Delhi – Meerut RRTS Corridor
Implemented by National Capital Region Transport Corporation (NCRTC)

A Presentation by:
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## Overview

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<td>What is RRTS and its benefits</td>
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<td>Brief introduction of NCR Transport Corporation and the RRTS Corridors</td>
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What is Regional Rapid Transit System (RRTS)?

- RRTS is a **Rail based Regional Rapid Transit System** with a design speed of 180 kmph and an average speed of 100 kmph. It is either elevated or underground or may be at grade.
- Inter station distances: 5 – 10 Km
- Once operational, it will be the **FASTEST, the most COMFORTABLE and the SAFEST** mode of travel in NCR.
- This shall be the First RRTS Network in India.

**RRTS Vs Metro: Both are Supplement to each other**

<table>
<thead>
<tr>
<th></th>
<th>RRTS</th>
<th>Metro</th>
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</thead>
<tbody>
<tr>
<td>Design Speed</td>
<td>180 Km/hr</td>
<td>90 Km/hr</td>
</tr>
<tr>
<td>Ops Speed</td>
<td>160 Km/hr</td>
<td>80 Km/hr</td>
</tr>
<tr>
<td>Average Speed</td>
<td>100 Km/hr</td>
<td>32 Km/hr</td>
</tr>
</tbody>
</table>

**Average Speed**
100 Km/hr for Non Stop
150 Km/hr for Non Stop

- **Time to Travel 100 Km – 1 Hour**
- **Time to Travel 100 Km – 3 hours**

RRTS Trains will travel at 3 times the average speed of Metro.
**What is Regional Rapid Transit System (RRTS)?**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>High Speed connectivity</strong></td>
<td></td>
</tr>
<tr>
<td><strong>High Frequency</strong></td>
<td>5 to 10 minutes</td>
</tr>
<tr>
<td><strong>High Capacity</strong></td>
<td>2150 passengers per train (12 car)</td>
</tr>
<tr>
<td><strong>Comfortable journey</strong></td>
<td>AC coaches, Airline type seating</td>
</tr>
<tr>
<td><strong>Comparatively Affordable Fares</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Reduced Land use</strong></td>
<td>for same throughput</td>
</tr>
<tr>
<td><strong>User Friendly Information System</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Multimodal Integration</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Safe Travel</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Weather Proof</strong></td>
<td></td>
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</tbody>
</table>
Outcomes of RRTS

The value differential in land value will be significant owing to high speed, reduction in travel time and wider reach.

Expected incremental Value

Expected Land Value due to RRTS Implementation

Average Market Rates (Rs. per sq. m.)

~400,000

~7,000

~12,000

~70,000

Delhi

~29 km

18 min

Duhai

~39 km

24 min

Muradnagar

Meerut
Outcomes of RRTS

- High throughput meeting the future demand
- Direct connection and Multi-modal integration
- Reduced congestion
- Reduced pollution
- More efficient allocation of resources for masses
- Reduced and distributed load on civic amenities
- Lesser vehicular traffic on roads and hence lesser accidents
NCRTC – The Implementing Agency

- Four State Governments joined hands with GoI through a MoU on 29.06.2011, to implement country’s first Regional Rapid Transit System in NCR
- NCRTC is mandated for implementation of RRTS in the NCR, including design, construction, operation and maintenance
- Equity structure of NCRTC is:
  - Govt of India - 50%
  - States of NCR - 50% (12.5% each)
    (Delhi, UP, Rajasthan Haryana)
Proposed Eight (8) RRTS Corridors in NCR

National Capital Region (NCR)
- Multi-state region with National Capital as Centre
- Area of about 58,000 Sq Km
- With ~46 million population (census 2011), largest metropolitan area in the world.

RRTS will connect identified regional growth centres

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>RRTS Corridors</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Prioritised Corridors Identified for execution</td>
</tr>
<tr>
<td>1</td>
<td>Delhi – Sonipat – Panipat : 111 km</td>
</tr>
<tr>
<td>2</td>
<td>Delhi - Ghaziabad - Meerut : 90 km</td>
</tr>
<tr>
<td>3</td>
<td>Delhi - Gurgaon – Rewari - Alwar : 180 km</td>
</tr>
<tr>
<td></td>
<td>For Second Phase</td>
</tr>
<tr>
<td>4</td>
<td>Delhi – Faridabad – Ballabgarh - Palwal</td>
</tr>
<tr>
<td>5</td>
<td>Ghaziabad – Khurja</td>
</tr>
<tr>
<td>6</td>
<td>Delhi - Bahadurgarh - Rohtak</td>
</tr>
<tr>
<td>7</td>
<td>Ghaziabad-Hapur</td>
</tr>
<tr>
<td>8</td>
<td>Delhi-Shahadra-Baraut</td>
</tr>
</tbody>
</table>

Source: Regional Plan 2021
Delhi-Ghaziabad-Meerut RRTS Corridor

<table>
<thead>
<tr>
<th>Station Name</th>
<th>Inter-station Distance (KM)</th>
<th>Distance (Cumulative)</th>
<th>Travel Time from Delhi in (Mins)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sarai Kale Khan</td>
<td></td>
<td>0.0</td>
<td>7</td>
</tr>
<tr>
<td>Anand Vihar</td>
<td>9.70</td>
<td>9.70</td>
<td>7</td>
</tr>
<tr>
<td>Sahibabad</td>
<td>6.70</td>
<td>16.40</td>
<td>12</td>
</tr>
<tr>
<td>Ghaziabad</td>
<td>2.50</td>
<td>21.30</td>
<td>18</td>
</tr>
<tr>
<td>Gul纡har</td>
<td>3.30</td>
<td>24.60</td>
<td>23</td>
</tr>
<tr>
<td>Duhal</td>
<td>4.10</td>
<td>28.70</td>
<td>26</td>
</tr>
<tr>
<td>Muradnagar</td>
<td>7.30</td>
<td>36.00</td>
<td>31</td>
</tr>
<tr>
<td>Modi Nagar</td>
<td>9.40</td>
<td>45.40</td>
<td>36</td>
</tr>
<tr>
<td>Meerut South</td>
<td>7.60</td>
<td>53.00</td>
<td>42</td>
</tr>
<tr>
<td>Shatabadi Nagar</td>
<td>7.90</td>
<td>60.90</td>
<td>47</td>
</tr>
<tr>
<td>HRS Chowk</td>
<td>3.10</td>
<td>64.00</td>
<td>50</td>
</tr>
<tr>
<td>Begumpul</td>
<td>3.40</td>
<td>67.40</td>
<td>53</td>
</tr>
<tr>
<td>Meerut North</td>
<td>7.05</td>
<td>74.45</td>
<td>59</td>
</tr>
<tr>
<td>Modinagar</td>
<td>3.75</td>
<td>78.20</td>
<td>62</td>
</tr>
<tr>
<td>Spur Line</td>
<td></td>
<td>85.70</td>
<td></td>
</tr>
<tr>
<td>Nauchandi</td>
<td>4.80</td>
<td>60.20</td>
<td></td>
</tr>
<tr>
<td>Shastri Nagar</td>
<td>5.00</td>
<td>70.20</td>
<td></td>
</tr>
<tr>
<td>Length at Ends</td>
<td></td>
<td>90.20</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>90.20</td>
<td></td>
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</table>

Total Base Project Cost Rs. Cr. 21,903
Total Project Completion Cost Rs. Cr. 32,599

Total Length 90 kms
Total Stations 16
Underground Section 30 kms
elevated Section 60 kms

(Source: NCRTC)
Statement of Problem

Capital Intensive Project? Who shall bear the Cost?

✔ Fare Revenue is constrained by the affordability of the Users and viability of the project

✔ Revenue from many Non Fare Revenue sources such as Property Development and Advertisements, Branding etc. are also indirectly dependent on the ridership

☐ Potential options for increasing Ridership along the RRTS Corridor should be explored for the Sustainability of the Project.

☐ Use of Innovative Sources of Land Value Capture are very essential
Multi Modal Integration of RRTS with DMRC and Indian Railway Stns.

At Sarai Kale Khan:
- DMRC
- ISBT
- Hz. Nizamuddin Rly. Stn

At Anand Vihar:
- Two Metro Stn. of DMRC
- Indian Railway
- ISBT
- UPSRTC

At Sahibabad:
- DMRC
- UPSRTC

At Ghaziabad:
- DMRC
Multi-Modal integration at Sarai Kale Khan

Video

Multi Modal Integration at SKK

1. RING ROAD AND EXISTING ONE WAY FLYOVER
2. HAZRAT NIZAMUDDIN RAILWAY STATION.
3. PROPOSED RRTS STATION
4. SKYWALK- TRAVELATOR CONNECTION
5. UNDERGROUND DMRC STATION
6. PROPOSED CONNECTION TO DMRC STATION
7. DMRC STATION ENTRANCE E 1
8. DMRC STATION ENTRANCE E 2
9. DMRC STATION ENTRANCE E 3
Multi-Modal Integration at Anand Vihar
Land Value Capture: Delhi – Meerut RRTS Corridor

1. Sale of Additional FAR
2. Additional Stamp Duty
3. Development Fee
4. TOD Cess
5. Betterment Charges
6. Development of new areas / patches
Innovative LVC instruments globally

**1. London Crossrail**
- **LVC Instrument:**
  - Business Rate Supplement (BRS) to internalize the windfall surpluses of land value
- **Regulatory Framework:**
  - Business Rate Supplements Act 2009 (the ‘BRS Act’)
  - Grants power to the Mayor of Greater London Authority (GLA)
- **Mechanism:** GLA to raise loans, BRS will be used to repay loans

**2. Hong Kong MTR**
- **LVC Instrument:**
  - Rail + Property Model
  - Additional FAR
- **Regulatory Framework:** MTR prepares Comprehensive Development Area zoning
- **Mechanism:**
  - MTR gets the land at pre-rail prices (nominal rate) from the government, and
  - Sells to / jointly develops with private developers at after-rail market prices

**3. New York Avenue Metro Station**
- **LVC Instrument:**
  - Special Assessment Charge
- **Mechanism:**
  - The District of Columbia issued bonds to contribute funds
  - Repay bonds using the funds collected through the special assessment

NCRTC has started discussions with various Stake holders to Adopt Optimised one
For this Purpose **Long Term Development Policy Decision and Identification of Areas where New Development may be Plan** has been observed to be Key Factors. For Said Purpose RRTS corridor may be Divided as below.:

i.) **Section of RRTS Corridor Already Developed** (Almost Saturated Areas Where Limited Possibility of Further Development):
- Sarai Kale Khan to Guldhar (Delhi and Ghaziabad Area)
- Modinagar (Very Congested Area)
- Shatabdi Nagar to Meerut North (Meerut City Area)

ii.) **Section of Corridor, Where New Development may be Planned in way of TOD & SEZ** (Transit Oriented Developments & Special Economic Zone)
- **Duhai**
- **Murad Nagar** Sufficient Area Available Near Vicinity of these RRTS Stations for Planning of
- **Meerut South** New Developments
- **Modipuram**

Development of Commercial & Educational Hubs and Institution Area along with compatible residential area may be a suitable choice.
Areas for New Development:
- Duhai
- Murad Nagar
- Meerut South
- Modipuram
Area For New Development Around Duhai

Open Land for TOD and SEZ

Open Land for TOD and SEZ
Area For New Development Around Murad Nagar

Open Land for TOD and SEZ

Open Land for TOD and SEZ
Area For New Development Around Meerut South

Open Land for TOD and SEZ

Open Land for TOD and SEZ
Area For New Development Modipuram

Open Land for TOD and SEZ

Open Land for TOD and SEZ
<table>
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<tr>
<th>RRTS Station</th>
<th>Preferable Development</th>
<th>Suitable due to</th>
</tr>
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<tbody>
<tr>
<td>Duhai</td>
<td>Commercial Hub</td>
<td>Located Closer to Delhi</td>
</tr>
<tr>
<td>Murad Nagar</td>
<td>Institutional Area</td>
<td>Nominal Distance from Delhi</td>
</tr>
<tr>
<td>Meerut South</td>
<td>Educational Hub</td>
<td>Distance may not be consideration due to RRTS</td>
</tr>
<tr>
<td>Modipuram</td>
<td>Mixed Type Development As per Required of Meerut City</td>
<td>Located Closure to Meerut and well connected with RRTS</td>
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</tbody>
</table>
Conclusion

Important Aspects:

- Developments should be focused on economical growth
- Last mile Connectivity to be ensure with RRTS
- Park & Ride facilities to be planned sufficiently
- Compatible Residential area to be developed near by
- Long Term Policy Decision by the Govt.
- Presently these areas are being under development in Unplanned way, to avoid this Land acquisition process may be taken-up right now

• Planning should be oriented to
  
  Long Term Capital gain for : Financing of RRTS corridor
  &
  Recurring Return : To Meet the RRTS Operational Expenses

Recurring Return Like Permanent Source of Income Like Taxes on Oil for Maintenance and Development of Highway and Road
Thank you