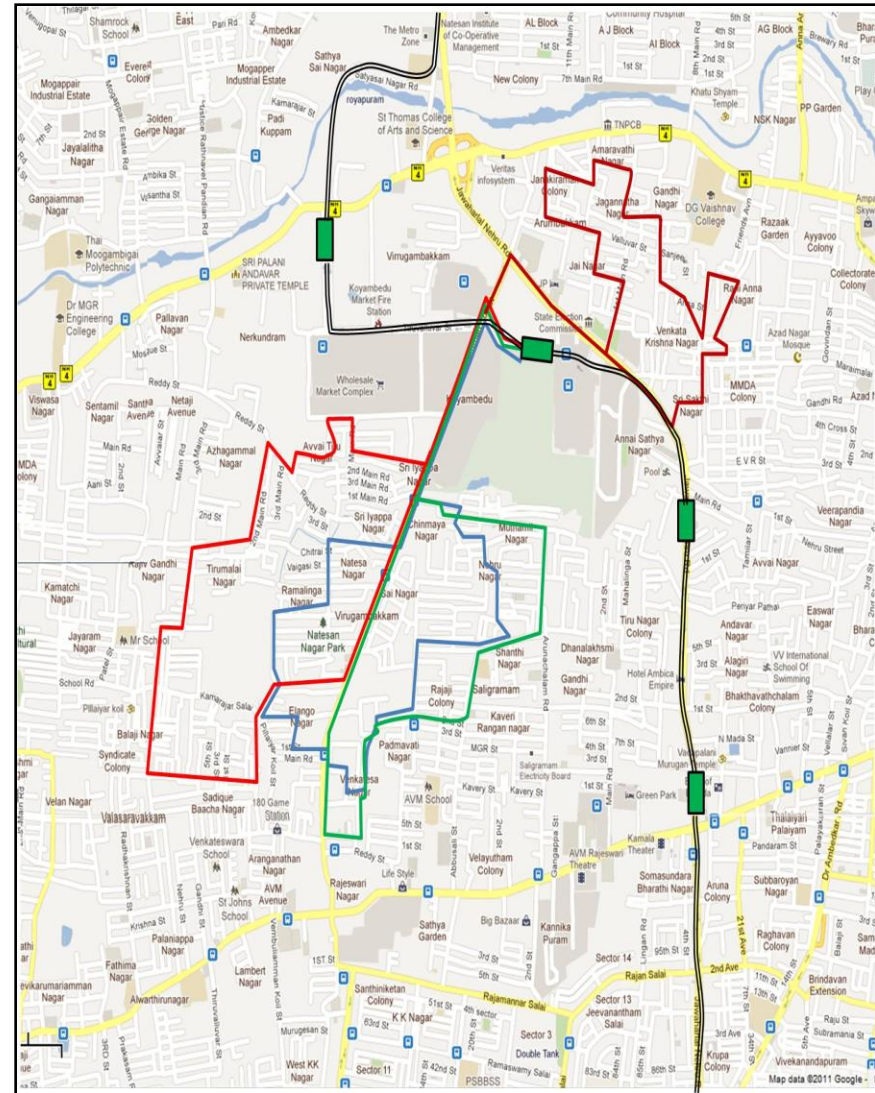
Feeder Services

Two Stages:

- MTC Route rationalization
- Metro Feeder Services – Mini Buses/TATA Magic

S. No.	Distance	Number of	
		Routes	Services
1	0.5 to 3 Km	112	367
2	3 to 6 Km	43	107
3	6 to 9 Km	19	59
4	More than 9 Km	55	174
Total		229	707

Station	Feeder Route	Length (Km)
Koyembedu	Route 1	5.5
	Route 2	7.4
	Route 3	8.5
CMBT	Route 1	7.5
	Route 2	7.4
	Route 3	7.6
	Route 4	6
	Route 5	5.4



- Stakeholders Involvements and ownership
- Coordination activity between various Stakeholders
- Institutional/Regulatory Setup
- Land availability – Provision of facility within available land
- Implementation of various schemes/proposals
- Rationalization of existing Public Transport Systems
- Common Ticketing Solutions and Revenue Sharing Mechanisms

Existing Condition



Rail Limi



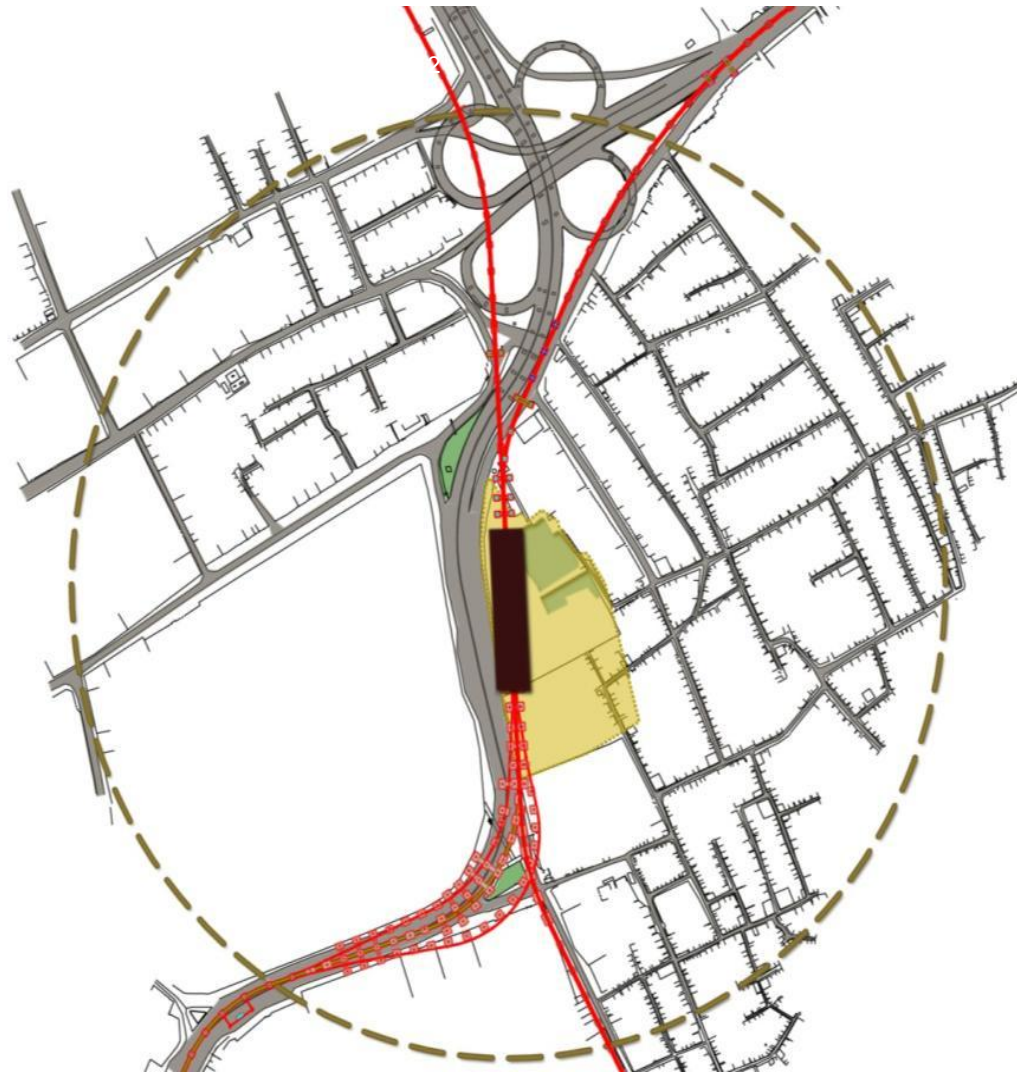
Existing Condition



Alandur Station



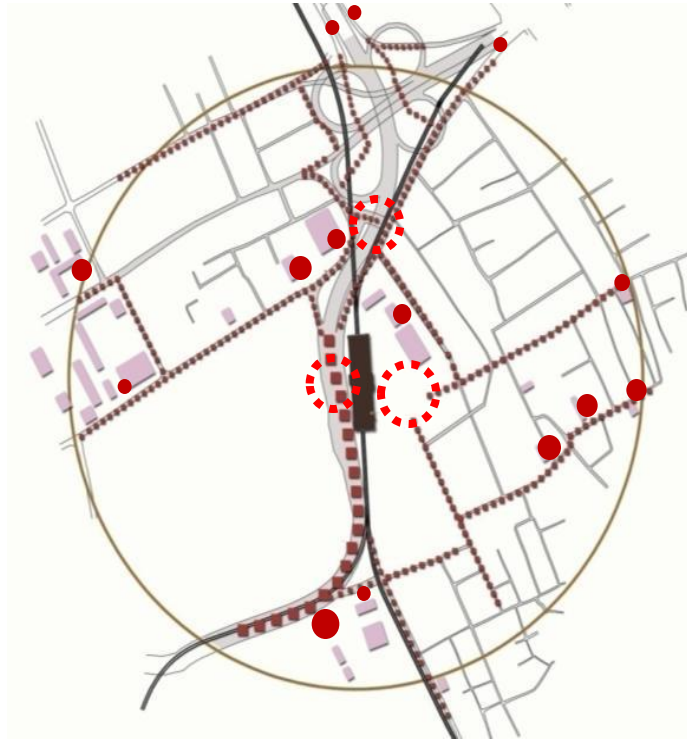
Alandur – Station Location



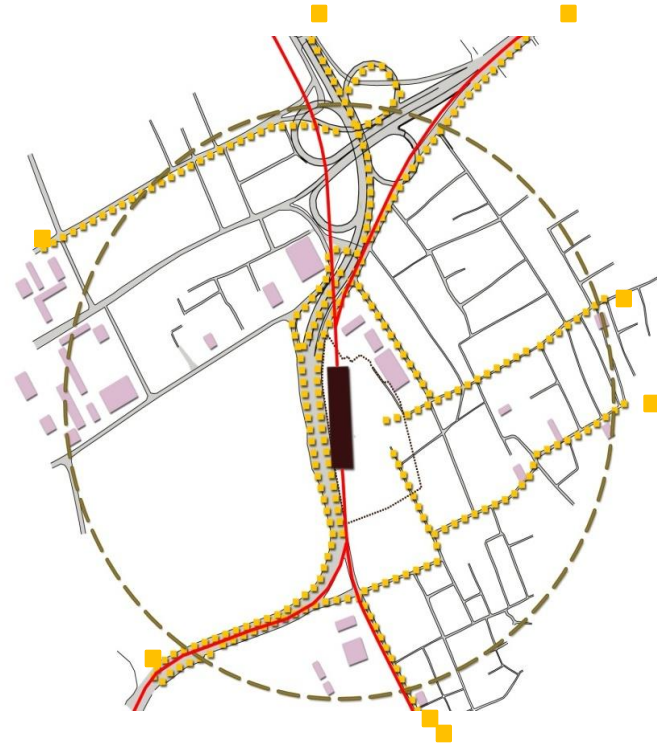
- LEGEND
- Road
 - CMRL Land
 - Station
 - Alignment



Alandur – Concept

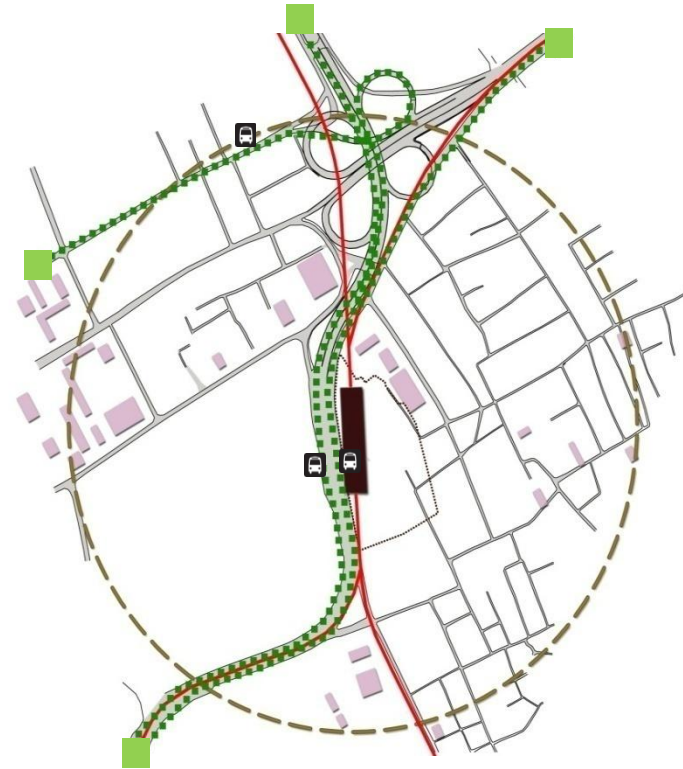
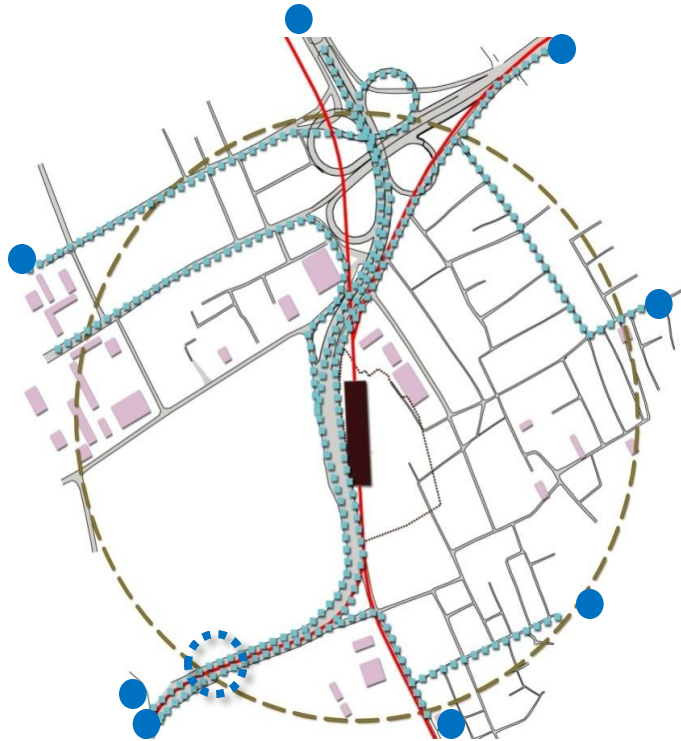


- Pedestrian Movement
- Missing Pedestrian Link



- Two/Four wheeler Movement

Alandur – Concept

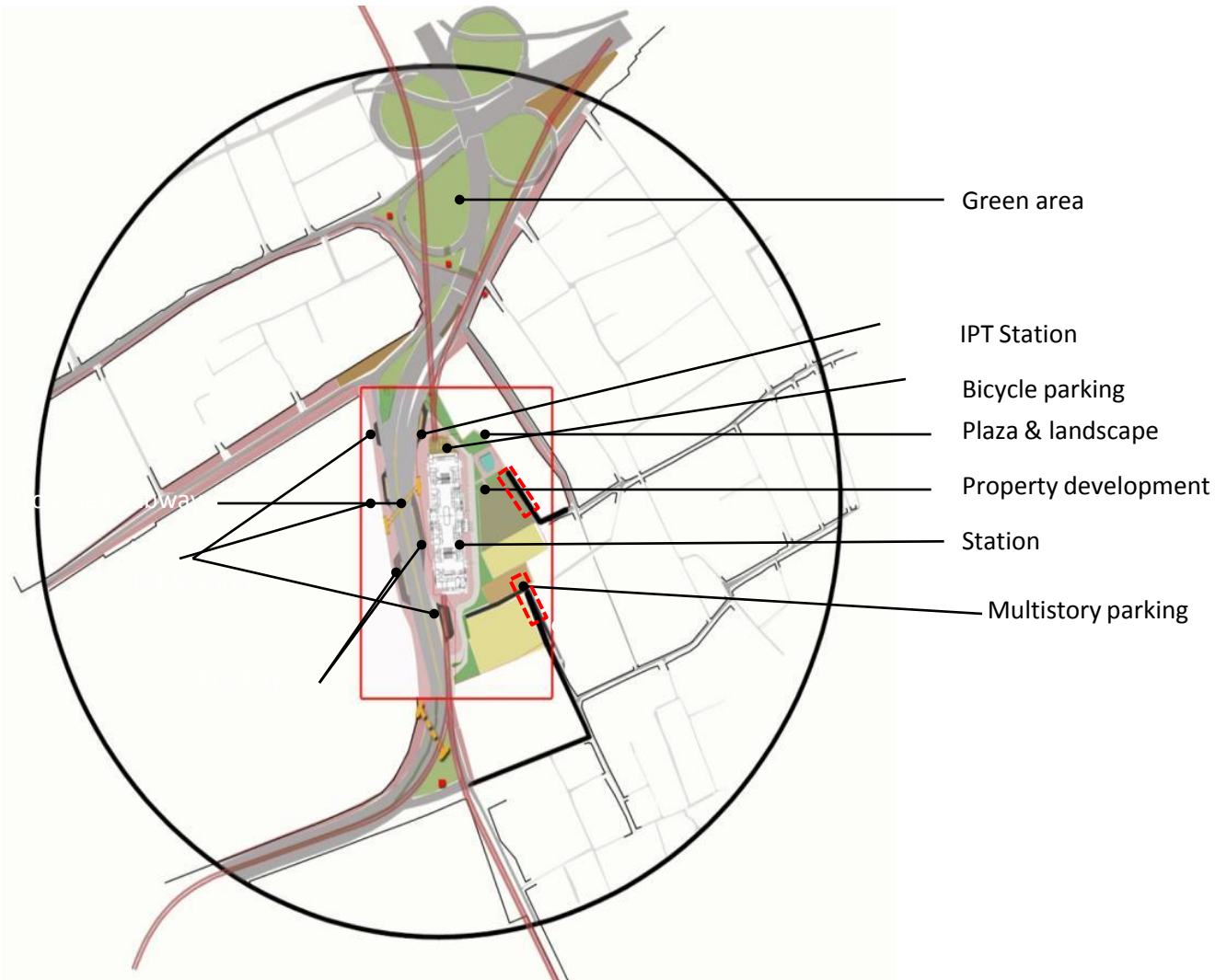


● Feeder Route
○ Median opening required

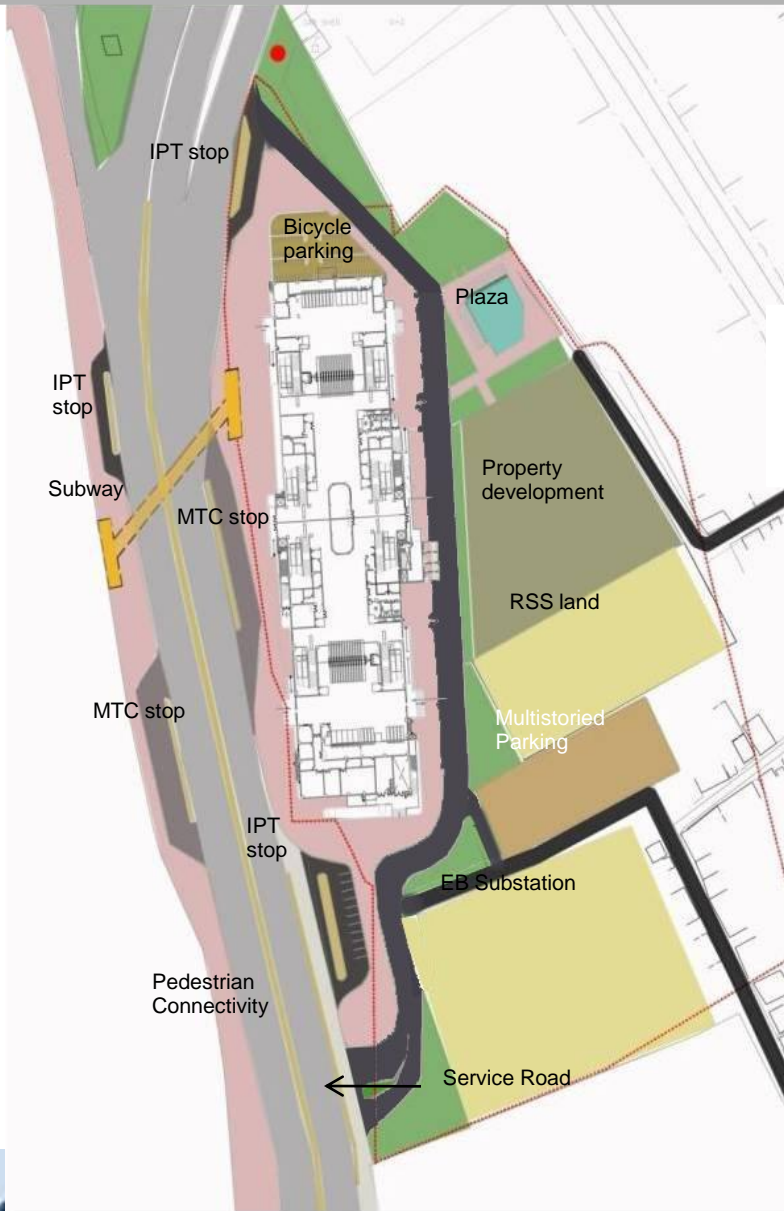
■ Bus Route
🚌 Bus stop








Alandur – Concept



Alandur – Concept



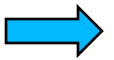
-  Pedestrian connectivity
-  Landscape/plazas
-  Parking – 2 wheelers /Bicycle
-  Feeder Bays
-  Proposed Road



Alandur– Existing Condition



Alandur– No intervention Scenario





Thank You