Regional Expert Group Meeting on SUSTAINABLE AND INCLUSIVE TRANSPORT DEVELOPMENT and 2nd BRTS CONFERENCE
During 29 SEPTEMBER - 1 OCTOBER 2014
At Marriott Hotel, Ahmedabad, INDIA

Thailand Experience on Developing of Sustainable and Inclusive Transport Development
29 September 2014

Malee Uabharadorn, PhD
Office of Transport and Traffic Policy and Planning
Ministry of Transport, Thailand
### Existing Transport Network in Thailand

<table>
<thead>
<tr>
<th></th>
<th>Highways</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Road Length (km)</strong></td>
<td>Expressway</td>
<td>152.90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Motorway</td>
<td>207.90</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Road Length (km)</strong></td>
<td>Rural roads</td>
<td>47,916</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Local roads</td>
<td>352,157</td>
<td></td>
</tr>
<tr>
<td><strong>Waterway Length (km)</strong></td>
<td>Coastal</td>
<td>2,614</td>
<td></td>
</tr>
<tr>
<td></td>
<td>River</td>
<td>1,750</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Canal</td>
<td>883</td>
<td></td>
</tr>
<tr>
<td><strong>Rail Length (km)</strong></td>
<td>Single track</td>
<td>3,763</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2/3 tracks</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td><strong>Airport Terminal</strong></td>
<td>AOT</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DCA</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bangkok Airways</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Royal Thai Navy</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
In 2012 Logistics cost : GDP = 14.40%
Transport Cost capture 7.4% of GDP

Transport costs (Baht per ton-km) (2013)

- Road: 2.12
- Rail: 0.95
- Water: 0.65
- Air: 10.00

Source: NESDB, 2012

Administration Cost/ GDP
Inventory Cost/ GDP
Transport Cost/ GDP

Source: OTP
Transport Logistics Gateway

1. Develop major seaport LCB, Pakbara Landbridge (Pakbara-Songkhla 2), Coastal

2. Increase
   - Road network to support all major strategic and Economic Nodes
   - International gateway (Suvanabbum int. & Regional airport)

3. Support border gateway in the North, Central/Eastern, North East, and South...
   “Thailand the Center State and Crossroads of ASEAN”
Ministry of Transport Strategic Goal

Social stability

Utilization of infrastructure under AEC Regime

Strategic goals

Economic stability

Security and safety in travel and transport
Thailand’s Transport Infrastructure Development Strategy 2015-2022

1. Intercity Rail Network Development

3. Enhancing highway competency to link the main production bases of Thailand and neighboring countries

2. Public Transport Network Development to solve traffic congestion in greater Bangkok region

4. Water Transport Network Development

5. Enhancing Air Transport Capability

Sustaining happiness for the people
# National Transport Infrastructure Development Planning

## Plan 1: Intercity rail network development

1.1 Structural and facilities improvement

1.2 Double Track Development

### Ten Metro lines

2.1 Purchase 3,183 NGV fuel buses and plan new depots

2.3 Construction of roads and bridges in greater Bangkok region

## Plan 2: Public Transport Network Development to solve traffic congestion in the greater Bangkok region

2.1 Ten Metro lines

## Plan 3: Enhancing highway competency to link the main production bases of Thailand and neighboring countries

3.1 Accessibility for agricultural and tourist attractions area

3.2 Connectivity between hub and main production bases

3.3 Connectivity between gateways

3.4 Development of facilities for road transport and a seamless multi-modal transport system

## Plan 4: Water Transport Network Development

4.1 Port development

4.2 Enhancing efficiency of water transport and maintaining embankments

## Plan 5: Enhancing Air Transport Capability

5.1 Increase airport capacity

5.2 Enhancing the air traffic management system to meet international standards

5.3 Fleet optimization

5.4 Airport Logistics Park Development

5.5 Human resource development for civil aviation
Thailand: in 2010 the total energy was 71 Mil tons at a cost of 21,875 Mil US$ the total energy used in the industrial and transport sector was 36% & 35%
## Loss due to Accident in Transport Sector

<table>
<thead>
<tr>
<th>Transport mode</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road</td>
<td>11,561</td>
<td>10,717</td>
<td>7,468</td>
<td>9,205</td>
<td>8,675</td>
</tr>
<tr>
<td>Rail</td>
<td>160</td>
<td>145</td>
<td>87</td>
<td>104</td>
<td>106</td>
</tr>
<tr>
<td>Water</td>
<td>54</td>
<td>31</td>
<td>6</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Air</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>11,775</td>
<td>10,894</td>
<td>7,562</td>
<td>9,329</td>
<td>8,795</td>
</tr>
</tbody>
</table>

Source: Ministry of Transport, 2013 (www.mot.go.th)

According to the Global Status Report on Road Safety, Thailand was the 3rd ranking in the world for road accidents.

The World Bank estimates the annual cost of accidents up to be 7,250 mil US$.

- Fatalities account for 165,625 US$
- Disability injuries account for 193,750 US$
High Priority Projects Starting in 2014/2015

1. Transport Network Connectivity
   1) Transport network system connecting to Gateways (International gateways, border gateways and road network connecting gateways)
   2) Develop transport network system connecting to Regional hubs
   3 Solving traffic problem in Greater Bangkok Region with Mass Transit System

2. Double Tracks and Railway Development
Existing Mass Rapid Transit (100 kms)

- Mo Chit - Onnut - National Stadium - Taksin Bridge: 24 km
- Bang Sue - Hualumphong: 20.8 km
- Bang Sue - Taling Chan: 15 km
- Taksin Bridge - Bang Wa: 7.5 km
- Onnut - Baring: 5.25 km
- Airport Rail Link: 28 km
Greater Bangkok Region: Mass Rapid Transit System

1. Thammasat University-Hualumphong (42.8 km)
2. Salaya - Hua Mak (54 km)
3. Airport Link (50.3 km)
4. Lamlukka - Bang Pu (60 km)
5. National Stadium - Bang Wa (14.5 km)
6. Bang Sue - Tha phra - Bangkae (47 km)
7. Bang Yai - Rat Burana (42.8 km)
8. Charansanitwong-Rajdumnen - Thailand Cultural Centre - Minburi (32.5 km)
9. Khae rai - Minburi (36 km)
10. Lat Phrao - Samrong (30.4 km)

Ten Metro routes (open by Dec 2019) with the total length 410 km
### Statistics on passenger’s travel in Bangkok, Thailand
*(as of March 22, 2014)*

<table>
<thead>
<tr>
<th>Mode of Transportation</th>
<th>Average passenger/day</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>By Bus (public &amp; private operation)</strong></td>
<td><strong>3,037,335</strong></td>
</tr>
<tr>
<td>By MRT</td>
<td>260,000</td>
</tr>
<tr>
<td>Airport Rail Link</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>BTS</strong></td>
<td>684,000</td>
</tr>
<tr>
<td><strong>Sub-urban train</strong></td>
<td>32,411</td>
</tr>
<tr>
<td>Water transport: Express boat through Chao Phraya river</td>
<td>37,500</td>
</tr>
<tr>
<td>Water transport: Daily engine-boat daily service in Saen Saeb Canal</td>
<td>47,000</td>
</tr>
<tr>
<td>Bus – truck – private car using the elevated road (no. of car)</td>
<td>2,597,808</td>
</tr>
</tbody>
</table>

*Source: [www.mot.go.th](http://www.mot.go.th)*
<table>
<thead>
<tr>
<th><strong>Concept:</strong></th>
<th>separate BRT system out of traffic flow by constructing the BRT lane in the center edge of the street with the station for transferring the huge passengers and manage by using the ITS.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction:</strong></td>
<td>in 2007</td>
</tr>
<tr>
<td><strong>Operation:</strong></td>
<td>³ System test on May 29, 2010 ³ Start operation on Jan 2, 2011 ³ Ticket fee charge according to the distance ³ Tickets fee from 12-20 Baht</td>
</tr>
<tr>
<td><strong>Total service length:</strong></td>
<td>15.90 km. (9.90 Miles) with 12 Stations, Sathon to Ratchaphruek</td>
</tr>
<tr>
<td><strong>Bus body:</strong></td>
<td>total length 12 meter with the width of 2.5 meter and the height of 3.2 meter (EURO 2 standard)</td>
</tr>
<tr>
<td><strong>Facilities:</strong></td>
<td>32 seats with CCTV to monitor inside Bus</td>
</tr>
</tbody>
</table>
Ministry of Transport
Vision: Toward Sustainable Transport
Transport and Traffic Development Master Plan 2011 - 2020

Economic prosperity
- Decrease economic loss (VOT, VOC)
- Increase Competitiveness

Environmental friendly
- Energy saving
- Energy efficiency
- Reduce air emission & GHGs reduction

Social & Quality of life
- Safety, accessibility
- Equity, Sufficiency

Sustainable Transport
Master Plan for Sustainable Transport System And Mitigation of Climate Change Impacts

S1: Upgrade capability of agencies and personnel for the development of an environmentally sustainable transport system

S2: Establish appropriate plans/mechanisms for interfacing/monitoring of transport and traffic work plans/measures/projects; and to move them forward to implementation.

S3: Establish comprehensive and inter-connected transport infrastructure

S4: Efficient transport management for sustainability and greenhouse gas reduction

S5: Promote transport research and development as well as adaptation of environment-friendly innovations and
Barriers to Sustainable Transport

Ø Policy Barriers
Ø Institutional Barriers
Ø Technical Barriers
Ø Market Barriers
Ø Economic and Financial Barriers
Ø Information Barriers
Barrier Removal Activities

Ø **Capacity building** (e.g., financial evaluation, technology application, energy-integrated urban transport planning)

Ø **Institutional strengthening** (e.g., regulatory frameworks, vehicle emission standards)

Ø **Investments** (e.g., demonstration & replication projects)

Ø **Training** (e.g., design, operation, maintenance of vehicles and transport systems)

Ø **Targeted research** (e.g., adaptation of technologies, techniques, practices to local conditions)
Thailand Mega Project on Transport Infrastructure Development with USD 67 Billion

MRT in Bangkok and It’s Vicinities