IMPROVEMENT OF URBAN TRANSPORT SYSTEM IN GREATER JAKARTA (LRT and MRT Progress)

Capacity Building Workshop on Sustainable Urban Transport Index
Dhaka, Bangladesh
September 12-13th 2018

By Selenia E P
1. EXISTING CONDITION

AN OVERVIEW
Greater Jakarta consist of 3 provinces and 9 municipalities.

Greater Jakarta Transport Authority

Total population of Greater Jakarta is 31.7 million people in 2016.
TRAVEL DEMAND IN GREATER JAKARTA

Consist of:
- Inner Jakarta: 23,42 Million trip/day
- Commuter (Outer-Inner): 4,06 Million trip/day
- Other (Pass-through and Inner Suburban): 20,02 Million trip/day

Total Trip in Greater Jakarta: 47,5 Million trip/day
MAJOR TRANSPORT PROBLEMS IN GREATER JAKARTA

PROBLEM:
1. Congestion rising, moda share dominated by private vehicle usage and public transport share remain low.
2. Mass Public Transport services contribution considered low due to lack of provision (actual) and limited budget.
3. Economic losses due to traffic congestion up to USD 1,3 billion (2010) and predicted to be USD 6,5 billion in 2020.
SUSTAINABLE URBAN TRANSPORT INDEX IN GREATER JAKARTA 2017
## Comparing Cities All Indicators

### SUTI Result 2017

<table>
<thead>
<tr>
<th>INDICATORS</th>
<th>GREATER JAKARTA</th>
<th>JAKARTA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>75,00</td>
<td>75,00</td>
</tr>
<tr>
<td>2</td>
<td>21,25</td>
<td>25,00</td>
</tr>
<tr>
<td>3</td>
<td>37,50</td>
<td>62,50</td>
</tr>
<tr>
<td>4</td>
<td>34,62</td>
<td>61,54</td>
</tr>
<tr>
<td>5</td>
<td>94,00</td>
<td>94,00</td>
</tr>
<tr>
<td>6</td>
<td>53,33</td>
<td>63,49</td>
</tr>
<tr>
<td>7</td>
<td>21,83</td>
<td>29,41</td>
</tr>
<tr>
<td>8</td>
<td>100,00</td>
<td>70,00</td>
</tr>
<tr>
<td>9</td>
<td>53,57</td>
<td>53,57</td>
</tr>
<tr>
<td>10</td>
<td>80,73</td>
<td>80,73</td>
</tr>
</tbody>
</table>

Greater Jakarta Transport Authority

**Jakarta** : 61,5

**Greater Jakarta** : 57,2
FUTURE PLAN
(Implementation of SUTI for Greater Jakarta)

**STRONG**
- Extent to which masterplan covers PUBLIC TRANSPORT
- Traffic fatalities
- Investment of Public Transport System
- Greenhouse emission from transport

**WEAKNESS**
- Modal share of active and Public Transport
- Convenient Access to Public Transport Services
- User Satisfaction
- Operation Cost of Public Transport System

**MODERATE**
- Affordability travel cost as part of income
- Air Quality (PM 10)

Greater Jakarta Transport Authority
THE WAY FORWARD

Greater Jakarta Transport Authority
Presidential Decree No. 103/ 2015 concerning the establishment of Jabodetabek Transportation Agency (Jakarta, Bogor, Depok, Tenggerang and Bekasi)

LEGAL BASIS

ROLE AND FUNCTIONS

Develop, manage and improve integrated transportation services in Jakarta, Bogor, Depok, Tangerang and Bekasi by implementing good organizational governance.

In carrying out the duties of the GJTA, it refers to the RITJ stipulated through a Presidential Decree.
1. The use of public transport is 60% of the total movement of people.

2. Travel from origin to destination max 1.5 hours during peak hours.

3. Average speed of 30 km/h at peak hours.

4. The coverage of public transport services in urban areas is 80% of the length of the road.

5. Walking access to public transport max 500 m.

6. Each region has a feeder that is integrated with the trunk through one node.

7. The node must have pedestrian and park and ride facilities, with a max transfer distance 500 m.

8. Maximum 3 times transfer mode in 1 trip.

Greater Jakarta Transport Authority
MAIN TARGET: INCREASING PUBLIC TRANSPORT SHARE

2016: 24%
2019: 32%
2024: 50%
2029: 60%

Greater Jakarta Transport Authority
GREATER JAKARTA TRANSPORTATION MASTERPLAN 2018-2029
(PRESIDENTIAL DECREE 55/2018)
GREATER JAKARTA POLICY DIRECTION

TRAFFIC MANAGEMENT
- Supervision
- Control
- Traffic Information Dissemination

ROAD
- Construction
- Management

PUBLIC TRANSPORT
- Construction
- Regulation
- Integration
- Management

URBAN PLANNING
- TOD
- Land Use Planning
- City Development

Greater Jakarta Transport Authority
DEFINISI ATCS

Sistem Kendali Lalu lintas Kendaraan atau Area Traffic Control System (ATCS) adalah pengontrolan lalu lintas dengan menyelaraskan waktu lampu merah pada jaringan jalan raya dari sebuah kota.
DEVELOPMENT OF PUBLIC TRANSPORT IN GREATER JAKARTA

**OPERATED**
- Commuter Line (CL) PT. KCI
- Bus Rapid Transit (BRT) PT. TransJakarta
- APMS, Soekarno-Hatta Airport
- Airport Train, PT. RailLink

**ON PROGRESS**
- LRT Jabodebek, MOT & Adhi Karya
- LRT JAKPRO, DKI Jakarta Gov’t
- Mass Rapid Transit (MRT), PT. MRT Jakarta

**PLAN**
- Jakarta – Bandung High Speed Train (KCIC)
- LRT Jababeka
- Elevated Loopline
- Double Double Track
Operational Area:
1. Bogor/Depok – Jakarta Kota
2. Bogor/Depok/Nambo – Duri/ Jatinegara
3. Bekasi – Jakarta Kota
4. Rangkasbitung/Maja/ Parung Panjang/ Serpong – Tanah Abang
5. Tangerang – Duri
6. Tanjung Priok – Jakarta Kota

Total route length: 384.5 km (per 23rd May 2017)

New stations operated on 8th October 2017 with total route length 16.6 km

20th September 2017

PT KAI Commuter Jabodetabek (KCJ) has changed its name to PT Kereta Commuter Indonesia (KCI).

The name change highlights the expansion of the commuter line's service. Now it reaches into Cikarang, Bekasi Regency, West Java.

Source: JUPTI Phase 2
Desire Lines (Daily Passenger) – Tuesday, 23rd May 2017

Greater Jakarta Transport Authority

Source: JUPTI Phase 2
GREATER JAKARTA COMMUTER LINE DAILY BANDWITH

HIGHEST DEMAND: BOGOR LINE

Source: JUPTI Phase 2
**BUS RAPID TRANSIT (BRT)**

- **13** BRT Corridors
- **90** Routes
- **325** Self-owned Buses
- **953** Operator Buses
- **12 Million** Monthly Passengers
- **Rp. 3,500,-** Ticketing System

**2017**

*Source: PT. Transportasi Jakarta, JUPTI Phase 2, Greater Jakarta Transport Authority*
TRANSJAKARTA DAILY PASSENGER DEMAND (BY SHELTER)

Source: JUPTI Phase 2

Greater Jakarta Transport Authority
TOD MODEL PROJECT (PORIS PLAWAD)

EFFECTIVITY of Enhancement of PUBLIC TRANSPORT
Poris Plawad will be accessed by Commuter Line, Airport Train, BRT, and intercity bus. There will be one of the important Public transport transit location in the region.

Position on Local government’s Policy
Development of Poris Plawad and Batu Ceper Station has stated in Regional Spatial Plan (RTRW) of Tangerang City.

Location
Some strengths of this area are topography, high resilience, adequate facilities, and land value capture. (Soekarno Hatta International airport and around 1 hour from Jakarta)

Applicability for another TOD project
Poris Plawad is local city transport terminal and it can be applied to local transport hub’s TOD project not only in JABODETABEK but also in Indonesia.

Economy and Society Impact
TOD reduces travel times, congestion, emissions and expanding access to different areas of the city and thus stimulating economic activity.

Poris Plawad is the most appropriate location for TOD Model Project because of its potential, feasibility, and applicability.
4 LIGHT RAPID TRANSIT (LRT)
MOT / PT. ADHI KARYA
1. BASED ON PRESIDENTIAL DECREE NO. 98/2015 PT ADHI KARYA AND PT. KERETA API INDONESIA ASSIGNED TO BUILD

2. TOTAL COST 27 TRILIUN
   IDR 24 TRILIUN FOR INFRASTRUKTUR
   IDR 3 TRILIUN FOR TRAIN

PT. ADHI KARYA AND PT. KAI BEAR BUDGET REQUIREMENT OF 9 TRILIUN AND THE REMAINING 18 TRILIUN BY THE BANKING SYNDICATION
SUBSECTION 2
- 1st sentence: Additional scope of work for Depo
- 2nd sentence: The use of rail road width of 1,435 mm
- 3rd sentence: The construction work of Jabodebek LRT is constructed since signed PERPRESS.

SUBSECTION 3
- The change of flow and process of contractual timeline in LRT JABODEBEK.

SUBSECTION 7
- The payment will be done in every service lines. PT Adhi Karya (Persero) Tbk will be paid after finishing and constructing every service lines.
- The fund will be allocated from Anggaran Belanja Kementerian Perhubungan.
- The contract agreement is done by the ministry of finance.

SUBSECTION 8
- The price includes the bank interest in construction period (during construction) and the payment period.

SUBSECTION 14
- Having License from the related area that is passed by LRT JABODEBEK routes.

SUBSECTION 16
- PT KAI have been assigned as means organizer, operator, and sustainers.
LRT JABODEBEK (AN OVERVIEW)

Greater Jakarta Transport Authority

Total Length - LRT: 81.6 km

6 Service Lines LRT Jabodebek
1. Cawang - Cibubur: 14.3 km
2. Cawang - Kuningan - D. Atas: 10.5 km
3. Cawang - Bekasi Timur: 18.3 km
4. D. Atas - Palmerah - Serayan: 7.8 km
5. Cibubur - Bogor: 25.0 km
6. Palmerah - Grogo: 5.7 km

Schedule

<table>
<thead>
<tr>
<th>Service Line</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cawang - Cibubur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cawang - D. Atas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cawang - Bekasi Timur</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total of Stations: 16
LRT JABODEBEK – SERVICE LINE 1

50% PROGRESS ON AUGUST 2018

Greater Jakarta Transport Authority

LRT JABODEBEK | SERVICE LINE 1

NUMBER OF STATION 4

Sta. TAMAN MINI KM. 05+732
Sta. KPRAMBUTAN KM. 07+150
Sta. CIRacas KM. 08+770
Sta. CIDUBUR KM. 14+230

Total Length 14.5 KM
LRT JABODEBEK – SERVICE LINE 2

PROGRESS ON AUGUST 2018

40%

Greater Jakarta Transport Authority

TOTAL LENGTH
10.5 KM

NUMBER OF STATION 7

Dukuh Atas
Sta. 10+687

Salabudi
Sta. 06+587

Randuna Sadir
Sta. 07+484

Kuningan
Sta. 06+648

Panisran
Sta. 04+294

Cikokol
Sta. 02+100

Cilwung
Sta. 01+407

Cawang
Sta. 00+800
LRT JABODEBEK – SERVICE LINE 3

PROGRESS ON AUGUST 2018

10%

LRT JABODEBEK | SERVICE LINE 3

NUMBER OF STATION 5

Sta. JATICEMPAKA KM. 06+560
Sta. CIKUNIR 1 KM. 09+320
Sta. BEKASI BARAT KM. 13+845
Sta. BEKASI TIMUR KM. 13+400
Sta. CIKUNIR 2 KM. 11+081

TOTAL LENGTH 18.5 KM
LIGHT RAPID TRANSIT (LRT)
PT. JAKPRO
PROJECT PROFILE

1. BASED ON PRESIDENTIAL DECREE NO. 99/2015 PROVINCE GOVERNMENT OF JAKARTA TO ASSIGNED REGIONAL OWNED ENTERPRISES TO BUILD AND OPERATE RAILWAY

2. GOVERNOR DECREE NO. 213/2015 AND NO. 211/2016 ASSIGN PT. JAKRPO TO DEVELOP LRT

3. TOTAL COST 6,8 TRILIUN RUPIAH (LOCAL BUDGET – JAKARTA PROVINCE GOVERNMENT)
PROJECT PROFILE

7 CORRIDOR LRT NETWORK PLAN

- Total length of track for Asian Games 2018: ± 5.8 km (including Depo)
- Number of station LRT: 6 Elevated Station

Greater Jakarta Transport Authority
MASS RAPID TRANSIT (MRT)

PT. MRT JAKARTA
PROJECT PROFILE

BASED ON
REGIONAL
DECREE
3/2008

CONSIST OF:
1. NORTH – SOUTH CORRIDOR
2. WEST-EAST CORRIDOR

1. Selatan – Utara (Lebak Bulus - Bund Hi – Kampung Bandan)
   - Koridor: Lebak Bulus – Bund. Hi – Kampung Bandan
   - Panjang Jalur: ± 25 Km
   - Metode
   - Konstruksi: Layang & Bawah Tanah
   - Jumlah Stasiun: 21 (termasuk 2 Depo)

2. Timur – Barat
   - Koridor: Cikarang – Balaraja
   - Panjang Jalur: ± 87 Km
   - Jumlah Stasiun: 41

   Fase I
   - Panjang Jalur: ± 27 Km
   - Metode Konstruksi: Layang & Bawah Tanah
   - Jumlah Stasiun: 22 (termasuk 2 Depo)

Greater Jakarta Transport Authority
# PROJECT FUTURE JAKARTA MRT PHASE I

## INFORMATION

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel Time</td>
<td>± 30 minutes</td>
</tr>
<tr>
<td>Track Length</td>
<td>± 16 km</td>
</tr>
<tr>
<td>Distance between stations</td>
<td>0.8 – 2.2 km</td>
</tr>
<tr>
<td>Headway</td>
<td>5 minutes (2019)</td>
</tr>
<tr>
<td>Operation Hours</td>
<td>05:00 – 24:00</td>
</tr>
<tr>
<td>Targeted Passengers</td>
<td>173,400 passengers/day</td>
</tr>
<tr>
<td>Rolling Stock</td>
<td>16 train sets (96 cars)</td>
</tr>
<tr>
<td></td>
<td>1 set = 6 cars</td>
</tr>
<tr>
<td>Track Gauge</td>
<td>1.067 mm</td>
</tr>
<tr>
<td>Electricity</td>
<td>60 MVA</td>
</tr>
</tbody>
</table>

## Train Operation

- **Automatic Train Operation (ATO)**

## Signalling System

- **Communication-Based Train Control (CBTC)**

## Maximum Speed

- 100 km/h (Elevated corridor)
- 80 km/h (Underground corridor)

(Average: 32 km/h)

## Operation will start on:

- **March 2019**
CONSTRUCTION PROGRESS PER JUNE 2018

92.54 %  
DEPO & ELEVATED SECTION  
CP 101 – CP 103

96.87 %  
UNDERGROUND SECTION  
CP 104 – CP 106

OVERALL  
94.69 %
PROJECT PROGRESS PICTURES

INTERIOR OF ROLLING STOCK

SIGNAL TRIAL IN DEPO

ENTRANCE DUKUH ATAS STATION
# Benchmarking to Get International Standard

**PERDA NO. 3 TAHUN 2008 (Pasal 5)**

"Pada saat Perkeretaapian Umum Perkotaan MRT Jakarta mulai dioperasikan, Perseroan berkontrak dengan Pemprov DKI Jakarta untuk memberikan pelayanan sesuai dengan standar pelayanan yang disepakati dengan mengacu kepada standar internasional."

<table>
<thead>
<tr>
<th>Country</th>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jepang</td>
<td>Operation &amp; Maintenance Consulting Services</td>
</tr>
<tr>
<td>Hongkong</td>
<td>Rail + Property MRT Academy</td>
</tr>
<tr>
<td>India</td>
<td>Risk Management</td>
</tr>
<tr>
<td>Singapura</td>
<td>Construction &amp; Engineering</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Drivers Training</td>
</tr>
</tbody>
</table>

Dilakukan *benchmark* terhadap operator perkeretaapian urban lain untuk menentukan tingkat layanan yang harus dicapai oleh MRT Jakarta.
THANK YOU

DHANYABADA