



SUSTAINABLE URBAN TRANSPORT INDEX FOR BANGKOK

AND

IMPACTS OF COVID-19 ON MOBILITY

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Chapter 1 Introduction

1.1 General Information

Bangkok, the Capital of Thailand, is located on the Lower Central Plain over Chao Phraya delta at the top of the Gulf of Thailand. It is home to almost six million people. Its true extent may cover some other nearby provinces which now appear to be inseparable from Bangkok. The greater Bangkok may host more than 10 million inhabitants who live, work, shop, play and do many other activities in one day. The city itself covers an area of 1,568.73 square kilometers. This makes the population density of the city equals to 3,690 persons per square kilometers. However, the city has sprawled into many surrounding provinces namely Nonthaburi, Pathum Thani, Samut Prakan, Samut Sakhon, and Nakhon Pathom. These provinces form Greater Bangkok or Bangkok Metropolitan Region, population exceeding 15 million as projected by National Statistic Office, where economic and travel activities are interconnected and almost inseparable. Figure 1-1 shows the location of Bangkok and Figure 1-2 shows Bangkok and its neighboring provinces.



Figure 1-1 Location of Bangkok



Figure 1-2 Bangkok Metropolitan Region

A recent survey in 2018 shows that 32 million trips are made daily, 70% of which are made by private vehicles. This makes Bangkok one of the most congested city in the world with 10.7 and 14.2 kilometers per hour average speed in the peak morning and evening periods respectively.

1.2 Bangkok Development Plan

Bangkok Metropolitan Authority has developed Bangkok Development Plan (2013-2032) to establish a framework in providing public services and to prioritize long-term project investment. The 20-year development plan is divided into four phases of 5 years so that the goals and measures can be reviewed and evaluated. Currently the second development plan (2018-2022) is in effect with a vision of "convenient metropolitan". The plan consists of six strategies:

Strategy 1: Safe metropolitan

The first strategy addresses all types of risks including pollutions, drugs and crimes, diseases, disasters and accidents. The accident reduction plans are designed to generally attacks construction and road accidents.

Strategy 2: Green and convenient metropolitan

The second strategy aims to build public park and green area to the standard ratio compared to the population. It also addresses the clean and environmental-friendly forms of energy and its conservation. This include providing multimodal and convenient transportation with no barriers.

Strategy 3: Metropolitan for all

The third strategy focuses on creating equity and unity for all Bangkokians. All should receive the same opportunity to learn, develop and access to public services. Meanwhile each group or community should beable to maintain their own root, identity, tradition, and culture to make Bangkok multicultural city.

Strategy 4: Elevated metropolitan

The fourth strategy addresses immature development in some area. It aims to promote convenience and optimized expenses on utilities and transport. The city will be planned to be compact with multi-centers connecting with one another in network scheme.

Strategy 5: Democratic metropolitan

The fifth strategy aims to promote democracy and good governance for the city. The administration will have good management without corruption. Business and public participation is encouraged to strongly drive the city development.

Strategy 6: Metropolitan of economy and learning

The sixth strategy sets up 20-year goal for the city to be the capital of Asia with regional economic role. Bangkok will be the trade, investment, tourism, and cultural center, including regional learning hub.

1.3 Objectives of the study

The objectives of the study are:

- 1. to review the urban transport situation in Bangkok in 2019.
- 2. to explore impact of COVID-19 to the ridership and financial viability of public transport services.
- 3. to evaluate the performance of sustainable urban transport and related sustainable development goals for Bangkok via Sustainable Urban Transportation Index (SUTI).

2.1 Land Use and Road Network

Bangkok is divided into two sides by Chao Phraya River. The center of the capital was moved from the west to the east sides of the river more than 230 years ago due to its strategic location which was enclosed by the river. The east side was safe from erosion and was easy to defend from the enemies. Canals were dug for city defense and transport purposes. In the early ages transport relied on boats and animals. Houses were built on or nearby the canals and waterways. Modern roads were paved when the westerners came into contact nearly 160 years ago. These roads increased access to inland regions where they had never been reached before. Inhabitants started to move from the canals to the land. Since then, the city has expanded rapidly, especially eastward, while the west side remained mostly agricultural area.

Figure 2-1 shows the most current version of Bangkok comprehensive plan which was prepared in 2014 and updated constantly after. The red and brown areas represent commercial and highdensity residential areas respectively in the middle of the city, mostly on the east side of the river. The second and third strips in orange and yellow show medium- and low-density residential area. Finally, the conservation and agricultural areas in light and dark green are located on both farthest corners of the city.



Source: Department of Public Works and Town & Country Planning, 2020

Figure 2-1 Bangkok Comprehensive Plan 2014

The city is naturally polycentric. Although the core business area is apparently in the middle, the small red dots are also distributed everywhere around the city. The central business district itself is also a combination of many sub-centers sprawling into one another. The roads are mainly formed as ring and radial system with key main roads running from the city center to all directions. These roads are, for example. Phahonyothin and Vibhayadi Rangsit to the north. Lat

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