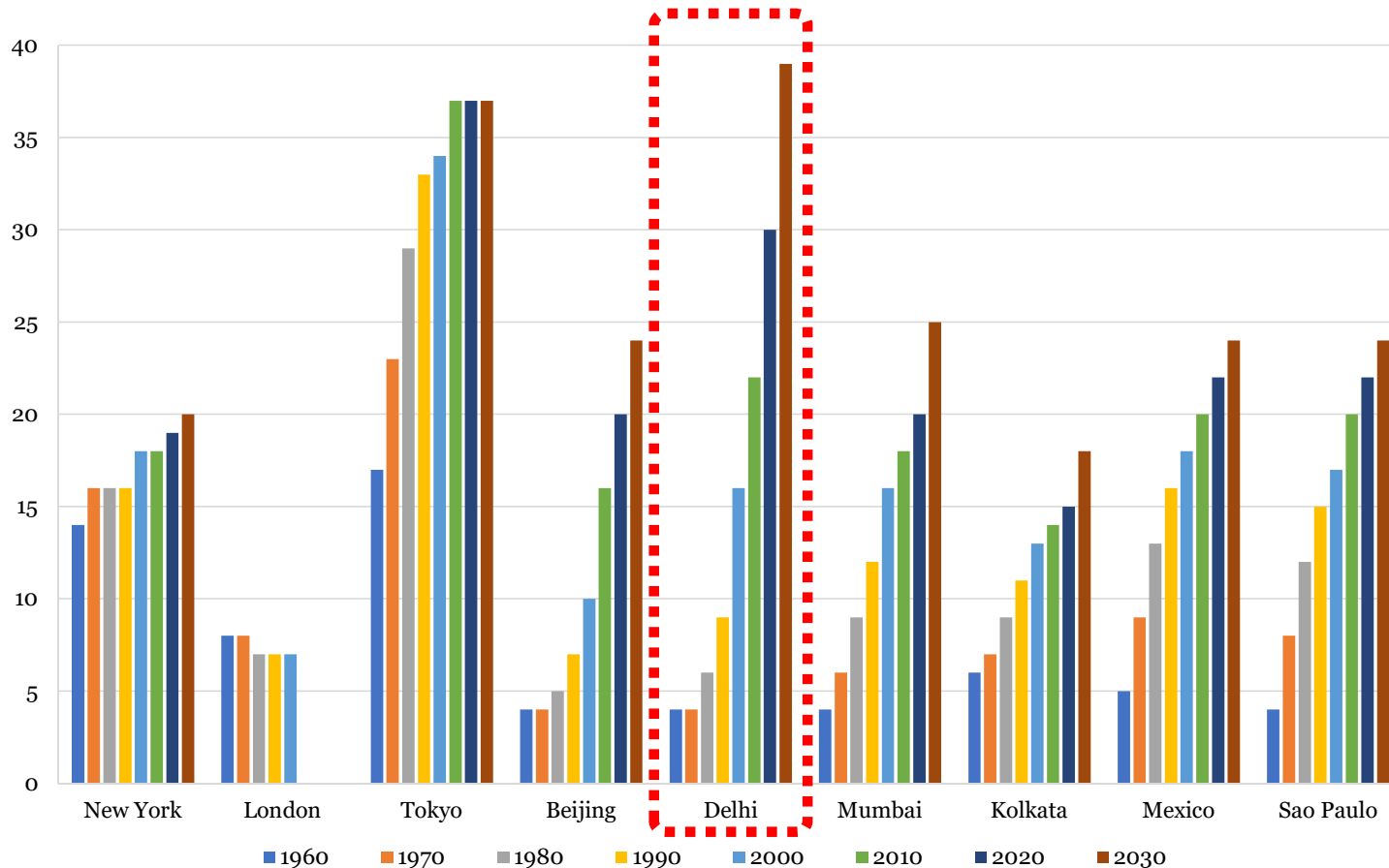# Regional Rapid Transit System in NCR

National Capital Region Transport Corporation

New Delhi | 17.09.2019

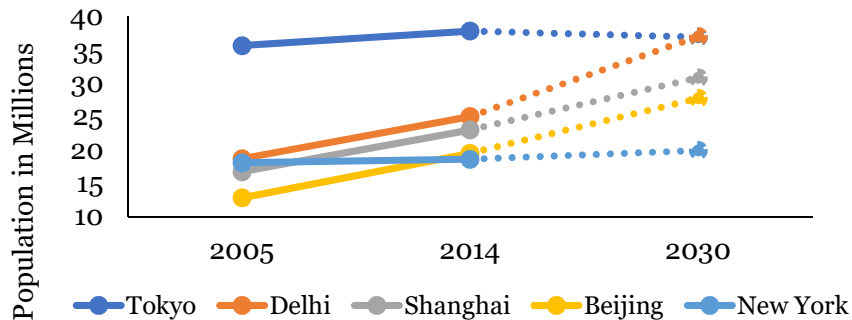17.9.19

World is changing

Some Facts

- India will have 7 cities of population more than 10 million by 2030
- Delhi will overtake Tokyo to become world's most populous city
- Most of the megacities will be in Asia: India and China
- India will have an addition of 25 crores in the urban population

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Source – World Urbanization Prospects 2018 – UN DESA

Population trend of mega cities in World[1]

Population in Millions — 40, 35, 30, 25, 20, 15, 10

2005   2014   2030

Tokyo   Delhi   Shanghai   Beijing   New York

Consequences of rapid urbanization in Delhi & NCR

- **Unmanageable Urban Sprawl**
  - Lacking Regional Public Transport – low frequency – lack of integration - Multiple interchanges
- **Pollution[2]:**
  - 40% increase in vehicular pollution - 2010 & 2018
  - Road vehicles contribute as high as 41% of the pollution
  - Vehicles from NCR contribute 40%-50%
- **Congestion**
  - Vanishing off-peak hours; 63% share of Private Transport Regional Travel on Delhi-Meerut
- **Accidents**
  - In 2016 – highest # of deaths in Delhi – 1591 (highest among top 50 cities with million plus population)

Inadequate regional mobility – constraining economic growth

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1: World Bank data   2: Report No. 92, EPCA, Oct. 2018

Better Connectivity triggers Urban Development

Night Imagery- NCR

➢ **Create Sustainable Public Transport Network - Mobility**

   ➢ A reliable, fast & regional mass transit system can **broaden the spread of development**

   ➢ **Empower citizens through improved access**

      o Enable travel from/to urban areas by creating suitable transport and physical infrastructure with multi- modal integration:

      o Make the transit seamless and reduce unnecessary dispersal and collection during travel

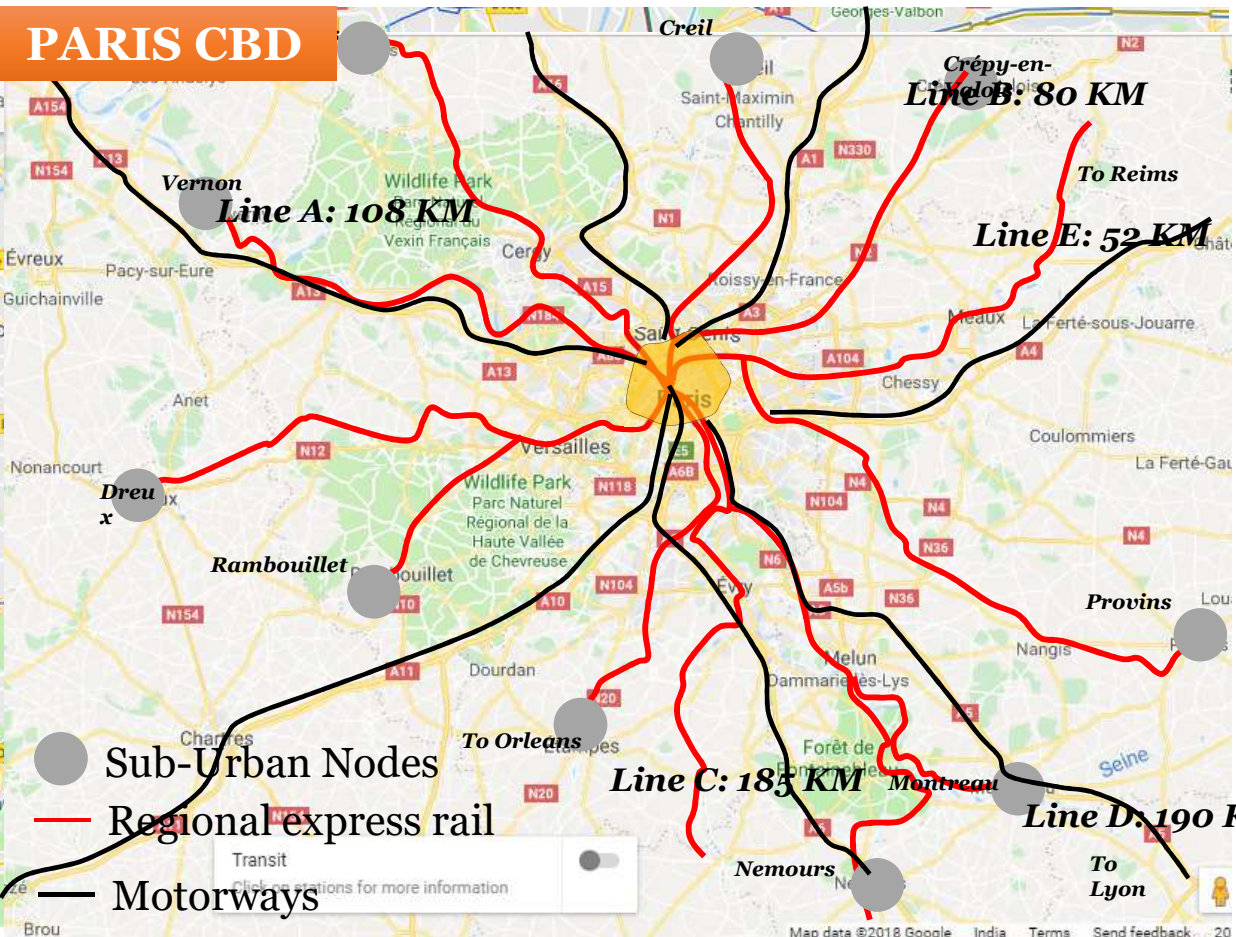   o Comprehensive last mile connectivity-key to patronage

➢ **Enable polycentric development**

   ➢ Transit Oriented Development – Densification around stations

   ➢ Economic nodes around stations: new economic opportunities

Regional Mobility is an ideal solution for sustainable development

Network of Networks - Paris Metropolitan Region

PARIS CBD

Line B: 80 KM
Line A: 108 KM
Line E: 52 KM
To Reims
Line C: 185 KM
Line D: 190 KM
To Orleans
To Lyon

● Sub-Urban Nodes
— Regional express rail
— Motorways

Regional Express Rail
587 kms   257 stations

Metro
216.5 kms   384 stops

Tramway
95 kms   148 stations

Buses
347 lines   12,500 stops

Regional Express Rails connect sub-urban centers to Paris CBD

Co existence of multiple modes performing different roles in the metropolitan region

Regional Rail serves as the main transport backbone of the region with buses and metros supplementing as feeders

Network of Networks - Seoul Metropolitan Region
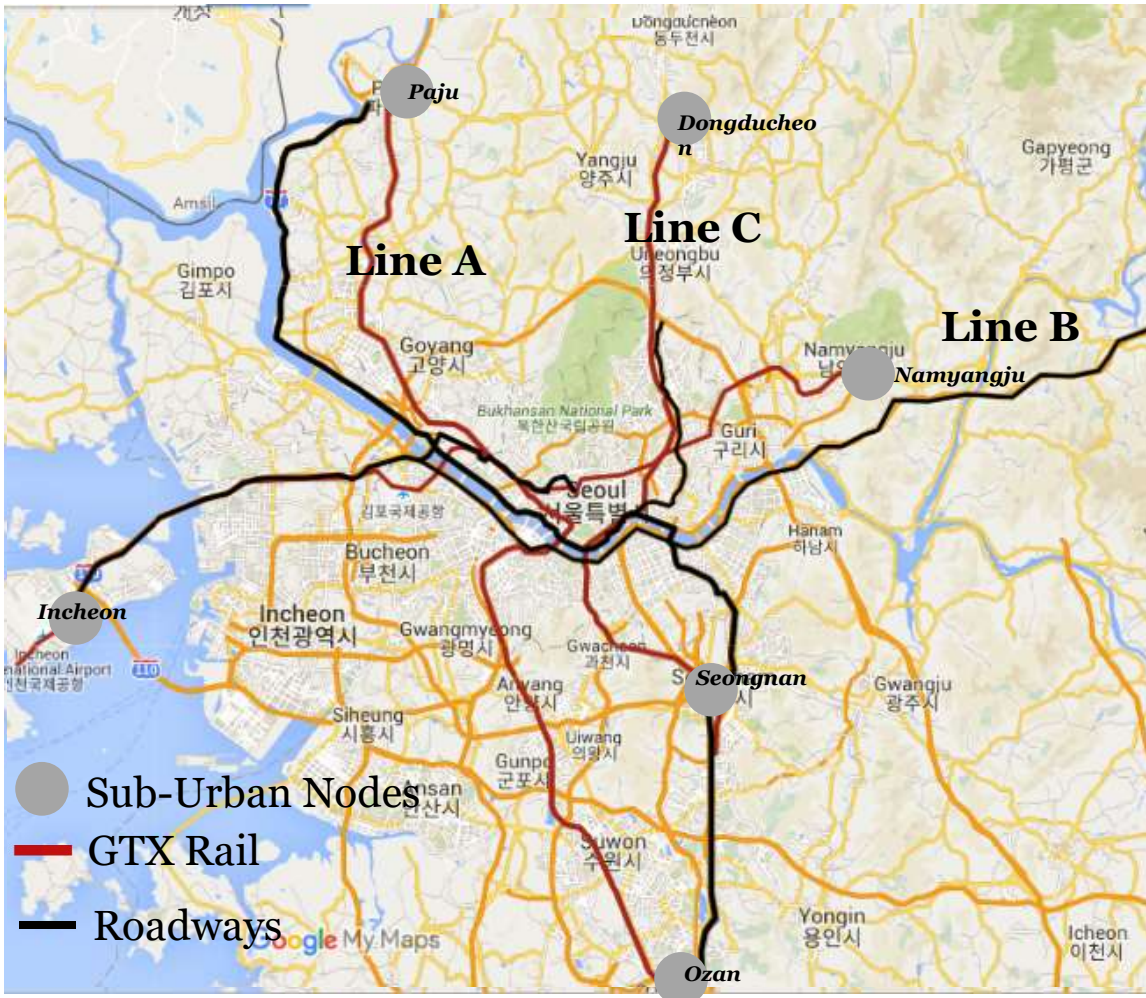
GTX Network **140 Kms 22 stations**
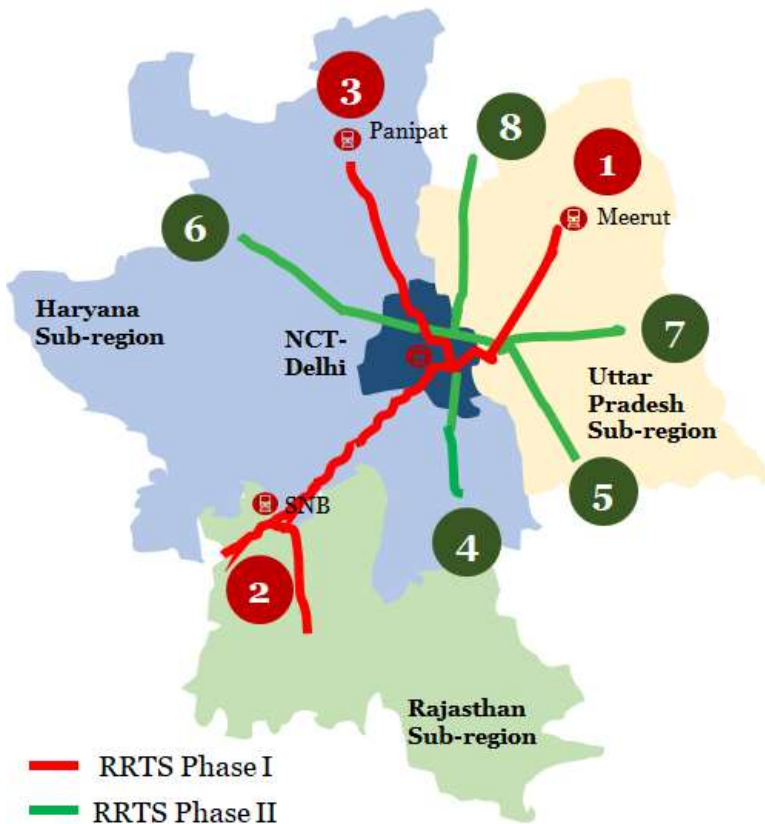
Seoul Urban Rail **316 Kms 293 stations**

Seoul BRT **115 Kms 329 stations**

GTX Network connecting sub-urban centers to Seoul CBD along with expressways for private vehicles and freight

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RRTS in NCR – enhancing Regional Mobility

National Capital Region (NCR)

- 3 Panipat
- 8
- 1 Meerut
- 6
- Haryana Sub-region
- NCT-Delhi
- 7
- Uttar Pradesh Sub-region
- SNB
- 5
- 2
- 4
- Rajasthan Sub-region

— RRTS Phase I
— RRTS Phase II

Functional Plan on Transport for NCR-2032 - eight (8) Corridors of RRTS

- The **Planning Commission** appointed **Task Force (2006) having representation of GOI and NCR States –**
  - **Prioritized 3 corridors** for phase - I:
    - ✓ **Delhi-Ghaziabad-Meerut** (Sanctioned by GoI – 07.03.2019) – in implementation phase
    - ✓ Delhi-Gurugram-Alwar
    - ✓ Delhi-Panipat
- **Created institutional framework**
  - Inter-ministerial and Inter-state sub-committee (2009) - to oversee the planning
- **Brought Stake-Holders together**
  - MoU (2011) signed and NCRTC created

What is RRTS & What will it offer to its users?

RRTS – Rail based high speed, high capacity, comfortable and safe commuter service connecting regional nodes. It will help in **reducing Road Congestion, Energy Consumption and Pollution**

Design speed of 180 kmph (Delhi to Meerut in 60-65 min)

Train every ~5-10 min. & serving traffic nodes every 5-10 kms

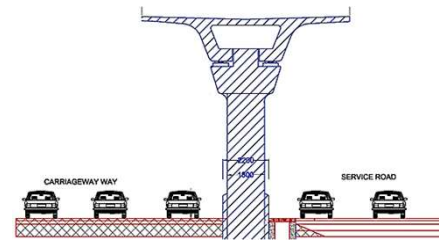**Interoperable Corridors & Multimodal Integration**

Universal Access – Dedicated Women Coach

High capacity, comfortable journey, airline seating

Weather proof – rains, fog

Reduced Land use for high throughput

Commuter friendly information system

RRTS trains will travel at 3 times the average speed of Metro

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3 prioritized corridors in Phase I

Parameters	Delhi – Meerut	Delhi – Panipat	Delhi – Alwar
Total Length (km)	82.15	103	164
Estimated travel time (min)	60	70	100
No. of total stations	24	12	19

~ 350 kms
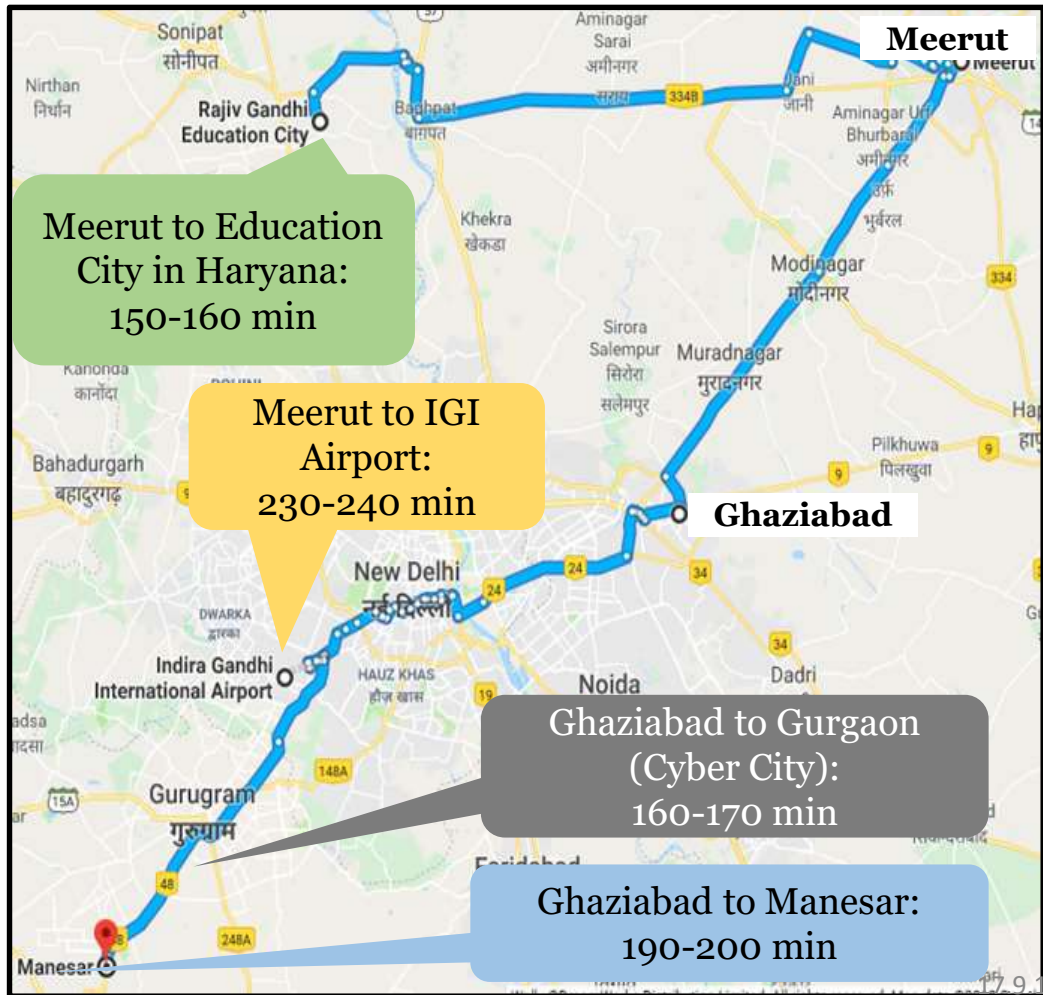
600 coaches

6 Depot.

~ 2 mn daily ridership

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Socio-Economic Benefits
Significant reduction in travel time (60-70%)

Travel time by Road

Meerut to Education City in Haryana: 150-160 min

Meerut to IGI Airport: 230-240 min

Ghaziabad to Gurgaon (Cyber City): 160-170 min

Ghaziabad to Manesar: 190-200 min

Travel time by RRTS

Meerut to Education City in Haryana: 90-95 min

Meerut to IGI Airport: 70-75 min

Ghaziabad to Gurgaon (Cyber City): 35-40 min

Ghaziabad to Manesar: 55-60 min
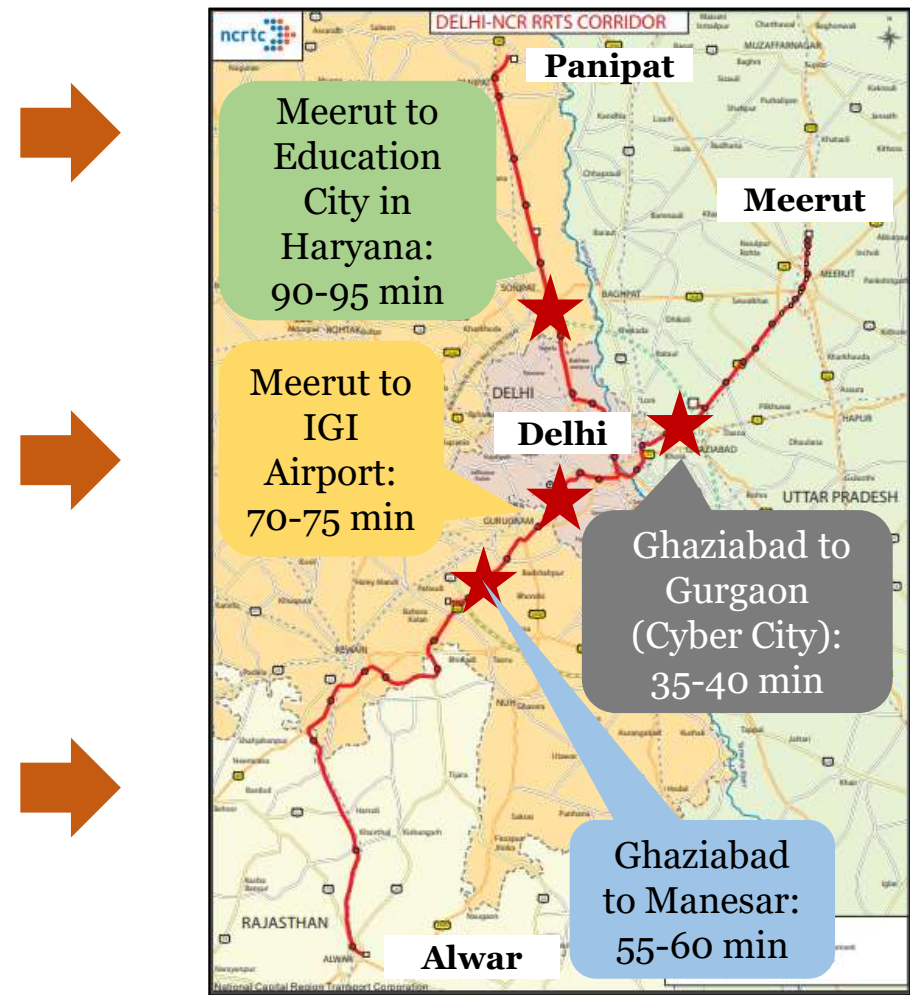
Transformation in regional mobility

Area covered by Metro in 1 hr

- Area covered by RRTS in 1 hr
- Coverage area **expands**

Share of Public Transport

Rail 32%

Car 36%

Bus 5%

Two Wheeler

Modal Shift after RRTS

RRTS 46%

Car 22%

Two Wheeler 15%

Rail 15%

Bus 2%

Increase in share of public transport from 37% to 63%

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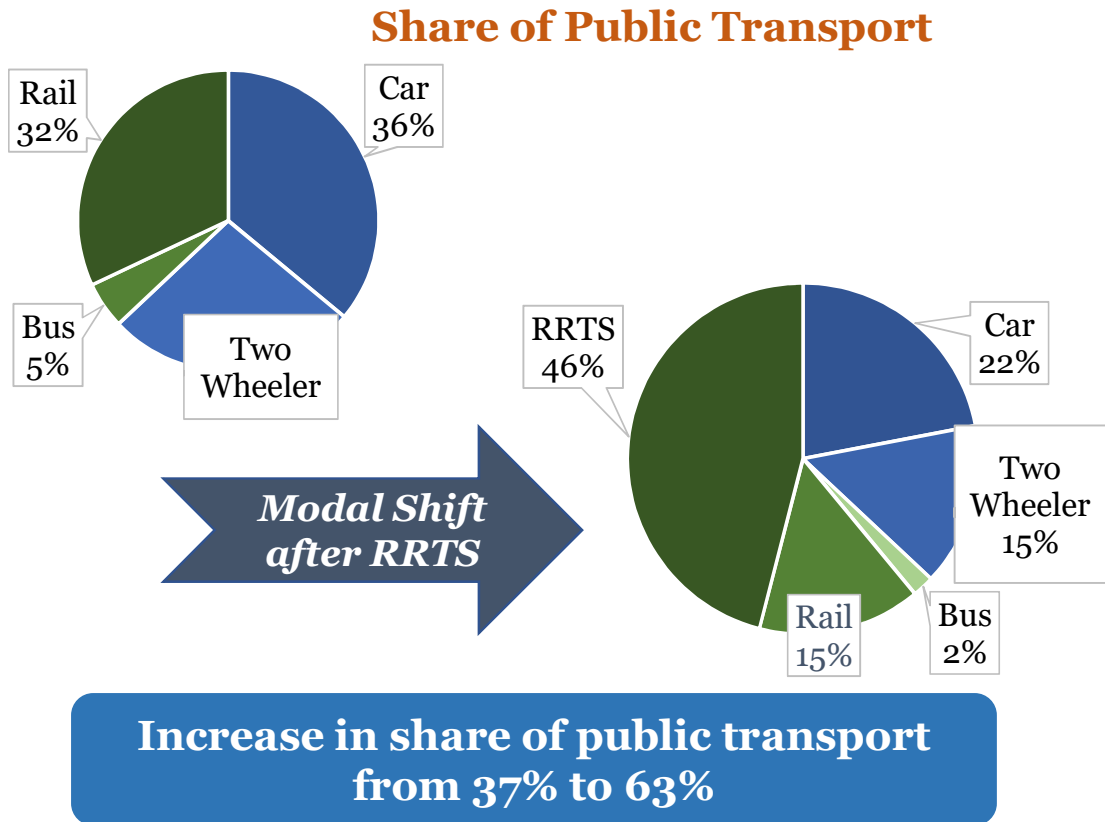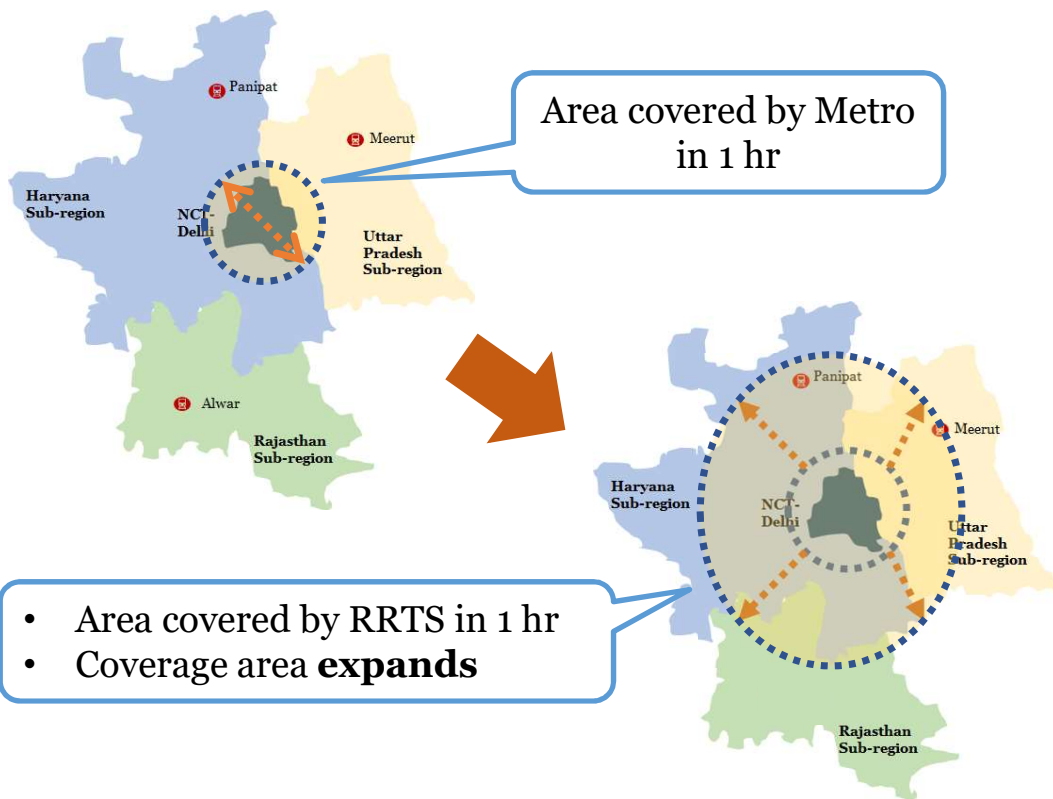
Multimodal integration and Accessibility

1

All three corridors of phase I will converge at Sarai Kale Khan & will be interoperable providing seamless movement ▶|

2

Creating a Network of Networks
Multimodal integration (MMI) with various modes of pubic transport ▶|

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Modes	MMI with RRTS
Metro Rail Systems	**Delhi Metro :** With **7 metro lines**, at Ghaziabad, Anand Vihar, New Ashok Nagar, SKK, Jor Bagh, Aerocity, Indraprastha, Kashmere Gate, Munirka **Meerut Metro**: At Begumpul **Gurgaon Rapid Metro:** Udyog Vihar **Bawal Metro**: At Panchgaon, Kherki Daula ▶|
Airport	At Indira Gandhi International Airport, Delhi – Aerocity Metro Station
Indian Railways	Hazrat Nizamuddin & Anand Vihar
ISBTs	Sarai Kale Khan, Kashmere Gate, Anand Vihar, Panchgaon
Other Bus Terminal/ Depot	Kaushambi Bus Depot, Sahibabad Bus Adda, Ghaziabad New Bus Adda, Bhaisali Bus Adda (Meerut), Bawal, etc.

Progress on Delhi-Meerut RRTS Corridor

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Delhi-Ghaziabad-Meerut RRTS

Not merely connecting two cities but serving 82 km of urban strip

1. **City-center to city-center**, high-speed dedicated rail connectivity

2. Train every **5-10 minutes**, serving traffic nodes **every 5-10 kms – 24 stations**

3. Seamless **multimodal** connectivity with other modes of transport

4. Will serve **0.8 Mn passenger trips per day**

5. Modal shift from private to public transport – 37% to 63% – **0.1 Mn vehicles off the road**
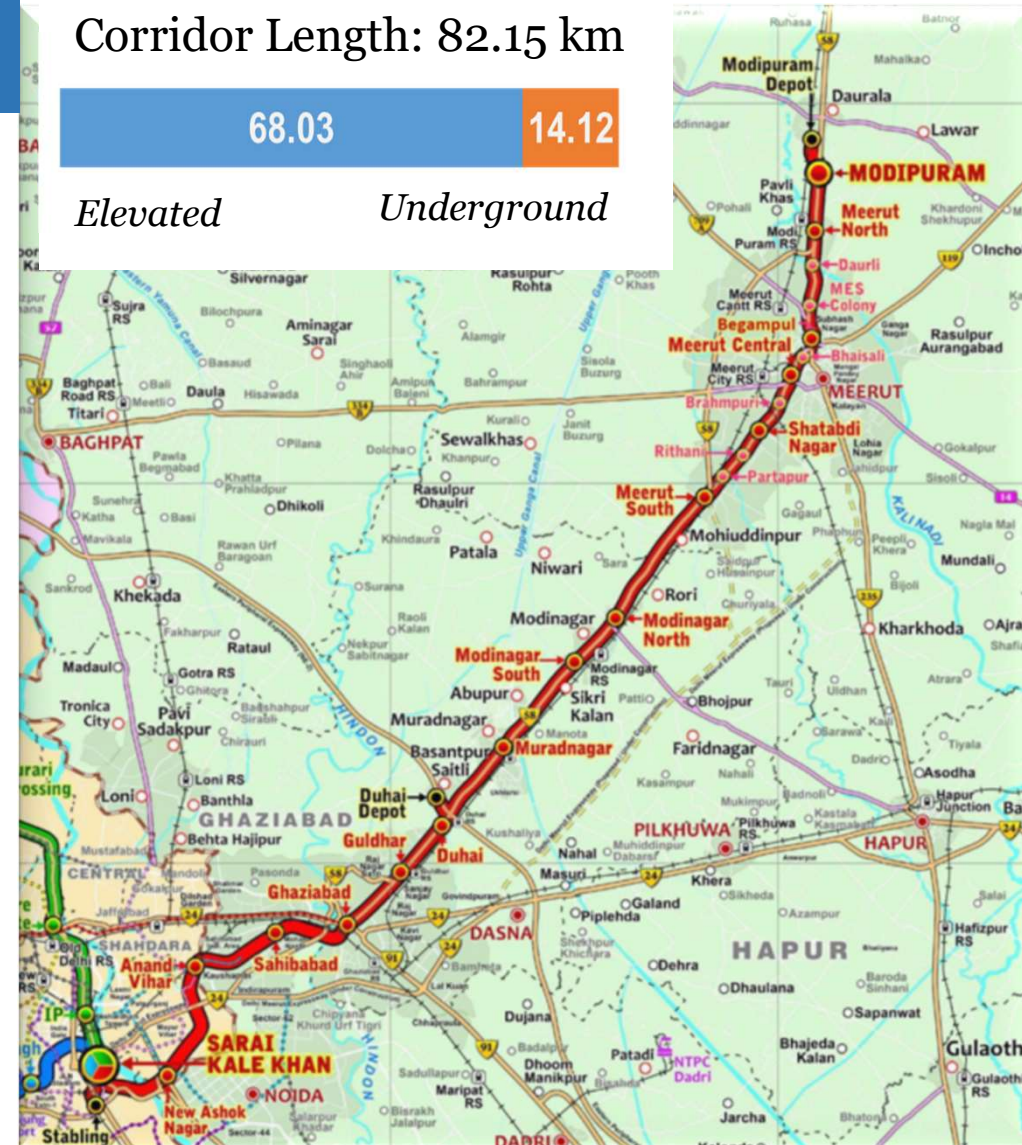
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Corridor Length: 82.15 km

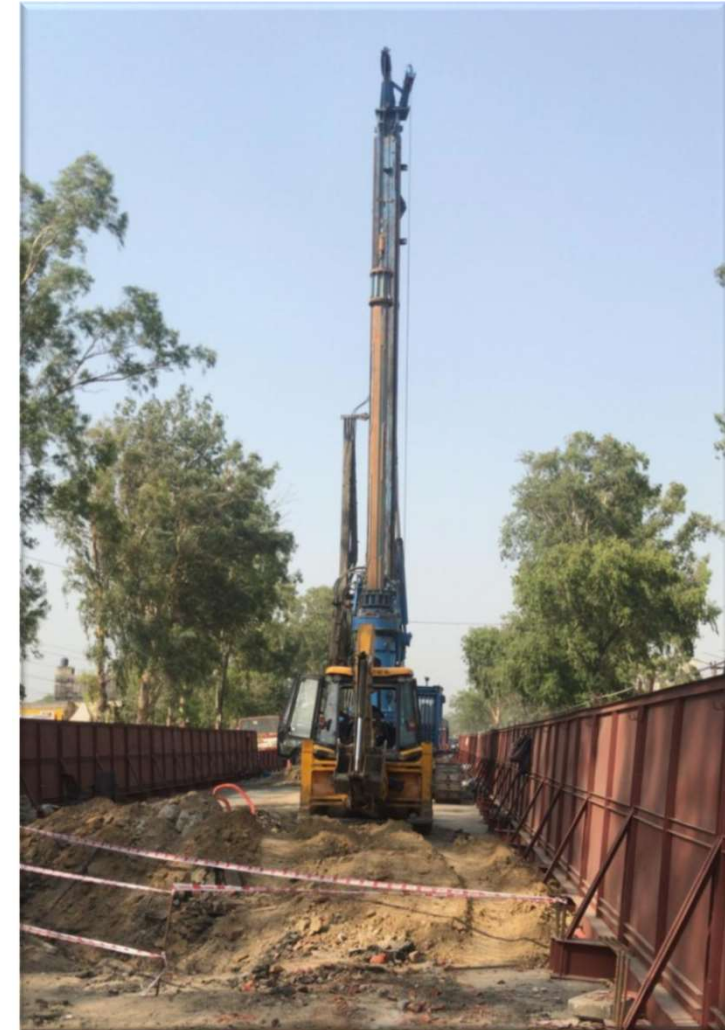| 68.03	14.12
Elevated	*Underground*

Delhi-Ghaziabad-Meerut RRTS Corridor

- ✓ **Govt. of India** accorded its sanction – March 2019

- ✓ Approval of **Govt. of Uttar Pradesh** – March 2019

- ✓ Approval of **Govt. of NCT of Delhi** – February 2019

- ✓ Foundation Stone Laid by **Hon'ble Prime Minister** - March 2019

Construction of priority section started in the month of June 2019

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Progress on Delhi-Gurugram -SNB RRTS Corridor

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Alignment of SKK - SNB Corridor

Parameters	SKK – SNB
Total Length (km)	106.5
Elevated (km)	70.56
In Delhi	*0.22*
In Haryana	*68.41*
In Rajasthan	*1.93*
Underground (km)	35.94
In Delhi	*21.86*
In Haryana	*14.08*
In Rajasthan	*0.0*
Estimated travel time	~ 70 min
No. of total stations	16
In Delhi (U/G: 3)	*4*
In Haryana (U/G: 2)	*11*
In Rajasthan	*1*

Status of Delhi-Gurugram-SNB RRTS Corridor

- **NCRTC Board** chaired by Secretary , MoHUA - **approved** DPR

- **Govt. of Haryana** – approved DPR

- **Govt. of Rajasthan** – approved DPR

- Govt. of NCT Delhi – approved DPR

- **Proposal under consideration of Government of India**

- **Chief Project Manager(CPM)/Gurugram office is operational and pre-construction activities are in progress.**

Geotechnical investigation works – in progress

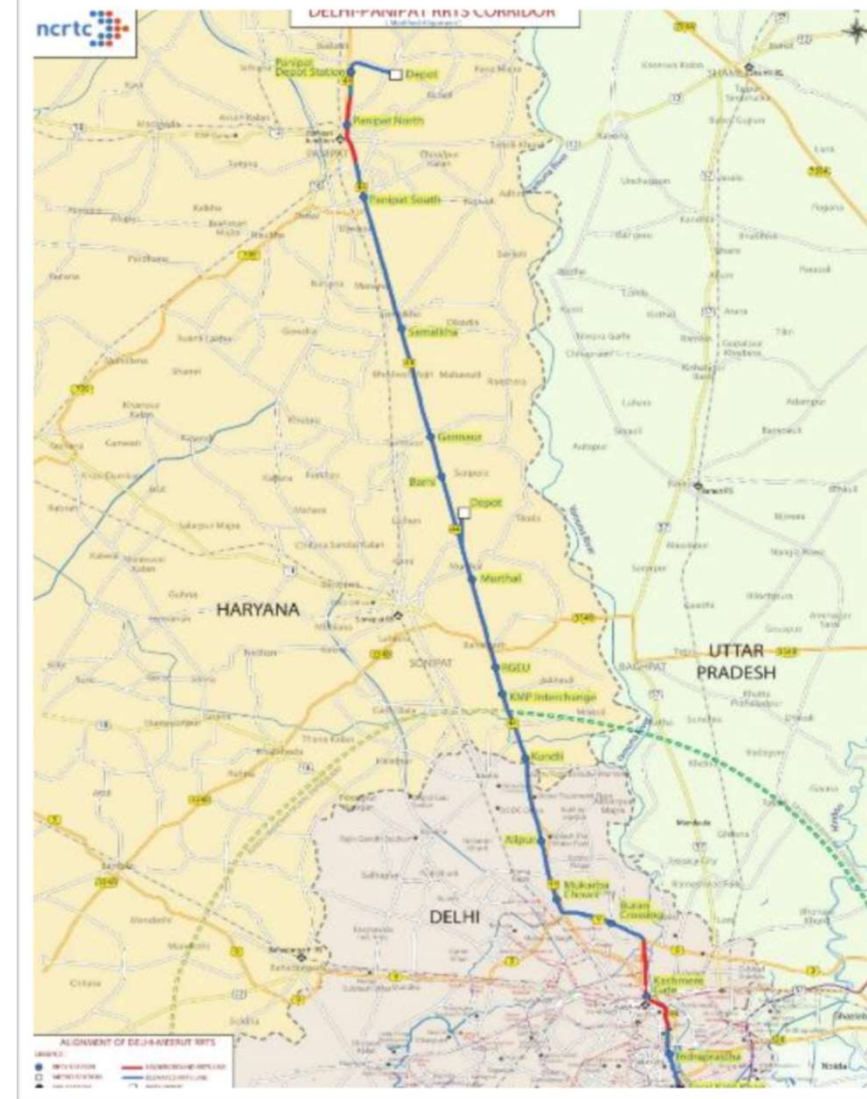17.9.19

Progress on Delhi-Panipat Corridor

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Delhi – Panipat

Parameters	Value
Total Length (km	104
In Delhi	
Elevated (km)	30.17
Underground (km)	6.83
In Haryana	
Elevated (km)	62
Underground (km)	5
Estimated travel time (min)	~65 min
No. of total stations	16
No. of stations in Delhi	6
No. of stations in Haryana	10

- **DPR is under finalization**

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Thank you

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ncrtc

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