Smart Transportation in Bangkok

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# Facts about Bangkok 2014

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Area</td>
<td>1,568.737 km²</td>
</tr>
<tr>
<td>Average Ground Level</td>
<td>+0.50 to +1.50 m. MSL</td>
</tr>
<tr>
<td>Temperature</td>
<td>17.6 – 39.3 °C</td>
</tr>
<tr>
<td>30-year Average Annual Rainfall</td>
<td>1,227.5 mm/year</td>
</tr>
<tr>
<td>Population</td>
<td>Registered: 5,686,252 persons</td>
</tr>
<tr>
<td></td>
<td>Non Registered: ~4.0 million</td>
</tr>
<tr>
<td>Density population</td>
<td>3,633 persons/km²</td>
</tr>
<tr>
<td>Average Monthly Income per Household</td>
<td>1,466.67 US Dollar</td>
</tr>
<tr>
<td>Houses</td>
<td>2.6 Million households</td>
</tr>
<tr>
<td>Community</td>
<td>2,011 communities</td>
</tr>
<tr>
<td>Tourist</td>
<td>26.5 Million persons</td>
</tr>
<tr>
<td>Registered Vehicles</td>
<td>New registered: 678,527 units</td>
</tr>
<tr>
<td></td>
<td>Collective registered: 8,476,272 units</td>
</tr>
<tr>
<td>Mass Rapid Transit</td>
<td>85 km</td>
</tr>
<tr>
<td></td>
<td>Future: 369 km (2021)</td>
</tr>
<tr>
<td>Mass Transit Passengers</td>
<td>1,150,000 trips per day (existing) / 5,200,000 trips per day (2021)</td>
</tr>
<tr>
<td>Electricity Energy Used</td>
<td>36,378 GWh</td>
</tr>
<tr>
<td>Permitted Building Construction</td>
<td>7,492,000 m²</td>
</tr>
<tr>
<td>Number of factories</td>
<td>17,772 units</td>
</tr>
</tbody>
</table>
Mode Share 2014

- Private Car: 37.20%
- Bus & Boat: 38.10%
- Mass Transit: 5.80%
- Others (Taxi & Motorcycle): 19.90%
GOAL:
To development efficient mass transit system including:
- Main system to cover high density residential area and inner city area
- Support system to link main system with medium & low density residential area
- To discourage private vehicles usage
Place importance on mass transit and public transport systems to facilitate convenient, speedy and safe travel for all.

13 Train routes
Major transport mode

Start
To major transport mode

Walk
Bicycle
Motorcycle
Boat

Bus/Van
Tram
BRT
Bus lane

Walk
Bicycle
Motorcycle
Boat

Bus/Van
Tram
BRT
Bus lane

Clean Energy

Behavioral Changes
Extend rail-based transport network to become major mode of urban transport
Bangkok Mass Transit Master Plan 2011 - 2030 (M-MAP)
Bangkok Mass Transit

Four projects covering 85 km.

- Mo Chit-On Nut National Stadium 24 km
- Saphan Taksin-Bang Wa 7.5 km
- Bang Sue-Hua Lamphong 20.8 km
- Airport Rail Link 28 km
- On Nut-Bearing 5.25 km
Four projects under construction (89 km)

- Bang Yai-Bang Sue (23 km)
- Bang Sue-Tha Phra-Bang Khae (27 km)
- Bearing-Samut Prakan (12.8 km)
- Bang Sue-Rangsit (26 km)
Bangkok Mass Transit in Future (Year 2021)

MRT Passengers:
5,200,000 trips per day

Mode Share

Others (Taxi & Motorcycle)

Private Car: 41.10%
Mass Transit: 20.60%
Bus & Boat: 21.80%
Others (Taxi & Motorcycle): 16.50%
Major Mode: BMA SkyTrain

1. **Sukhumvit Line**
   Mor Chit – On Nut 16.5 km

2. **Silom Line**
   National Stadium – Tak Sin Bridge 7 km

**Extension lines**

3. **Sukhumvit Extension section 1**
   On Nut – Bearing 5.3 km

4. **Silom Line section 2**
   Tak Sin – Phet Kasem
Minor Mode: Monorail/Light Rail

1. Monorail (Rama 9 - Watcharapol)
2. Light rail (Bang Na – Suvarnabhumi Airport)
3. Monorail (Ramkhamhaeng University – Thong Lor)
4. Monorail (City Hall 2 – Victory Monument – Yo Tee Road)
In 2019 after the full transport network coverage in the city center, transport passengers to rail mass transit stations with the following means:

- Footpath
- Bicycle
- Motorcycle
- Minibus
- Van
- Bus
- Boat
- Tram
- BRT
- Bus Lane

Travelling to the stations within 5–km range.

Land use management at the stations
Transport passengers to rail mass transit stations with the following means:

- provide Intermodal Transfer Facilities (ITF) and transport interchanges
- Reroute bus/van/BRT routes connecting them with SkyTrain stations.

Travelling time from suburban areas to city center is about 45–60 minutes.
Bus Rapid Transit (BRT)

Operated since 2010
Sathorn - Ratchapruk
Operated since 2011
Along Sansap Canal – 30 kms (27 piers plus new 14 piers)

Operated since 2012
Along Phasi Charoen Canal – 12 kms
connect BTS Silom Extension Line (Tak Sin – Phet Kasem Section)
Promote bicycle use

Currently

In Bangkok there is a network of 31 bicycle lanes with a total length of 232 kilometers.
Bicycle for rent service is provided in urban residential and commercial areas as well as all tourist spots in Bangkok.

50 station
300 bicycle
ITS Development in Bangkok

- Area Traffic Control System (ATC)
- Intelligent Traffic Sign System
- Countdown Traffic Signal System
- Intelligent Pedestrian Crossing System
- ITS on Bus Rapid Transit System
- Close Circuit Television System (CCTV)
ITS Development in Bangkok

1. Traffic Management and Control Center

- Traffic Management Center
- Traffic Law Enforcement Center
- Traffic Signal Control System
- CCTV
- Fiber Optic Network
- System Control
- Congestion Map
- Internet
- Radio
- TV
- Message Signboard
- Data Collection and Traffic Info Report Center
- Critical Point and Safety System Control Center
- Red Light Camera
- Speed Limit
- CCTV

ITS Development in Bangkok
BMA plans to install 80 IP Camera and processing system. It will be connected to the existing system for providing congestion map or real time traffic picture via VMS, radio, cell phone, and internet.

- ATC and the existing IP camera will be connected to the TIC processing system
- Will increase 280 IP cameras
Traffic Lights for Pedestrians

The BMA has installed 119 genius traffic lights all over the metropolitan area. Over 220 button-operated crossing usually have audible and tactile signals to help the blind or partially sighted people know when it is safe to cross.
Traffic Lights

- **Install countdown timers** to alert both drivers and pedestrians at 400 intersections
- **Improve efficiency of countdown timers** at 150 intersections
Thank You