1. HIGH SPEED TRAIN JAKARTA - SURABAYA
2. URBAN TRANSPORT (LRT & MRT)
3. BUS RAPID TRANSIT (BRT) DEVELOPMENT
THE JAVA NORTH LINE UPGRADING PROJECT
STAGE OF THE JAVA NORTHERN LINE UPGRADING PROJECT

- **PHASE 1**
  - New Single Track 435.4 km
    - Vmax 160 km/h
    - Travel Time 3h 21m

- **PHASE 2**
  - New Single Track 713.2 km
    - Vmax 160 km/h
    - Travel Time 5h 30m

- Existing Track 277.8 km
  - Vmax 120 km/h
  - Travel Time 3h 29m
Main Station: Manggarai, Cirebon, Semarang and Surabaya Pasarturi.

Operation Station (loops): 25 stations - for Cikampek, Pekalongan, and Bojonegoro Station will be used for boarding and alighting passengers (option for JS60 and JS70).
### INTEGRATIONS MODEL IN URBAN TRANSPORT DEVELOPMENT PROGRAM

<table>
<thead>
<tr>
<th>No</th>
<th>Program</th>
<th>Institutional (arrangement between operators)</th>
<th>Operational (schedule, tarif, transfer of passenger)</th>
<th>Physical (Access facilities, locations, design)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LRT Jabodebek</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>2</td>
<td>LRT Jakarta</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>3</td>
<td>LRT Palembang</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
<tr>
<td>4</td>
<td>MRT Jakarta</td>
<td>√</td>
<td>√</td>
<td>√</td>
</tr>
</tbody>
</table>

**Remarks:**

a. Institutional integrations : Arrangement /contract between stakeholders in fulfilling commitments to transportation service provider

b. Operational integrations : Coordinating dan planning of public transportations by minimizing distance and travel time for comfortable transportations.

c. Physical integrations : Physical changes to accommodate passenger transit between convenient transfer locations.
**Track & Stations**

**CAWANG – CIBUBUR line**

- **Length of track:** 14.89 km
- **Stations 4 Locations**
  1. TMII stations
  2. KP. Rambutan stations
  3. Ciracas stations
  4. Harjamukti stations

**CAWANG – DUKUH ATAS line**

- **Length of track:** 11.05 km
- **Stations 8 Locations**
  1. Cawang stations
  2. Ciliwung stations
  3. Cikoko stations
  4. Pancoran stations
  5. Kuningan stations
  6. Rasuna Said stations
  7. Setiabudi stations
  8. Dukuh Atas stations

**CAWANG – BEKASI TIMUR line**

- **Length of track:** 18.49 km
- **Stations 5 Locations**
  1. Jati Bening Baru stations
  2. Cikunir 1 stations
  3. Cikunir 2 stations
  4. Bekasi Barat stations
  5. Jatimulya stations

**Depo LRT Jatimulya**

Source: KP. 377/2018

Construction start: September 2015
Target Finish Construction: Mei 2021

**TRACK OF LRT JABODEBEK**
PROGRESS of 21 June 2019

TOTAL PROGRESS 63,992%

Cawang – Dukuh Atas line 53,016
Cawang – Bekasi Timur line 57,897
Cawang – Cibubur line 83,727
## FINANCING SCHEME

### PROJECT COST

- Infrastructure: Rp 25.7 T
- Facilities: Rp 4.2 T
- Infrastructure Maintenance: Rp 25.7 T
- Depo + 17 Stations: Rp 4.2 T

### PROJECT FUNDING

<table>
<thead>
<tr>
<th>Source</th>
<th>Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMN</td>
<td>Rp 7.6 T</td>
</tr>
<tr>
<td>PT. KAI</td>
<td>Rp 1.4 T</td>
</tr>
<tr>
<td>PT. Adhi Karya</td>
<td>Rp 9.0 T</td>
</tr>
<tr>
<td><strong>Total PMN</strong></td>
<td><strong>Rp 9.0 T</strong></td>
</tr>
<tr>
<td>Bank Loan</td>
<td></td>
</tr>
<tr>
<td>PT. KAI</td>
<td>Rp 18.1 T</td>
</tr>
<tr>
<td>PT. Adhi Karya</td>
<td>Rp 2.8 T</td>
</tr>
<tr>
<td><strong>Total loan</strong></td>
<td><strong>Rp 20.9 T</strong></td>
</tr>
</tbody>
</table>

### Total Project Cost: Rp 29.9 T

### Total Funding: Rp 29.9 T

Source: Agreement between DGR and PT. KAI concerning the Implementation of integrated LRT Infrastructure in the Jakarta, Bogor, Depok and Bekasi Areas No. HK.201 / A.566 / DJKA / 12/17 and No. KL.705 / XII / 10 / KA-2017
LRT Jabodebek will also be integrated with a number of Transjakarta shelters in the DKI Jakarta area and plans for the High Speed Rail (HSR) Jakarta Bandung station in Cawang.

TOD PLAN IN JABODEBEK LRT ROAD

1. Bekasi Timur
2. Bekasi Barat
3. Cikunir
4. Cikunir 2
5. Jaticempaka
6. Cibubur
7. Ciracas
8. Ciracas PPD
9. Taman Mini
10. Kampung Rambutan
11. Cawang
12. Cikoko
13. RNI Pancoran

Operational target: 2021
LRT DKI JAKARTA

DESCRIPTIONS
▪ Jakarta LRT is one of the National Strategic Projects in accordance with Presidential Regulation No. 3/2016 which was last amended through Presidential Regulation No. 56/2018
▪ Phase 1 of the Jakarta LRT development of 5.8 Km with 5 elevated stations and 1 depot for the maintenance of LRVs (Light Rail Vehicles);
▪ In the initial stage, there will be 16 LRVs articulates or 8 train sets (1 train set = 2 LRVs), with 5-15 minute headways.
▪ Jakarta LRT, development program by the DKI Provincial Government, with the first priority operating 1 phase-1 corridor to support ASIAN Games 2018

PROJECT BEARER:
▪ Provincial Government of DKI Jakarta.
▪ PT. Jakarta Propetindo as an implementers project and PT. LRT Jakarta as an infrastructure and facilities operator.

VALUE OF DEVELOPMENT BENEFITS
▪ Reducing road congestion in urban areas.
▪ As an alternative transportation to encourage shifting modes
▪ Provision of modern and environmentally friendly transportation.

STATUS:
▪ Infrastructure Progress per- 21 Maret 2019 is ± 95% (including operating facilities and depots)
▪ Progress of the facility per- 21 Maret 2019 is 99%

OPERATIONAL TARGET: End of 2019
LRT Jakarta Specifications:
Standard Gauge: 1435 mm
Electricity: PLN 750 VDC (Premium)
Traction distributions: 3rd rail
Maximum speed: 90 km/hours
Capacity of passengers: 270 / trainset
3 bogie / trainset
Operational Scheme

Length of track: 5.8 Km (Rawamangun to Kelapa Gading)

1 depo for Light Rail Vehicle (LRV)
Including Bogie and General Warehouse, APSS, Stabilng Yard, Light and Heavy Maintainance

- Operational time:
  - weekdays: 06.00 – 22.00 WIB
  - weekend: 07.00 – 23.00 WIB
- Headway: 5 - 15 Menit on weekdays and holiday
- Travel time: 13 Menit

6 Elevated stations
- Pegangsaaan Dua
- Boulevard Utara
- Boulevard Selatan
- Pulomas’Equestrian
- Veldrome

- 3 LRV in operational time
- With capacity up to 810 passengers

- 1 LRV in normal time
- With capacity up to 270 passengers

Trip and target ridership:
- 245 – 282 trip/day
- 14.225 passengers /day (2019)

Integration Plan:
LRT Jakarta (Station Velodrome) & Transjakarta (Koridor 4)
LRT SUMATERA SELATAN

1. SkyBridge Constructions (Sultan Mahmud Badaruddin 2 airport)
2. LRT stations integrated with Trans Musi shelter
3. LRT stations integrated with river transport

- 1 Train Set consist of 3 train (stamformations: MC - T - MC)
- Motor Car (MC) = 40 seat+ Max 102 standing
- Trailer Car (TC) = 50 seat+ Max 100 standing
- 1 Train Set capacity = 130 seat + Max 304 standing = Max 434 passengers

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**Skybridge Bandara Sultan Mahmud Badaruddin 2**

**Integrations LRT & River Transport**

**Integrations LRT & Trans Musi shelter**
**INFRASTRUCTURE LRT SUMATERA SELATAN**

<table>
<thead>
<tr>
<th><strong>Length of track</strong></th>
<th>23.4 km (Lebar Jalur 1067) , (Electricity : Third rail 750 VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Route</strong></td>
<td>Bandara Sultan Mahmud Badaruddin II – Stadion Jakabaring – Depo Jakabaring</td>
</tr>
<tr>
<td><strong>Stations &amp; Depot</strong></td>
<td>13 unit stations, 9 unit substation &amp; 1 unit depo</td>
</tr>
<tr>
<td><strong>Constructions</strong></td>
<td>Elevated / Layang (Konstruksi Beton, Slab Track)</td>
</tr>
<tr>
<td><strong>Facilities</strong></td>
<td>8 Trainset (6 operations 2 Alternative)</td>
</tr>
<tr>
<td><strong>Operational Scheme</strong></td>
<td>18 hours</td>
</tr>
<tr>
<td><strong>Signaling</strong></td>
<td>Fixed Block (ETCS – Level 1)</td>
</tr>
<tr>
<td><strong>Financing</strong></td>
<td>Rp. 10.9 T (APBN 2017 – 2020)</td>
</tr>
</tbody>
</table>

Start Construction on Oktober 2015
Length of track from Bandara station – DJKA stations
23.4 Km (13 Stations)

- Operational Hours:
  04.00 – 22.20 WIB
- Headway: 24 Minutes
- Travel Time: 42 Minutes

- Trip per day: 108 Trips
  6 trainset/day, 2 trainset alternative

- Bandara SMB II stations – DJKA stations Rp. 10,000,-
- Asrama Haji stations – DJKA stations Rp. 5,000,-
- Asrama Haji stations – DJKA stations Rp. 2,000,-
  (Integrasi antar moda Trans Musi dan DAMRI)
Graph of the number of LRT SUMSEL passengers

- **Average Passengers**: 4,666 (Oct) - 5,190 (Nov) - 6,001 (Dec) - 4,740 (Jan)
- **Average Passengers on Weekend**: 8,151 (Oct) - 7,390 (Nov) - 7,565 (Dec) - 6,104 (Jan)
- **Average Passengers on Weekdays**: 3,454 (Oct) - 4,390 (Nov) - 5,256 (Dec) - 4,266 (Jan)

- **Trend Passenger per day**: 1.95%
- **Trend Passenger Weekend**: -8.76%
- **Trend Passenger Weekday**: 9.33%

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PERCENTAGE</th>
<th>Oct-18</th>
<th>Nov-18</th>
<th>Dec-18</th>
<th>Jan-19</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPARTURE ACCURACY</td>
<td>%</td>
<td>88</td>
<td>86</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>ARRIVAL ACCURACY</td>
<td>%</td>
<td>70</td>
<td>84</td>
<td>94</td>
<td>96</td>
</tr>
</tbody>
</table>
DEVELOPMENT OF MRT JAKARTA NORTH – SOUTH CORRIDOR

DESCRIPTIONS:
- MRT Jakarta is one of the National Strategic Projects in accordance with Presidential Regulation No. 3/2016 which was last amended through Presidential Regulation No. 56/2018.
- MRT Jakarta North – South Corridor ±24.7 km consists of Phase I Lebak Bulus - Bundaran HI (15.7 km) and Phase II Bundaran HI - Jakarta Kota - Kampung Bandan (9 km).
- The Jakarta North - South MRT Phase I that has been operating consists of a 9.8 km elevated construction and 5.9 km underground.

VALUE BENEFITS OF DEVELOPMENT
- Reducing traffic density through mode transfers;
- City economic growth;
- Realizing a modern and environmentally friendly transportation alternative

PROJECT BEARER:
- DJKA Kemenhub (Executing Agency), Pemprov DKI Jakarta (Implementing Agency), PT. MRT Jakarta (Sub-Implementing Agency).

TIMELINE PROJECT:
- 2019 MRT North-South Phase I
- 2024* MRT North-South Phase II
- 2026-2027 MRT East-West

*)Groundbreaking on 24 March 2019 by President
FINANCING MRT JAKARTA NORTH – SOUTH CORRIDOR (PHASE 1)

- **Financing**: LOAN JICA
- **Total Cost**: ¥125,237,000,000 (Eq.= Rp13,776,070,000,000)

**Financing Scheme**:
- Central Government: ¥61,366,000,000 (49%) (Eq.= Rp6,750,260,000,000)
- Provincial Government: ¥63,871,000,000 (51%) (Eq.= Rp7,025,810,000,000)

- **STATUS**: On Granting dan On Lending

- **Scope of Work**:
  - Study of project planning and FS;
  - Construction of basic infrastructure / railway
  - Provision of rolling stock;
  - Signaling system;
  - Other Facilities;
  - Project Supervision.

**Notes**:
- Not included Variation Order and Price Adjustment ¥21,544,000,000
- ¥1 = Rp. 110
<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headway: 10 mnt</td>
<td>Headway: 5-10 mnt</td>
</tr>
<tr>
<td>Total Trainset: 7 op+</td>
<td>(5 mnt at peak hour 07.00 - 09.00 &amp; 17.00 - 19.00)</td>
</tr>
<tr>
<td></td>
<td>Total Trainset: 14 op+ 2 alt</td>
</tr>
<tr>
<td>Total trip: 191 trips/day</td>
<td>Total trip: 285 trips/day (weekday), 219 trips/day (weekend)</td>
</tr>
<tr>
<td>Operational hour: 05.30-22.30</td>
<td>Operational hour: 05.00-24.00</td>
</tr>
<tr>
<td>Travel time: ±30 mnt</td>
<td>Travel time: ±30 minute</td>
</tr>
</tbody>
</table>

*Rates are set by the Governor of DKI Jakarta with the approval of the DKI Jakarta DPRD.

Passengers target 130,000 /day
BUS RAPID TRANSIT DEVELOPMENT IN INDONESIA
## Indonesia Urban Potential

### Potential of Urban Area

| Population | 4th largest in the world  
Significantly increase since 1980 |
| Market Economy | 2012: 16th  
2030: 7th  
Potential consumption contribution for economy growth |
| Urban Population Ratio | 2012: 52% national pop. (244.3 mio.)  
2045: 69% national pop. (318.9 mio.)  
Increasing urban attractiveness |
| National GDP Contribution | 2012: 74% national GDP  
2030: 86% national GDP  
The urban economy substantial contribution for national economy |

### Comparison of World Urban Population

**Jakarta One of the Largest Metropolitan in the World**

- The population of Jakarta Metropolitan (Jabodetabek) 2nd after Tokyo Metropolitan

**Population 2014 (In million pax)**

- Bangkok: 9.09
- Seoul: 9.44
- Metro Manila: 12.76
- Beijing: 19.52
- Delhi: 24.95
- Jakarta: 30.24
- Tokyo: 37.83

**Population 2014 (In million pax)**

- Bangkok: 244.3 mio.
- Seoul: 244.3 mio.
- Metro Manila: 318.9 mio.
- Beijing: 318.9 mio.
- Jakarta: 318.9 mio.
- Tokyo: 318.9 mio.

**Market Economy**

- 2012: 52% national pop.  
- 2030: 69% national pop.  
- Potential consumption contribution for economy growth

**Urban Population Ratio**

- 2012: 74% national GDP  
- 2030: 86% national GDP  
- The urban economy substantial contribution for national economy

---

Source: Indonesia Urban Story, World Bank, 2015; Bappenas, Vision of Indonesia 2045
THE CITY WITH INADEQUATE TRANSPORTATION SYSTEMS WILL BE REDUCING THE QUALITY OF LIFE OF THE COMMUNITY AND ECONOMIC ACTIVITIES IN THE CITY BECOME INEFFECTIVE AND NOT EFFICIENT

THE STOP-START INDEX
RESEARCH ON IDLING TIME REVEALED THAT CITY** DRIVERS AROUND THE WORLD ARE SPENDING ON AVERAGE UP TO A THIRD OF THEIR JOURNEY IDLING**.

Cities with the worst stop-start traffic:
1. Jakarta, Indonesia (33,240)
2. Istanbul, Turkey (32,520)
3. Mexico City, Mexico (30,840)
4. Surabaya, Indonesia (29,880)
5. St. Petersburg, Russia (29,040)
6. Moscow, Russia (28,680)
7. Rome, Italy (28,680)
8. Bangkok, Thailand (27,480)
9. Guadalajara, Mexico (24,640)

Source: The Castrol-Magnatec Stop-Start Index

The world's worst traffic: can Jakarta find an alternative to the car?
Congestion (Economic Losses>5 Billion$/year)

- Economic losses due to Jakarta congestion reach $2.6 billion per year (2017).
- In DKI Jakarta Urban air quality indicators such as PM10 increased by 20%, CO increased by 70%, and NO2 increased almost four TIMES in 2008-2013.

Modal share of public transport (Case: Jakarta is very low<20%)

<table>
<thead>
<tr>
<th></th>
<th>Rail</th>
<th>Non-Rail Public Transport</th>
<th>Private Transport</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jakarta (2010)</td>
<td>2%</td>
<td>19%</td>
<td>62%</td>
<td>23%</td>
</tr>
<tr>
<td>Hong Kong (2011)</td>
<td>25%</td>
<td>48%</td>
<td>3%</td>
<td>11%</td>
</tr>
<tr>
<td>Tokyo (2009)</td>
<td>19%</td>
<td>29%</td>
<td>29%</td>
<td>37%</td>
</tr>
<tr>
<td>Singapore (2011)</td>
<td>19%</td>
<td>29%</td>
<td>23%</td>
<td>48%</td>
</tr>
</tbody>
</table>

Strategy for Urban Transport Development

National target: increase modal share of public transport by 32% in 2019 contributes to GHG emission reduction target of 29% + 11% in 2030

"The development of urban transport needs to be integrated with mass transit support and Transit Oriented Development infrastructure facilities as well as utilization of technological developments."

Avoid

- Travel management with urban planning with mixed use concept
- Infrastructure Development Transit Oriented Development (TOD) - A source of urban transport finance

Shift

- Promote Shifting to Public Transport with Inclusive Design
  - Increase the use of Public Transport, Pedestrian, and Bicycles
  - Develop and improve Public Transport and non-motorized level of service

Improve

- Increasing the energy efficiency of vehicles, fuels and transport operations
  - Energy-saving technologies (fuel)
  - Development and application of Intelligent Transportation Systems (ITS) Development
# National Intervention for Urban Transport Development

## Mass Transit Improvement

- **✓ Rail Based Mass Transit**
  - MRT Jakarta Phase I (operation in 2019):
    - Project investment: 1.1 billion USD
  - South Sumatera LRT (operation in 2018):
    - Project investment: 750 million USD
  - Jabodebek LRT (operation in 2020):
    - Project investment: 2 billion USD
- **✓ Road Based Mass Transit**
  - Transit system in 25 cities
  - BRT international standard in Jakarta with total pass/day = 450,000
  - Pilot BRT international standard in 5 cities
- **✓ LRT and BRT Medan: PPP Project**
  - Project investment: 15 billion USD

## Digitalization of Public Transport

- **✓ Public Transport**
  - Integrated ticketing system with electronic payment
  - Real time timetable
- **✓ Ride-hailing**
  - Private operator ride-hailing:
    - 2 biggest operator
    - Driver > 1 Mio.
  - Public owned apps (under preparation)
- **✓ Regulation for ride-hailing (Minister Regulation #108/2017):**
  - Fare
  - Quota
  - Operational area
  - Safety and security
  - Database

## Financial Support

- **✓ Framework for urban public transport:**
  - National Policy: Medium-term plan, presidential regulation (on-going)
  - Principle:
    - Increase city ownership
    - Cost-sharing
  - Selection criteria:
    - Eligibility, readiness, and viability
- **✓ Financing**
  - National government support: infrastructure max. 100%
  - Cities responsibilities: Operation and maintenance
MASS TRANSIT IMPROVEMENT

01. Allocated buses to stimulate local governments in the development of BRT-based urban mass transport

02. Allocated school buses to provide safe and comfortable transportation for students

03. Road-based mass transport development plan in urban area through Buy The Service Scheme
Example

- Private vehicle and freight transport restriction (odd-even license plate) in Greater Jakarta (Jabodetabek) Area - Pilot during ASIAN Games
  - Applied in the major road network including toll gate from Greater Jakarta
  - Extensive timeframe (Mo-Su - 06-19)
  - Result:
    - Increase in traffic flow 44.08% in main road but 2.17% less in alternative road
    - Reduce in VC Ratio 20.37% in main road but increase VC Ratio 6.48% in alternative road
    - CO2 emission reduction 20.3% in main road but CO2 emission increase 6.95% in alternative road
  - Replicated to additional cities applying odd-even licence plate restriction (Medan, Bandung, Surabaya, Makassar)
- Pilot bike-sharing in Bandung and Central Jakarta
THANK YOU

MINISTRY OF TRANSPORTATION OF INDONESIA