

## TRANSFORMATION OF PUBLIC BUS SERVICES IN KUANTAN, MALAYSIA

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### ABSTRACT

The transformation of public bus services in Kuantan shows rapid changes in the overall level of service of public transportation system in the town. Modern and high technology, and well thought out operation plans have been deployed by RapidKuantan to increase the efficiency and effectiveness of the bus service performance. The initiative and improvement programmes for buses in Kuantan have benefited the local people in their daily ridership, especially to the city residents in terms of higher mobility, green transportation system and reliable public transport system.

**Keywords:** Urban public bus, Transport master plan, Bus ridership.

### INTRODUCTION

The public transportation system includes all multiple occupancy vehicle services designed to transport people/customers on local and regional routes and their sub-systems. It moves people towards a more sustainable future when more trips are made by these modes as it will reduce the number of trips made by private vehicles, leading to less congestion on the roads and a more efficient road system. Apart from that, an efficient public transportation service enhances personal economic opportunities, save fuel, provide economic opportunities, save money and reduces the environmental impacts. An efficient public transport system will contribute towards rapid economic growth and healthy social development of a city. However, there are a number of issues relating to public transportation services such as the limitation of facilities, the use of low quality of public transport facilities and interchanges, inconvenience of fleet, low passenger trips and long waiting time. The common issues on public transport system have been widely discussed in many previous studies (Hull, 2005; Jeon & Amekudzi, 2005; Kenworthy, 2006; Litman, 2007; Whitmarsh, Haxeltine, & Wietschel, 2007). In general, the issue on public transport in Malaysia is on its existing demand-supply that not well planned and monitor. Many of the issues required a very extensive and quick approach to overcome the current demand of public transport service. The efficient and effective public transport service is seen as a major solution to overcome the issue of traffic congestion that caused by the increase number of private vehicles flow inward-outward of city center. In short, the issues of public transport in Malaysia, according to SPAD are as in Table 1 below:

Table 1: Issue on public transport in Malaysia

Rail	Bus	Taxi
<ul style="list-style-type: none"> <li>• Rail capacity of existing lines is somewhat limited</li> <li>• Conflicts between passenger and freight movements</li> <li>• Track capacity constraints and poor signal at junctions</li> </ul>	<ul style="list-style-type: none"> <li>• The existing regulatory regime is not conducive for an effective network</li> <li>• Operators complain about unfair competition practices</li> <li>• Insufficient fare box revenue prevents re-</li> </ul>	<ul style="list-style-type: none"> <li>• Road condition and traffic congestion affecting the taxi operators</li> <li>• Inefficient operation-only 30-40% of km travelled are chargeable (Singapore 70%, HK 80%)</li> </ul>

<ul style="list-style-type: none"> <li>Poor integration with feeder modes</li> </ul>	investment in new fleet <ul style="list-style-type: none"> <li>Standards of service delivery needs to be improved</li> <li>Insufficient bus stops and priority infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Standards of service delivery needs to be improved</li> </ul>
Insufficient network coverage and poor integration	The regulatory framework and service standards need to be improved	The regulatory framework and service standards need to be improved

(Source: Land Public Transport Commission (SPAD), 2011)

## PROGRAMS AND INITIATIVES TOWARDS SUSTAINABLE PUBLIC TRANSPORT IN MALAYSIA

Many programs and initiatives are outlined in improving the current service of public transport in Malaysia, particularly in Klang Valley area. These include programs, initiatives and specific policies such as:

### National Key Result Areas (NKRA)

The main focus and highlight in the transformation of the public transport system in Malaysia is outlined in NKRA targets. Under the NKRA initiatives, public transport is expected to be able to support the economic growth, growing populations and diverse expectations of the urbanization process. It is Malaysia government intention to provide world class public transport by year 2020 with the initiatives to provide a sustain system that effective, affordable and reliable. Among the initiatives listed for land public transport transformation is:

#### Bus

- Implementing dedicated bus right of ways
- Increasing quality and coverage of bus stops
- Improving current services and increasing coverage

#### Rail

- Increasing capacity on KTM Commuter
- Debottlenecking Monorail System
- Increasing capacity and coverage of RapidKL LRT systems

#### Integration

- Establishing transport terminals and city hubs
- Introducing a cashless Integrated Smart Ticket
- Improving inter-modal integration at key station

#### Network

- Improving inter-modal integration at key station
- Implementing performance management for all public transport operators

In addition, under the NKRA initiatives, the land public transport is targeted to increase the ridership for public transport services to 15% in 2010 and to 25% by end 2012 during the daily peak morning period.

### **National Land Public Transport Master Plan**

Another extensive approach of improving the public transport system in Malaysia has been outlined by SPAD through the National Land Public Transport Master Plan. It is a long term program to address the current descent in public transport service with plans to execute high impact, effective delivery initiatives for 20-year sustainable quality public transport service for the nation. The master plan is aimed to furnish public transport service improvements in accessibility and service quality for economic, social and environmental benefits for the country.

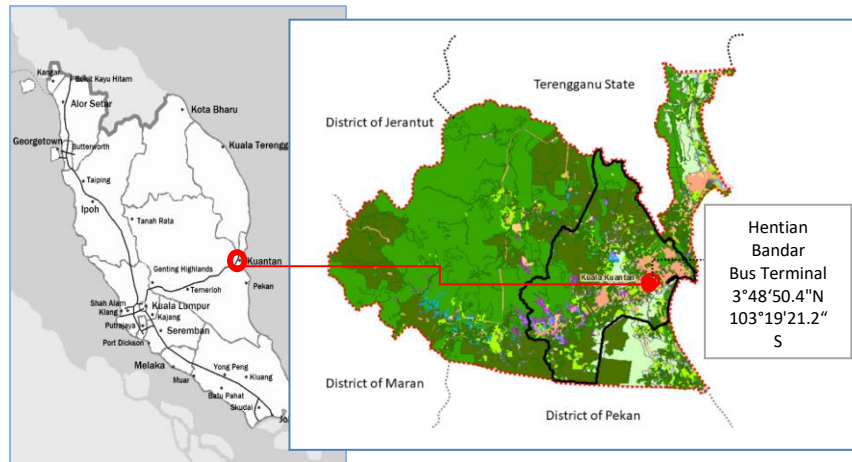
### **THE TRANSFORMATION OF PUBLIC BUS SERVICE IN KUANTAN**

A good public bus services are important to support the economic growth, growing population and expansion of urban activities. Public transport is one of the optional transport mode to reduce the traffic congestion and travel time as well as increase levels of mobility, efficiency within the urban activities particularly in town city of Kuantan. The demand of public transport service will continue to increase every year and this scenery needs a good institutional management. Ministry of Transportation (MOT), Land Public Transport Commission (SPAD), Malaysian Institute of Road Safety Research (MIROS) and local authorities such as Kuantan Municipal Council play a major role in ensuring the monitoring, demand management and efficiency of public transport service and improvement.

Common issues on public transport service such as crowding in buses, improper route services and unsystematic departure time in Malaysia have portray a bad profile to the overall connectivity and mobility in the urban areas; particularly in Kuantan. Various economic transformation packages including the Vision 2020, the Malaysia Five Year Plan, National Key Results Areas (NKRA) and Government Transformation Programmes (GTPs) has outlined by Malaysia government in reversing of the public transportation images and overcome the issue on annual dwindling patronage (Federal Department of Town and Country Planning Ministry of Housing and Local Government of Malaysia, 2010; Malaysia Economic Planning Unit (EPU), 2014; PEMANDU, 2012, 2011).

Based on the Ministry of Transport statistics (Ministry of Transport Malaysia, 2014), there existed some 4,594 buses registered operating in state of Pahang until 31<sup>st</sup> December 2013 yet the level of services is very low. Various improvements have been implemented onto bus systems in Kuantan. Among the transformation programmes is to enhance the bus system in Kuantan, with the introduction of Rapid Kuantan system, a set of new bus fleets traversing main landuse activity centres with the central business districts. This new operating system was implemented in recapturing the lost patronage and attracting the prospective passengers in the city of Kuantan.

Kuantan, is the capital city of Pahang, with a population of 600,000 population (Department of Statistic Malaysia, 2014) and a size of 324km<sup>2</sup>. The major landuses along and surrounding bus routes are residential, commercial, educational, recreational and industrial. The Figure 1 below shows the location of Kuantan, within the context of Peninsula Malaysia.



**Fig. 1** Location of Kuantan within the Peninsular Malaysia Context

(Source: Modification from Draft Rancangan Tempatan Daerah Kuantan 2035 (Penggantian), 2017)

### RAPID KUANTAN BUS SERVICES

Rapid Kuantan has been operated by the Prasarana Group (a government linked public company), specializing in consolidating major city bus services. Beginning its services on December 2012, the first 3 routes of bus services (Table 2) provided are:

**Table 2:** RapidKuantan Bus Routes Services in Early Stage

No.	Routes	Details service	
1.	Gambang (Kolej Komuniti) to Terminal Makmur	Frequency No. of fleet Travel time Distance Catchment	Every 15 minutes 14 95 minutes 49.4km Universiti Malaysia Pahang (UMP), Airport Kuantan, Taman TAS, Sg. Isap, Hospital Tengku Ampuan Afzan (HTTA) and State Mosque.
2.	Bandar Indera Mahkota ke Teluk Cempedak	Frequency No. of fleet Travel time Distance Catchment	Every 15 minutes 7 46 minutes 18.4km Kompleks Penyayang, Taman Cenderawasih, Indera Mahkota 2, Terminal Makmur, Kolej IKIP/MRSM & Teluk Cempedak.
3.	Kompleks Mahkamah to POLISAS Semambu	Frequency No. of fleet Travel time Distance Catchment	Every 15 minutes 8 52 minutes 21 km NA

(Source: Rapid, 2012)

Rapid Kuantan deployed 32 buses for 3 routes at an early stage of operation. All the buses were occupied by the air conditioner system, GPS and ergonomic design for disabled passenger (space for standard wheelchair, a boarding device to enable wheelchair users to get on and off, priority seats, handrails, color contrast and easy bell pushes). Details on the operation plan,

management and staff recruitment are described in the Table 3 below:

Table 3: Rapid Kuantan Operation Plan and Marketing

Details	
Date of starting operation	<ul style="list-style-type: none"> <li>• Start on 1<sup>st</sup> December 2012 with 32 buses (10 of 10 meters busses and 22 of 12 meters busses)</li> <li>• In 1<sup>st</sup> January 2013, 32 of 12 meters bus are deployed</li> <li>• The bus design was installed with the air conditioner system, GPS and ergonomic for disabled passenger (space for standard wheelchair, a boarding device to enable wheelchair users to get on and off, priority seats, handrails, color contrast and easy bell pushes)</li> <li>• The electronic ticket system was deployed</li> </ul>
Fare	<ul style="list-style-type: none"> <li>• The fare was decided by the Suruhanjaya Pengangkutan Awam Darat (SPAD)</li> <li>• Route 1 using the 2 zone fare calculation</li> <li>• Route 2 &amp; 3 using the flat fare</li> </ul>
Depot	<ul style="list-style-type: none"> <li>• RapidKuantan operated from a temporary depot - 7 acres of land in Semambu for a period of between one and a half years to two years. Land owned by the Lembaga Kemajuan, Perusahaan Pertanian Negeri Pahang (LKPP)</li> <li>• The Pahang State Government has allocated 10 acres of land, situated between Wisma Youth and Kuantan Sentral for the permanent depot through a master plan of 'Transit Oriented Development (TOD)</li> </ul>
Hub	<ul style="list-style-type: none"> <li>• Operates with four major bus hub - Kolej Komuniti Gambang, Indera Mahkota 2, Teluk Cempedak &amp; Kompleks Mahkamah.</li> </ul>
Bus Stop	<ul style="list-style-type: none"> <li>• 30 bus stops are installed and 145 bus stops/pole are restored</li> </ul>
Staff Employment	<ul style="list-style-type: none"> <li>• 29 September 2012 – advertisement on driver recruitment distributed (10 banners and flyers)</li> <li>• 2 &amp; October 5, 2012 - Ads for walk-in interview in Harian Metro &amp; social media network campaigns - Facebook, Twitter and blog)</li> <li>• 6, 7 &amp; 8 October 2012 - 'Walk in interview' at Terminal Makmur</li> <li>• October 10, 2012 - Driver training program begins at RapidKuantan temporary office in Stadium Darul Makmur</li> <li>• 15 November 2012 - Training program end and the arrival of the 32 bus</li> </ul>

(Source: Rapid, 2012)

Starting on December 2013, Rapid Kuantan provides 13 routes to the public bus users in Kuantan. A total number of 47 buses were deployed to cater the market demand. The bus services provided by Rapid Kuantan have capture about 4millions ridership in December 2013 with the highest ridership of route 100 and the lowest ridership was route 400 (Rapid, 2012). The details on bus routes, number of buses and frequencies are described in Table 4.

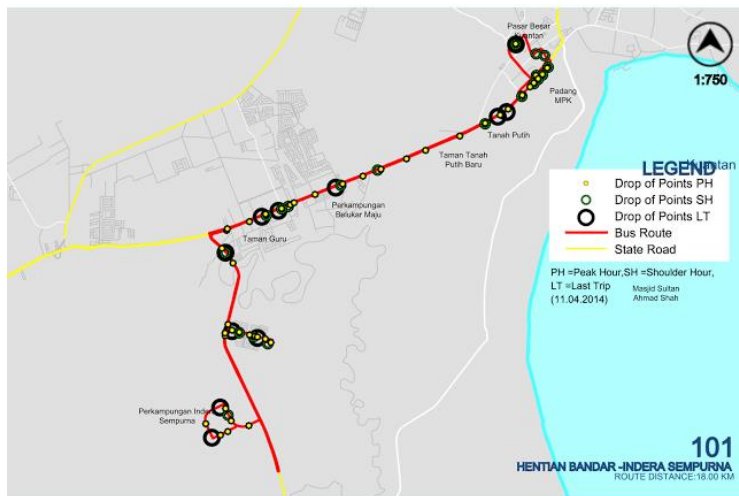
Table 4: RapidKuantan Bus Routes (Observed) in 2014

No.	Route Number and Route	No. of Buses	Frequency (Minutes)	Route Map
1	100 Hentian Bandar to Gambang	9	20-30	Figure 2
2	Resort	3	30-40	Figure 3
3	101 Hentian Bandar to Indera	3	20-30	Figure 4
4	Sempurna	3	20-30	Figure 5
5	102 Hentian Bandar to Permatang	5	20-30	Figure 6
6	Badak	1	180	Figure 7
7	200 Hentian Bandar to Teluk	3	20-30	Figure 8
8	Chempedak	3	20-30	Figure 9
9	300 Hentian Bandar to Taman Impian	6	30-40	Figure 10
10	301 Hentian Bandar to Bukit Sagu	2	120	Figure 11
11	302 Hentian Bandar to Indera	4	40	Figure 12
12	Mahkota	4	20-30	Figure 13
	303 Hentian Bandar to Terminal Sentral Kuantan			
	400 Hentian Bandar to Pekan			
	401 Hentian Bandar to Kampung Ubai			
	500 Hentian Bandar to Sungai Lembing			
	601 Hentian Bandar to POLISAS			
<b>TOTAL</b>		<b>47</b>		

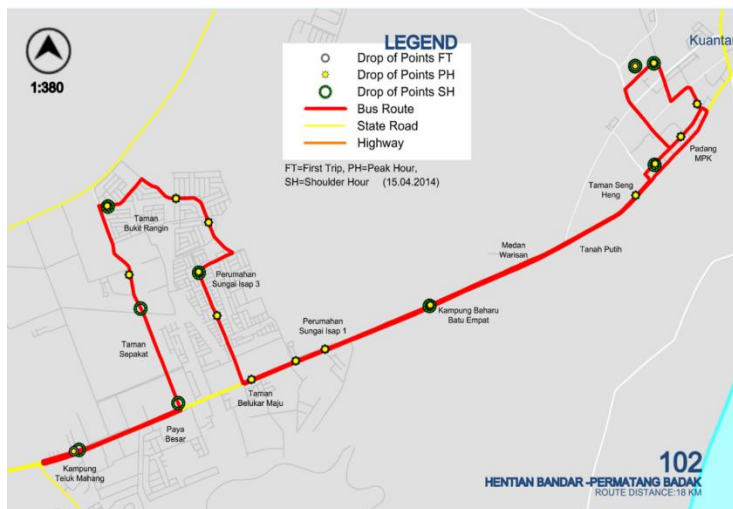
(Source : On-Board Survey, 2014)



Fig. 2 Route map for Route: 100 Hentian Bandar to Gambang Resort



**Fig. 3** Route map for Route 101 Hentian Bandar to Indera Sempurna



**Fig. 4** Route map for Route 102 Hentian Bandar to Permatang Badak



**Fig. 5** Route map for Route 200 Hentian Bandar to Teluk Cempedak



Fig. 6 Route map for Route 300 Hentian Bandar to Taman Impian



Fig. 7 Route map for Route 302 Hentian Bandar to Indera Mahkota

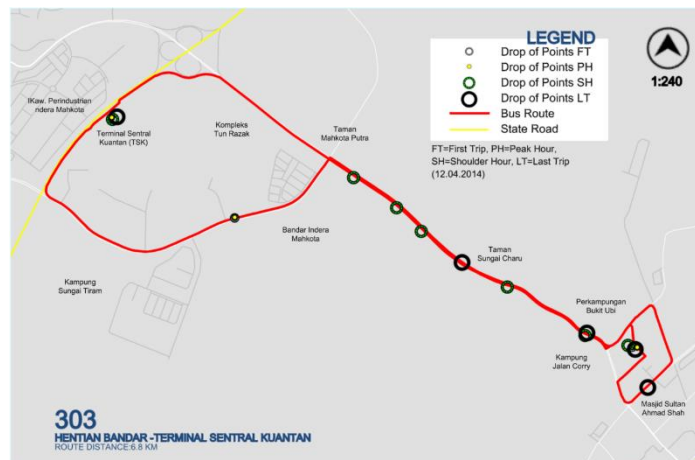


Fig. 8 Route map for Route 303 Hentian Bandar to Terminal Sentral Kuantan

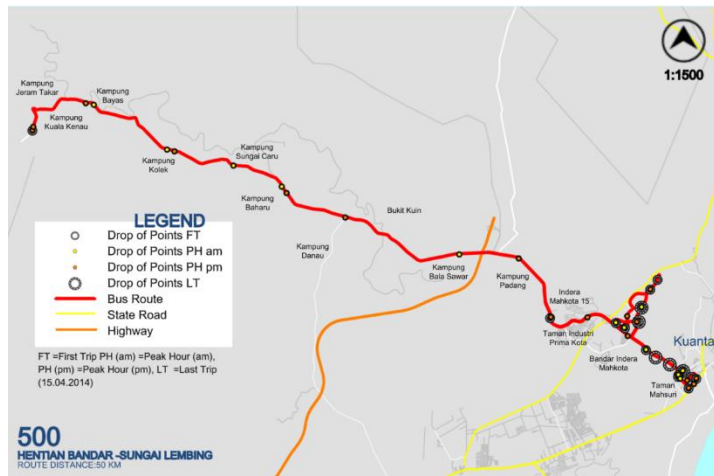




**Fig. 9** Route map for Route 400 Hentian Bandar to Pekan



**Fig. 10** Route map for Route 401 Hentian Bandar to Kampung Ubai



**Fig. 11** Route map for Route 500 Hentian Bandar to Sungai Lembing



**Fig. 12** Route map for Route 601 Hentian Bandar to POLISAS

## FUTURE PLAN OF RAPIDKUANTAN BUS SERVICES

In order to increase the level of service of bus services, RapidKuantan proposed to deploy more number of buses and introduced another three new routes in 2014 (Table 5). This operational plan will involve with 80 buses.

Table 5: Proposed RapidKuantan Bus Routes in 2014

No.	Route Number and Route	No. of Buses	Frequency (Min)
1	100 Hentian Bandar to Gambang Resort	9	20-30
2	101 Hentian Bandar to Indera Sempurna	4	20-30
3	102 Hentian Bandar to Permatang Badak	3	20-30
4	200 Hentian Bandar to Teluk Chempedak	3	20-30
5	201 Hentian Bandar to Taman Gelora	2	20-30
6	300 Hentian Bandar to Taman Impian	5	20-30
7	301 Hentian Bandar to Bukit Sagu	4	60
8	302 Hentian Bandar to Indera Mahkota	3	20-30
9	303 Hentian Bandar to Terminal Sentral	3	20-30
10	Kuantan	9	20-30
11	400 Hentian Bandar to Pekan	6	60
12	401 Hentian Bandar to Kampung Ubai	5	20-30
13	500 Hentian Bandar to Sungai Lembing	5	20-30
14	600 Hentian Bandar to Balok Makmor via	4	20-30
15	Beserah	1	20
16	601 Hentian Bandar to POLISAS	4	20-30
	602 Hentian Bandar to PSDC via Jalan Galing		
	603 Hentian Bandar to Balok Makmor via Kuantan Bypass		
<b>Sub Total</b>		<b>70</b>	
<b>10% (Engineering Regime)</b>		<b>10</b>	
<b>TOTAL</b>		<b>80</b>	

(Source : RapidKuantan, 2014)

## CONCLUSION

In emphasizing the sustainable public transportation system in urban areas such as Kuantan requires tremendous political will and public acceptance. A good integration among the stakeholders; operator, transport authorities and local government, such as SPAD, Kuantan Municipal Council and RapidKuantan will ensure the highest level of service of the public bus system can be provided to local people. As the demand on public bus service is high, the current service of RapidKuantan should be improved in many aspects such as improve the frequency of buses and provides more routes to the residential area to achieve the high level of service sustainable system. The continuous improvement and transformation programs will lead to the achievement of 60:40 modal split of public transportation by the year 2020.

## REFERENCES

*Draf Rancangan Tempatan Daerah Kuantan 2035 (Penggantian)*, 2017. PlanMalaysia (Federal Department of Town and Country Planning Peninsular Malaysia).

Department of Statistic Malaysia. (2014). Intercensal Mid-Year Population Estimates. Retrieved from

[http://www.statistics.gov.my/portal/download\\_Population/files/Anggaran\\_Penduduk\\_Pertengahan\\_Tahun\\_Antara\\_Banci2001\\_2009.pdf](http://www.statistics.gov.my/portal/download_Population/files/Anggaran_Penduduk_Pertengahan_Tahun_Antara_Banci2001_2009.pdf)

Federal Department of Town and Country Planning Ministry of Housing and Local Government of Malaysia. (2010). *Second National Physical Plan (NPP-2)*.

Hull, A. (2005). Integrated transport planning in the UK: From concept to reality. *Journal of Transport Geography*, 13(4), 318–328. <http://doi.org/10.1016/j.jtrangeo.2004.12.002>

Jeon, C. M., & Amekudzi, A. (2005). Addressing Sustainability in Transportation Systems : Definitions , Indicators , and Metrics. *Journal of Infrastructure Systems ASCE*, 11(1), 31–50.

Kenworthy, J. R. (2006). The eco-city: ten key transport and planning dimensions for sustainable city development. *Environment and Urbanization*, 18(1), 67–85.  
<http://doi.org/10.1177/0956247806063947>

Land Public Transport Commission (SPAD). (2011). *Greater Kuala Lumpur/Klang Valley Land Public Transport Master Plan: Urban Rail Development Plan*.

Litman, T. A. (2007). Urban Transportation Management. In N. Munier (Ed.), *Handbook on Urban Sustainability* (pp. 353–387). Netherlands: Springer.

Malaysia Economic Planning Unit (EPU). (2014). Tenth Malaysia Plan 2010-2015. Retrieved from [http://www.epu.gov.my/epu-theme/RMKE10/rmke10\\_english.html](http://www.epu.gov.my/epu-theme/RMKE10/rmke10_english.html)

Ministry of Transport Malaysia. (2014). Total Motor Vehicles by Type and State, Malaysia, Until 31st December 2013. Retrieved from [http://www.mot.gov.my/my/Statistics/Land/2013\\_4\\_SUKU\\_IV\\_2013/Jadual\\_1.2.pdf](http://www.mot.gov.my/my/Statistics/Land/2013_4_SUKU_IV_2013/Jadual_1.2.pdf)

PEMANDU. (2011). National Key Results Area. Retrieved from [http://www.pemandu.gov.my/gtp/Improving\\_Urban\\_Public\\_Transport-@-GTP\\_1@0\\_Improving\\_Urban\\_Public\\_Transport.aspx](http://www.pemandu.gov.my/gtp/Improving_Urban_Public_Transport-@-GTP_1@0_Improving_Urban_Public_Transport.aspx)

PEMANDU. (2012). Government Transformation Programs. Retrieved from [http://www.pemandu.gov.my/gtp/upload/GTP2\\_ENG.pdf](http://www.pemandu.gov.my/gtp/upload/GTP2_ENG.pdf)

Rapid. (2012). RapidKuantan Bakal Beroperasi 1 Disember 2012. Retrieved from <http://www.myrapid.com.my/news-events/media-releases/2012/rapidkuantan-bakal-beroperasi-1-disember-2012>

RapidKuantan. (2014). Routes, Operating Hours and Fare. Retrieved from <http://www.rapidkuantan.com.my>

Whitmarsh, L., Haxeltine, A., & Wietschel, M. (2007). Sustainable transport visions : expert and non-expert stakeholder perspectives on sustainable transport. In *International Conference on Whole Life Urban Sustainability and its Assessment*.