

# Malaysia's Urban Rail Development Plan: Better late than never



Nurlin Amirudin 서울대학교 석사 학생  
(nurlin@snu.ac.kr)

## I Background

Malaysia experienced gradual economic growth with an increase in GDP per capita from USD235 in 1960 to USD9,768 in 2015 in tandem with a rise in urban population from 27% in 1960 to 75% in 2015(World Bank Staff, 2015). In 2010, the population that is concentrated in the capital of Kuala Lumpur and the Greater Klang Valley area amounted to 7 million (25% of the total population) (Land Public Transport Commission, 2011; World Bank Staff, 2015).

Despite the increase in urban population, Malaysia's urban area is the least dense in East Asia, with an urban population density of 3,300 people per square kilometer while the average for the region is 5,800 people per square kilometer. This is mainly owing to its urban sprawl – it has the fourth largest amount of built up land in East Asia, approximately 4,600 square kilometers. Kuala Lumpur, in particular, is the eighth largest in the region, surpassing other megacities such as Seoul(The World Bank, 2015).

One of the reasons for this is the rise in property prices in central urban areas pushing many urban residents to the cities' suburbs and outskirts towards more affordable homes. Townships and housing estates built to cater for this demand gave very little consideration to connectivity between amenities such as shops and schools which are located at a distance between one another. This makes it impractical for residents to walk, cycle or

take the public transportation service (Shari, 2015). Moreover, as jobs are located mainly in the inner city of Kuala Lumpur, Shah Alam and Putrajaya, residents who live outside of these areas use private vehicles such as cars and motorcycles to commute to work due to limited public transportation resulting in massive rush hour traffic.

In addition, policies in the 2000s promoted motor vehicle ownership and use, hence causing agencies such as the Malaysian Highways Authority and Public Works Department to use road expansion as a primary response to traffic congestion (Barter, 2004) further encouraging automobile use.

The reliance on private vehicles has increased registration from 4.7 million in 1990 to 18.6 million in 2010 despite an almost 100% import and excise duties on imported cars in Malaysia (Malaysia Automotive Association, 2008). At the same time, peak hour (A.M.) share of modal public transport declined from 20% in 2007 to only 10%-12% in 2008 (Land Public Transport Commission, 2013).

## **II The Current Situation of Urban Railways in Kuala Lumpur and Greater Klang Valley**

Automobile dependence in Kuala Lumpur has resulted in only 10% of the area falling

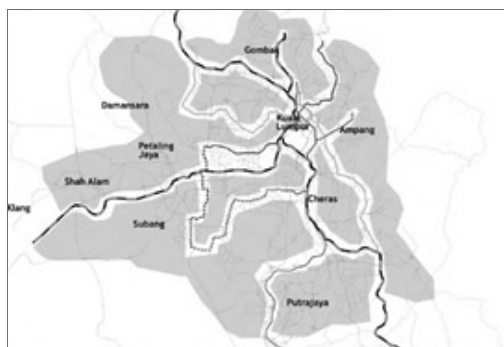
within catchment of public transportation nodes (Ministry of Natural Resources and Environment Malaysia, 2011). The current available infrastructure servicing the Kuala Lumpur and Greater Klang Valley area are as follows:

[Table 1] Existing Rail Network (Express Rail Link, 2016; Land Public Transport Commission, 2011)

Railway line	General Rail Category	Routh Length	No. of Stations	Year Operational
KTMB Komuter	Suburban Rail	157km	50	1995
LRT 1 (Kelana Jaya line)	Urban Rail/ Metro	29km	24	1998
LRT 2 (Ampang line)		27km	25	1998
Monorail	Urban Rail/ Metro	8.6km	11	2003
KLIA	Suburban Rail/Airport Express	57km	5	2002

The current daily ridership is 464,000 passengers a day with both LRT lines experiencing the highest passenger loads as it services the inner-city areas. The KTMB Komuter line, however, is used for longer distances including locations outside of the Kuala Lumpur / Greater Klang Valley area such as Seremban and hence have lower ridership. This is exacerbated by KTMB Komuter's low accessibility, low frequency, slow journey times and frequent breakdowns of the trains (Land Public Transport Commission, 2011).

In addition, no expansion in public railway infrastructure was made in the last 14 years despite the increase in urban population. The lack of services is severe, as illustrated in Map 1 below:



[Figure 1] Map 1: Railway Gaps (Land Public Transport Commission, 2011)

The shaded areas in Map 1 depicts areas that are currently not serviced by the urban rail network. It is identified as those areas located 2.5 kilometers from the rail tracks(Land Public Transport Commission, 2011).

### III The Urban Railway Development Plan

To lower congestion and travel time within the Kuala Lumpur and Greater Klang Valley, the extensions and new line developments will take place with completion dates ranging from 2015 to 2030 as described in the table illustrated below;

[Table 2] List of extension and new rail developments to 2030(Land Public Transport Commission, 2011)

Railway line	Extension/ New Development	New Routh Length	No. of Stations	Forecast daily ridership	Completion year
KTMB Komuter	Upgrade to Metro	157km	50	237,000	Pre 2020
LRT 1 (Kelana Jaya line)	Extension to Putra Heights	46km	37	496,000	2015
LRT 2 (Ampang line)	Extension to Putra Heights	44.7km	38	352,000	2015
Monorail	Extension	8km Phase 1: 7.5km Phase 2: 8km	11 Phase 1: 9 Phase 2: 10	Phase 1: 115,000 Phase 2: increase to 172,000	Pre 2020
KLIA	N/A	57km	5 stations	16,500	N/A
Kuala Lumpur Metropolis Extension	Extension	4.24km	5	62,500	Pre 2030
MRT1	New Development	50.8km	36	445,600	2017
MRT Circle Line	New Development	Phase 1: 29km Phase 2: 11.6km	Phase 1: 22 Phase 2: 30	Phase 1: 320,000 Phase 2: increase to 440,000	Pre 2020
MRT North-South Line	New Development	Phase 1: 38km Phase 2: 23km	Phase 1: 26 Phase 2: 41	Phase 1: 316,000 Phase 2: increase to 500,000	Pre 2020 to pre 2030
LRT 3	New Development	23.5km	16	100,000	Pre 2030

#### **IV Possible implications of the urban railway development plan**

The extensions in LRT 1 and LRT 2 as well as completion of MRT 1 will increase short term ridership by 829,600 passengers by 2017 and reduce the number of peak hour cars by 48,000 in 2020. This bodes well for Malaysia who submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) in November 2015 with a pledge to reduce its greenhouse gas (GHG) emissions by 45% by 2030. This is especially so since the transportation sector contributed 21% of carbon dioxide emissions in 2000, second only to the energy industry of 35%(Ministry of Natural Resources and Environment

Malaysia, 2011). Public transportation and electric vehicles were especially highlighted in Malaysia's second communication to the UNFCCC as a mitigation option to reduce its carbon dioxide emissions.

Increasing railway nodes will also provide opportunities for the construction of more transit oriented development (TOD). Currently the only TOD in Malaysia is the KL Sentral Station which houses shopping malls, condominiums and government departments. The construction of new public rail lines will allow for the development of more TODs within the Kuala Lumpur/ Greater Klang Valley area to create pedestrian friendly facilities and high density areas with better opportunities for the construction of energy efficient buildings, lesser traffic and ultimately lesser carbon emissions.

#### References

1. Barter, P. A. (2004). Transport, urban structure and 'lock in' in the Kuala Lumpur Metropolitan Area. *International Development Planning Review*, 26(1), 1-24.
2. Express Rail Link. (2016). KLIA Express Corporate. Retrieved from <http://www.kliaekspres.com/about-us/corporate/>
3. Land Public Transport Commission. (2011). New Land Public Transport Master Plan. Retrieved from <http://www.spad.gov.my/media-centre/research-publications>.
4. Land Public Transport Commission. (2013). National Land Public Transport Masterplan. Retrieved from <http://www.spad.gov.my/media-centre/research-publications>.
5. Malaysia Automotive Association. (2008). Duties and Taxes on Motor Vehicles. Retrieved from [http://www.maa.org.my/info\\_duty.htm](http://www.maa.org.my/info_duty.htm)
6. Ministry of Natural Resources and Environment Malaysia. (2011). Malaysia: Second National Communication to the UNFCCC. Retrieved from [nc2.nre.gov.my](http://nc2.nre.gov.my).
7. Shari, Z. (2015). Limit Urban Sprawl. *The Star*. (2015) Retrieved from <http://www.thestar.com.my/metro/views/2015/01/27/limit-urban-sprawl-time-to-start-greening-our-cities-for-the-future/>
8. The World Bank. (2015). Malaysia among Most Urbanized Countries in East Asia. Retrieved from <http://www.worldbank.org/en/news/feature/2015/01/26/malaysia-among-most-urbanized-countries-in-east-asia>
9. World Bank Staff. (2015). Urban Population, Urban Population (% of total), GDP per capita. Retrieved from: <http://data.worldbank.org/indicator/SP.URB.TOTL>