The current state of urban public transport in Bangkok and major cities in Thailand

Regional Meeting on Just Transition to Low Carbon Mobility in Asia and the Pacific

and

Joint Workshop on Electrification of Public Transport

10 - 11 August 2022

Siradol Siridhara, Mahidol University
BANGKOK
Public Transportation

Metro Systems

<table>
<thead>
<tr>
<th>Line</th>
<th>Stations</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Green Line</td>
<td>32</td>
<td>39.5 km</td>
</tr>
<tr>
<td>Dark Green Line</td>
<td>13</td>
<td>14.7 km</td>
</tr>
<tr>
<td>Blue Line</td>
<td>26</td>
<td>47.0 km</td>
</tr>
<tr>
<td>Purple Line</td>
<td>16</td>
<td>23.6 km</td>
</tr>
<tr>
<td>Airport Rail Link</td>
<td>8 Stations</td>
<td>28.6 km</td>
</tr>
<tr>
<td>Dark Red Line</td>
<td>10</td>
<td>22.6 km</td>
</tr>
<tr>
<td>Light Red Line</td>
<td>3</td>
<td>15.0 km</td>
</tr>
<tr>
<td>Gold Line</td>
<td>3</td>
<td>2.7 km</td>
</tr>
</tbody>
</table>

Total ridership (approx.) 1500000 trips/day (2019)

*Not yet opened in 2019
## BANGKOK Public Transportation

### Metro Systems

<table>
<thead>
<tr>
<th>Line</th>
<th>Stations</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Green Line</td>
<td>55</td>
<td>66.5 km</td>
</tr>
<tr>
<td>Dark Green Line</td>
<td>20</td>
<td>22.5 km</td>
</tr>
<tr>
<td>Blue Line</td>
<td>42</td>
<td>55.0 km</td>
</tr>
<tr>
<td>Purple Line</td>
<td>32</td>
<td>42.8 km</td>
</tr>
<tr>
<td>Orange Line</td>
<td>30</td>
<td>35.4 km</td>
</tr>
<tr>
<td>Pink Line</td>
<td>30</td>
<td>36.0 km</td>
</tr>
<tr>
<td>Yellow Line</td>
<td>23</td>
<td>30.4 km</td>
</tr>
<tr>
<td>Brown Line</td>
<td>23</td>
<td>21.0 km</td>
</tr>
<tr>
<td>Gold Line</td>
<td>4</td>
<td>2.7 km</td>
</tr>
<tr>
<td>Grey</td>
<td>39</td>
<td>26.0 km</td>
</tr>
<tr>
<td>Light Blue Line</td>
<td>19</td>
<td>30.0 km</td>
</tr>
<tr>
<td>Light Red Line</td>
<td>55</td>
<td>58.5 km</td>
</tr>
<tr>
<td>Dark Red Line</td>
<td>20</td>
<td>80.8 km</td>
</tr>
<tr>
<td>Airport Rail Link</td>
<td>14</td>
<td>49.5 km</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>504 km</strong></td>
</tr>
</tbody>
</table>
BANGKOK
Public Transportation

Metro Systems

Impact of Covid-19 Measures

Monthly Ridership

CLARE

-29.2%

-84.6%

-31.7%

Schools

- Require closing at all levels
- Recommend closing
- Require closing at some levels
- No lockdown measures

Workplaces

263 bus routes are serving Bangkok Metropolitan Region.

- BMTA operates 123 routes from 8 operation divisions.
- Private companies operates 115 routes
- BMTA and private companies share operation on the other 25 routes.

**Schools**

- Require closing at all levels
- Require closing at some levels
- Recommend closing
- No lockdown measures

**Workplaces**

- Require closing at all levels
- Require closing at some levels
- Recommend closing
- No lockdown measures
Bus Reformation Program is underway:

1. Reshuffle and shorten the routes by average 4.7 kilometers. This brings a total 269 routes.
2. Reissues new operation permits. Promote qualified private operators.
3. Department of Land Transport resumes the sole regulator role, while BMTA is converted to an operator, competing for permits.
4. In a long run, the local administration shall establish an organization taking charge on regulatory functions and infrastructure management.
2 major water transport routes are

- **Chao Phraya Express** (along the main river running through the city)
- **Saen Saep Boat** (along the main canal running eastward from Chao Phraya)

Other services include a few routes on short canals and ferry across Chao Phraya.
Chao Phraya Express Boat operates 4 service types:

- **Local (Orange Flag)** stops at all 33 piers
- **Limited (Yellow Flag)** stops at selected 15 piers
- **Limited Extended (Green Flag)** runs Yellow Flag service plus extra 5 north piers
- **Express (Red Flag)** stops at 11 major piers

The network connects to 4 metro stations:

- Purple Line – Phra Nang Klao Station
- Blue Line – Bang Pho Station
- Gold Line – Charoen Nakhon Station
- Green Line – Saphan Taksin Station

Marine Department commissions private companies to operate **electric boats** along short sections in Chao Phraya and Phadung Krung Kasem canal.
Chiang Mai is the largest city in the north and a major tourist destinations for both Thai and foreigners.

Statistics (2019, Municipality)
Population: 127,240
Density: 3,163.6 persons/sqkm

Network:
3 LRT routes – Red, Blue and Green
7 feeder bus routes connecting nearby towns

Alignments:
The LRT network involves at-grade sections in the city’s outskirts, and underground sections in the old town historical area.

Fare: 15 + 1.0 Baht

Status: Feasibility Study and Detailed Design by MRTA
Phitsanulok is a major city in the lower north region. It is the crossroads of major east-west and north-south highways.

**Statistics (2019, Municipality)**

Population: 66,106  
Density: 3,600 persons/sqkm

Phitsanulok mass transit system adopts at-grade LRT and is planned with 5 routes:

- **Red** – runs across the city in the east-west orientation
- **Orange** – connects the city center to the southeast where the major schools and university are located.
- **Blue** - runs across the city in the north-south orientation
- **Purple** – provides west-south connection
- **Pink** – is the ring route for the city
Khon Kaen is an important commercial center in the northeast and the hub of many transportation modes.

**Statistics (2017, Municipality)**

Population: 120,143

Density: 2,611.8 persons/sqkm

The network consists of five at-grade LRT lines: Pink, Red, Yellow, Green and Blue.

Five municipalities have collaborated and established Khon Kaen Transit System Co., Ltd. with help from a group of local businessmen. The company reviews the feasibility study in line with Khon Kaen smart city program. The project aims to construct a pilot 26-km red line while developing domestic rail component industry and R&D to support future railway system demand.
Nakhon Ratchasima is the largest and most populated province in the northeast. It is the gateway to the northeastern region.

Statistics (Municipality)

Population: 129,680
Density: 3,458.1 persons/sqkm

Nakhon Ratchasima public transport plan includes three at-grade LRT lines: Orange line runs through the economic center and the old town (9.81 kilometers and 19 stations).

Green line connects a large community and market with the city’s main railway station (11.17 kilometers and 20 stations).

Purple line connects the bus Terminal with large shopping centers (7.14 kilometers and 17 stations).
Pattaya is a main tourist destination located 140 km east of Bangkok.

Statistics (2019, Municipality)
Population: 119,532
Density: 2,238.4 persons/sqkm

Pattaya mass transit master plan features an elevated “green line” monorail running along Pattaya beachside road, connecting the future high-speed railway station to Pattaya City and Baliha Pier. Other lines including red, purple and yellow have been planned but technology have not been determined.
Phuket is a small island in the Andaman Sea and the most-visited tourist destination in the south.

**Statistics**
- Population: 418,785
- Density: 771.20 persons/sqkm

Phuket mass transit system will connect the airport in the north of the island to the city in the south. The single line tram network will run at-grade throughout most of the route with some underpass through major highway intersections. In the city the tram will either run on exclusive lanes where possible or share lanes with street traffic where narrow road sections do not allow exclusive operation.

**Status:** Feasibility Study and Detailed Design by MRTA
Hat Yai is a district in Songkhla Province. It is one of the most important commercial centers of southern Thailand.

**Statistics**

Population: 159,233
Density: 7,582.5 persons/sqkm

Hat Yai mass transit master plan comprises a major monorail line running through the city connecting the international airport to the railway station and the city’s bus terminal. The 2nd phase of the network also includes a bypass route to the commercial center and two spur lines to major communities.
Bangkok urban public transportation demand is considerably recovering from COVID-situations but still far from the original state.

Several government agencies and state enterprises play various roles in urban transport system development and operation. These government bodies need to be well coordinated to develop seamless public transport systems.

Most budget are spent annually for Bangkok mass transit development. Meanwhile provincial urban public transportation plan have not made substantial progress to date.

MRTA becomes the sole authority for provincial public transport system development. Implementation budget could be mobilized from the local level or obtained from PPP process.

Provincial public transportation must directly compete with low-cost motorcycle usage. The project feasibility is doubtful for investors. The tourist destination cities should have potential to succeed first.