National Land Public Transport Masterplan
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<td>10MP</td>
<td>10th Malaysia Plan</td>
</tr>
<tr>
<td>AAGR</td>
<td>Annual Average Growth Rate</td>
</tr>
<tr>
<td>BCV</td>
<td>Bakerloo, Central &amp; Victoria</td>
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<tr>
<td>BRT</td>
<td>Bus Rapid Transit</td>
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<tr>
<td>BTP</td>
<td>Bus Transformation Plan</td>
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<tr>
<td>CCTV</td>
<td>Closed-Circuit Television</td>
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<tr>
<td>CMB</td>
<td>China Motor Bus</td>
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<td>CVLB</td>
<td>Commercial Vehicle Licensing Board</td>
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<td>DoE</td>
<td>Department of Environment</td>
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<tr>
<td>DTP</td>
<td>Double Tracking and Electrification Project</td>
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<td>ECCR</td>
<td>East Coast Rail Route</td>
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<td>ECER</td>
<td>East Coast Economic Region</td>
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<td>ECERDC</td>
<td>East Coast Economic Region Development Council</td>
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<tr>
<td>EMU</td>
<td>Electrical Multiple Units</td>
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<tr>
<td>EPP</td>
<td>Entry Point Projects</td>
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<td>EPU</td>
<td>Economic Planning Unit</td>
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<tr>
<td>ERL</td>
<td>Express Rail Link</td>
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<td>ETP</td>
<td>Economic Transformation Programme</td>
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<tr>
<td>ETS</td>
<td>Electric Train Service</td>
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<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GDP CAGR</td>
<td>Gross Domestic Product Compound Annual Growth Rate</td>
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<tr>
<td>GTP</td>
<td>Government Transformation Programme</td>
</tr>
<tr>
<td>HQ</td>
<td>Head Quarters</td>
</tr>
<tr>
<td>IIP</td>
<td>Integration and Interchange Plan</td>
</tr>
<tr>
<td>IRDA</td>
<td>Iskandar Regional Development Authority</td>
</tr>
<tr>
<td>JB</td>
<td>Johor Bahru</td>
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<tr>
<td>JKJR</td>
<td>Road Safety Department</td>
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<tr>
<td>JKR</td>
<td>Public Works Department</td>
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<tr>
<td>JPBD</td>
<td>Town and Country Planning Department</td>
</tr>
<tr>
<td>JPJ</td>
<td>Road Transport Department</td>
</tr>
<tr>
<td>KeTTHA</td>
<td>Ministry of Energy, Green Technology and Water</td>
</tr>
<tr>
<td>KKR</td>
<td>Ministry of Works</td>
</tr>
<tr>
<td>KL</td>
<td>Kuala Lumpur</td>
</tr>
<tr>
<td>KLIA</td>
<td>Kuala Lumpur International Airport</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>KMB</td>
<td>Kowloon Motor Bus</td>
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<td>KPI</td>
<td>Key Performance Indicator</td>
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<td>Keretapi Tanah Melayu</td>
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<td>Keretapi Tanah Melayu Berhad</td>
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<td>KV</td>
<td>Klang Valley</td>
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<td>LF</td>
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<td>LLM</td>
<td>Malaysian Highway Authority</td>
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<td>LPKP</td>
<td>Lembaga Perlesenan Kenderaan Perdagangan</td>
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<td>LPT</td>
<td>Land Public Transport</td>
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<tr>
<td>LRT</td>
<td>Light Rail Transit</td>
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<td>LUP</td>
<td>Land Use Plan</td>
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<td>MoF</td>
<td>Ministry of Finance</td>
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<tr>
<td>MRT</td>
<td>Mass Rail Transit</td>
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<tr>
<td>MTR</td>
<td>Mass Transit Railway</td>
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<tr>
<td>NAO</td>
<td>National Audit Office</td>
</tr>
<tr>
<td>NCER</td>
<td>Northern Corridor Economic Region</td>
</tr>
<tr>
<td>NCIA</td>
<td>Northern Corridor Implementation Authority</td>
</tr>
<tr>
<td>NFB</td>
<td>Non-farebox</td>
</tr>
<tr>
<td>NKEA</td>
<td>National Key Economic Area</td>
</tr>
<tr>
<td>NKRA</td>
<td>National Key Results Area</td>
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<tr>
<td>NLPTMP</td>
<td>National Land Public Transport Master Plan</td>
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<tr>
<td>NPP</td>
<td>National Physical Plan</td>
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<tr>
<td>NRSP</td>
<td>National Regulatory Strenghtening Programme</td>
</tr>
<tr>
<td>NUP</td>
<td>National Urbanisation Policy</td>
</tr>
<tr>
<td>PAD</td>
<td>Pengangkutan Awam Darat</td>
</tr>
<tr>
<td>PEMANDU</td>
<td>Performance Management and Delivery Unit</td>
</tr>
<tr>
<td>P-KM CAGR</td>
<td>Per Capita Mobility Compound Annual Growth Rate</td>
</tr>
<tr>
<td>PMHS</td>
<td>Performance Management Hub System</td>
</tr>
<tr>
<td>PMO</td>
<td>Prime Minister’s Office</td>
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<tr>
<td>PPHPD</td>
<td>Passengers Per Hour Per Direction</td>
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<tr>
<td>PPP</td>
<td>Public-Private Partnership</td>
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<tr>
<td>PTF</td>
<td>Public Transport Fund</td>
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<tr>
<td>PTP</td>
<td>Port of Tanjung Pelepas</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research &amp; Development</td>
</tr>
<tr>
<td>RECODA</td>
<td>Regional Corridor Development Authority</td>
</tr>
<tr>
<td>RMP</td>
<td>Regional Master Plan</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
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<tr>
<td>SAR</td>
<td>Special Administrative Region</td>
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<tr>
<td>SBK</td>
<td>Sungai Buloh - Kajang</td>
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<tr>
<td>SCORE</td>
<td>Sarawak Corridors Renewable Energy</td>
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<tr>
<td>SDC</td>
<td>Sabah Development Corridor</td>
</tr>
<tr>
<td>SEDIA</td>
<td>Sabah Economic Development and Investment Authority</td>
</tr>
<tr>
<td>SMS</td>
<td>Short Message Service</td>
</tr>
<tr>
<td>SPAD</td>
<td>Suruhanjaya Pengangkutan Awam Darat</td>
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<tr>
<td>SSL</td>
<td>Sub-Surface Lines</td>
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<tr>
<td>TDM</td>
<td>Travel Demand Management</td>
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<tr>
<td>TDMP</td>
<td>Travel Demand Management Plan</td>
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<tr>
<td>TOD</td>
<td>Transit-Oriented Development</td>
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<tr>
<td>TTP</td>
<td>Taxi Transformation Plan</td>
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<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>URDP</td>
<td>Urban Rail Development Plan</td>
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<tr>
<td>VKT</td>
<td>Vehicle Kilometres Traveled</td>
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Executive Summary

THE NEXT STEP ON OUR JOURNEY TOWARDS VISION 2020
Malaysia’s developmental journey is to be celebrated. From a predominantly agriculture-based nation, we have grown into a dynamic, diversified economy. And now we are at a critical juncture on our journey. The global economic landscape is uncertain and changing profoundly, and Malaysia needs to craft new strategies to keep progressing.

In this period of change, our developmental goals remain bold and ambitious, encompassing economic and social dimensions of growth, inclusiveness and sustainability. In the current context, this means moving towards high income status in a holistic manner.

Effective provision of a first class land public transport system is a fundamental building block supporting this aspiration. Such a system moves people and goods; enables access to employment, education and entertainment; connects urban and rural areas. These are essential elements of not only economic growth but of inclusiveness in the sharing of economic benefits.

LAND PUBLIC TRANSPORT TRANSFORMATION SUPPORTS THE NATIONAL TRANSFORMATION AGENDA
Land public transport transformation is situated within the overall national transformation agenda led by the Government Transformation Programme (GTP), Economic Transformation Programme (ETP) and the 10th Malaysia Plan (10MP) – all of which aim to realise the socio-economic aspirations of Vision 2020.

This document, the National land public transport Master Plan seeks to support Malaysia’s efforts to become an inclusive and sustainable high-income nation by delivering a high-impact land public transport transformation. It provides a comprehensive strategy for this transformation to achieve the vision of making public transport the rakyat’s choice for mobility by 2030.

PUBLIC TRANSPORT AS THE RAKYAT’S CHOICE FOR MOBILITY
A series of actions and interventions are set out in this Master Plan that will increase the usage of public transport by the rakyat across geographic and income dimensions. Its objective is to achieve an land public transport modal share of 40 per cent in urban areas, enhancing access in underserved rural areas, while increasing connectivity between geographies. To achieve these objectives the Master Plan will set out measures to enhance connectivity, service levels, safety and convenience; reduce journey times; and ensure the sustainability of the public transport system. The macro-policies and principles in this Master Plan will guide all land public transport initiatives, implemented by multiple authorities and agencies throughout the country. Collectively, these initiatives will deliver an integrated and coordinated land public transport solution for Malaysia.
A FIRST CLASS LAND PUBLIC TRANSPORT SYSTEM CONTRIBUTES TO SOCIAL AND ECONOMIC DEVELOPMENT

Historical data in Malaysia and around the world indicates a correlation between GDP and mobility growth – increased population, employment and economic activity always translate into higher mobility requirements. In this context, a first class land public transport system is especially important given our immediate aims as outlined in the ETP: 6 per cent annual growth and 3.3 million new jobs by 2020. Travel vehicle demand grew from 13 million trips per day in 1991 to 40 million in 2010. Projections point towards this trend continuing in Malaysia, with the figure expected to reach a staggering 133 million in 2030. With urbanization expected to reach 70 per cent by 2020, there is a need to enable an efficient and smooth flow of people, which in turn also enables growth of new urban areas through increased connectivity.

Beyond satisfying a growing demand, land public transport plays a catalytic role in accelerating and shaping economic growth. Provision of effective public transport services has the potential of opening up new growth clusters, enhancing the attractiveness of existing clusters, and driving urban revitalization. And there are other positive spill-over effects of increased economic activity built upon an advanced land public transport network – it yields employment and business opportunities in local economies by having synergies with other industries like advertisement, retail and property development.

Malaysia has seen a surge in ownership of cars and motorcycles across the country, which is an indication of our country’s increased prosperity, but although private vehicles contribute to the mobility solution, sustainable and inclusive social and economic development cannot be overly dependent on private vehicles. As a general rule, public transportation is more affordable and mitigates traffic congestion as well as the attendant pollution problems caused by private vehicles on the road. All this puts tremendous pressure on the land public transport system to meet the mobility and connectivity requirements closely linked to the social and economic development agenda.

MALAYSIA’S LAND PUBLIC TRANSPORT SYSTEM HAS EVOLVED OVER TIME

Given the importance of land public transport in the overall national development agenda, it is important to take stock of advancements in land public transport provisions. Infrastructure development has delivered concrete improvements to passengers, offering high-impact land public transport solutions to mobility requirements. We have seen increased sophistication of transport networks and services, enhancing connectivity within urban centres through the Light Rail Transit (LRT), monorail, Keretapi Tanah Melayu KTM rail services and stage buses. There are also increased land public transport linkages between different regions across the country – the 2010 demand for inter-urban rail stood at 4.2 million people and the express bus services experience over 8,000 departures per day.

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1 Source: National Highway Development Plan 2007 (forecasts unconstrained by capacity and regulation)
Upcoming and highly anticipated transport projects like the LRT extensions, the Mass Rail Transit (MRT), and the Bus Rapid Transit will bring the Malaysian land public transport landscape to even greater heights – affording Malaysians greater access to first world land public transport infrastructure and services.

**FURTHER IMPROVING THE LAND PUBLIC TRANSPORT SYSTEM**

Notwithstanding these successes and the advancements to come, there are strategic imperatives to improve accessibility, quality and safety of the land public transport system.

**Strategic imperative 1: Enhance Land Public Transport connectivity across urban conurbations and access in rural areas**

There is a strategic imperative to improve connectivity within urban conurbations, especially in areas where the population density is highest. Land public transport services need to reach as many urban dwellers as possible, with a broad network that meets intense mobility demands. This will require a comprehensive multi-modal solution that increases access to passengers within conurbations. These solutions will be comprehensive by including enhancements and expansions to existing services, investments in new infrastructure and services, and investments in integration across modes. Together they will increase capacity of the land public transport systems already at their limits. Example initiatives in the Klang Valley include:
The Klang Valley MRT project, consisting of 3 lines covering 145 km
Bus Rapid Transit lines along 13 corridors
Doubling the Monorail line coverage to 33km
35km LRT line extensions, increasing total coverage to 147 km

Similarly initiatives will be crafted for other urban conurbations as part of the respective regional master plans, scheduled to be completed by 2015. An example initiative outside the Klang Valley already underway is the Rapid Transit System (RTS) linking Johor Bahru and Singapore, which will have co-located Customs Immigration Quarantine (CIQ) facilities to increase ease of the cross-border travel.

Alongside capacity expansions in urban areas, there is also space to develop creative solutions that improve accessibility and sustainability of land public transport in rural areas with low passenger numbers, as well as increase their inter-city connectivity. Innovation for rural areas need not entail new services or large investments but should focus on high-value interventions that improve the quality of existing services at relatively low capital cost. Efficient use of grants and innovative measures such as joint ownership structures between government and private companies (PPPs, or Public-Private Partnerships) are some examples to be considered in capitalising upon this opportunity.

**Factoid:** To salvage rural bus routes in Shikoku, Japan after a large operator went bankrupt in the 1970s, local municipalities began allowing taxi operators holding charter bus licenses to also operate stage buses.

**Strategic imperative 2: Ensure affordable and accessible public transport services by enhancing industry structure**

While public transport is a social good and may in several instances require public subsidies, a vibrant private sector presence and robust, profitable and sustainable public transport industry structure will deliver accessibility and consistent service quality in a sustainable manner. Changes over the past decade have led to a measure of consolidation through government-owned entities. However industry structure continues to be a concern, with many operators sustaining losses. For example, there is a shortfall of RM1.50 per bus per km as operating costs exceed revenue, leading to a funding gap of RM470 million per annum, nationally. A robust land public transport industry can still be public sector-operated – the key is not who operates it but how best to develop an industry that is structurally sound, and provides the right incentives to ensure high quality and highly efficient operations. This will ensure affordable and accessible public transport services, while ensuring maximum value for tax payer’s dollar.

Meanwhile, there are multiple examples globally of public transport operators being able to achieve positive margins and acceptable returns. Major bus operators across the world are registering average operating margin of 9 per cent, while other examples among rail operators, such as the Mass Transit Railway (MTR) in Hong Kong, register operating margin of 36 per

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2 Bus operators examined were: First Group (Greyhound), Arriva, National Express, Stagecoach, Comfort Delgro, GoAhead, KMB, Jiangxi Changyun and Nanjing Zhongbei. Recent available financials were used (2009-2011)
While there are market-specific nuances to consider, there is a critical need to engage in a thorough industry review to justify broad-based industry restructuring. Depending on the particular segment and mode of transport, the areas in industry up for review will need to be comprehensive, covering areas such as:

- Route planning and mix of profitable and unprofitable routes between operators
- Structure and incentives to ensure a focus on cost and efficiency while maintaining service levels
- Licensing and pricing structures to balance between operator revenues and affordability to the rakyat.
- Ownership structures to avoid monopolistic behaviour
- Subsidy structure to ensure public resources are channelled to deliver maximum impact

Such a review should also suggest collaborations with businesses that have synergies with public transport, e.g., advertisement, retail and property development – to further enhance the industry structure, ultimately reducing the tax payer’s burden. For example, non-farebox (NFB) revenues offer great opportunities to increase overall profitability, fundamentally changing the attractiveness of the industry. Data indicates that in the mid-2000s, 11 per cent of overall revenues for operators in Asia consisted of NFB revenues. Japanese private rail operators led the way in capitalizing on the NFB opportunity – with property development, retail and other NFB sources making up over 75 per cent of revenues.

A robust industry structure will also be able to deliver enhanced services to the mobility-impaired, e.g. Orang Kurang Upaya (OKUs) by investing in infrastructure and making necessary changes in operations to increase accessibility to all.

These reviews, their subsequent interventions and incentives, will help create an environment that generates financial returns at the operator level, without compromising accessibility and connectivity for Malaysians.

Factoid: Private operators represented by the Pan Malaysia Bus Operators Association cover approximately 80 per cent of routes outside the Klang Valley but experience huge losses due to unprofitable routes and increasing cost. In June 2012, the government approved over RM16 million in grants to assist 68 of these stage bus companies.

3 2010 financials
4 Source: Press searches
Strategic imperative 3: Enhance service levels and convenience by improving monitoring and enforcement, as well as “soft integration”

As a service provision, land public transport is an experiential commodity and therefore the passenger is an integral component of the enhancement of the land public transport system. To improve the passengers’ experience of the land public transport system and to be more rakyat-centric, a focus should be placed on improving the land public transport’s existing service quality, reliability, safety and convenience. This can be initiated by improving the regulation of the land public transport system and driving effectiveness and efficiency. This can in turn be achieved by bettering the coordination of the multiple agencies and authorities involved in regulation.

Beyond improved coordination amongst the different regulatory agencies, a long-term solution for the land public transport system also needs to include direct enhancement of frontline enforcements, such as:

- Ensuring the enforcement procedures are updated and relevant for the times
- Training and developing the capabilities and competencies of frontline personnel
- Reconsidering the allocation of resources to ensure that the requisite amount is channelled to the right areas

A further component of enhancing service quality is to create a seamless experience for the passenger of the land public transport network, across the multiple modes. This entails soft integration efforts, whereby convenience is enhanced not only through the physical integration of networks, but through investing in the user’s direct interface with the land public transport system. An example would be to introduce an integrated cashless payment system. Passengers could use a contact-less card to make transactions and to apply as they travel across various modes with ease.

Factoid: The Oyster card in London, which is applicable for bus, underground train, tram and rail services has proved tremendously successful due to the convenience it offers to travellers. Over 17 million cards have been issued since the launch in 2003 and around 78 per cent of all bus and tube payments are made by Oyster card due to the convenience it offers.

Factoid: The Octopus card has had an enormous socio-economic impact in Hong Kong. It allows users to make quick cashless payment transactions for most transport modes. It has even become a payment method for several retail providers, making the card a central feature of everyday life in Hong Kong.

5 Transport for London, Press Search, Web Search
Strategic imperative 4: Enhancing safety levels of public transport

Above all else, to be the rakyat’s choice for mobility, public transport must be safe and perceived to be safe. By taking concrete and observable measures to minimize accidents and incidences of crime on land public transport services, we can re-instit confidence in land public transport passengers. To evaluate the existing industry-specific safety measures requires a comprehensive approach will/needs. In particular, measures concerning licensing, driver training and vehicle road-worthiness will need to be upgraded. These safety measures should be supported by strict enforcement procedures that impose stiff penalties to ensure adherence to rules and regulations within the industry. Here, the public should be proactively engaged to assist in enforcement efforts.

![Figure C: Total road crashes involving buses](image)

Strategic Imperative 5: Reduce Congestion, Pollution, and Increase Incidence of Cycling and Walking at the First/Last Mile

Land public transport has a role to play in enhancing Malaysians’ quality of life. In the first instance, increasing land public transport modal share will have a direct impact upon congestion and pollution levels by having fewer carbon-emitting vehicles on the road. Beyond that, engaging levers that improve the land public transport’s accessibility and user-friendliness will also indirectly increase cycling and walking as passengers embark and disembark from and to destinations (first/last mile). Therefore, land public transport systems should be designed not merely to increase modal share but to encourage healthy lifestyle practices as well. In addition, land public transport infrastructure and operations should themselves aim to be environment-friendly by adopting green technologies and practices.

Factoid: In 1997, the city of Bogota, Colombia was facing severe pollution problems. After implementing the TransMilenio rapid bus system which generated modal shift from private cars to buses (9 per cent of passengers were car users), traffic pollution decreased by 42 per cent in 2003.
STRATEGIC OBJECTIVES OF THE LAND PUBLIC TRANSPORT TRANSFORMATION
The land public transport transformation is therefore anchored around the following five objectives:

1. **Physically well-connected**
   Increasing connectivity is fundamental to making public transport the rakyat’s choice for mobility. Travellers are more likely to use public transport if they are able to access the network from and to as many locations as possible.

2. **Affordable and accessible to all**
   In line with the national aspiration of inclusive growth, land public transport should be available to rakyat from all walks of life, regardless of income levels.

3. **High service levels, quality and convenience**
   The national public transport system should be the transport option of choice. It should therefore meet the rakyat’s expectations of service, reliability and all-round user-friendliness.

4. **Safe and secure**
   Ensuring the safety and security of land public transport users is of paramount importance. The rakyat needs to be convinced that they and their family can safely use any form of public transport.

5. **About a better quality of life**
   Land public transport transformation should aspire towards a clean and green environment, which would enhance the rakyat’s overall quality of life.

TOWARDS A COMPREHENSIVE LAND PUBLIC TRANSPORT SOLUTION
The Master Plan represents a bold and innovative step towards improving land public transport services in Malaysia and represents a profound shift from past transformation efforts. This new strategy of harnessing innovative approaches in land public transport to achieve our overall vision, is the first of its kind. There are ten guiding principles in this Master Plan that we will adopt to ensure sustainable impact.

**1. Rakyat-centric**
A plan that ultimately aims to increase service usage must have the end user at the centre of all its transformation efforts. In this case, the land public transport transformation is rakyat-centric, aiming to improve the people’s quality of life through comprehensive land public transport solutions. Translating this on a practical level, every policy action in the Master Plan is aims to ensure the rakyat enjoys the fruits of the land public transport transformation. To help achieve this, the Suruhanjaya Pengangkutan Awam Darat or Land Public Transport Commission (SPAD) will actively engage the public to solicit input and feedback, via Open Days and online forums that facilitate dialogue.
2. Comprehensive national coverage

The Master Plan proposes guidelines, principles and solutions at a national level – covering intra-regional and inter-regional mobility across the country. This is especially significant considering Malaysia’s land public transport terrain is fragmented – involving multiple authorities and agencies, serving a varied demographic mix that have very different transportation and mobility needs.

As mobility demands are most intense in city centres with dense population, the focus of the land public transport transformation might be expected to be on urban transportation needs, involving large scale infrastructure investments necessary to provide solutions to scale. However, the concerns of the Master Plan are unequivocally national in character. It strives to achieve national solutions for what is a national issue.

3. Holistic solution

Achieving an land public transport transformation requires a holistic approach, spanning multiple dimensions. There is no ‘silver bullet’ that can deliver impact simply by engaging one or two aspects – especially not when we aspire to achieve fundamental and systemic improvements. This is reflected at the level of strategic objectives that are comprehensive in covering the various areas for improvement:

- Connectivity
- Accessibility and affordability
- Service quality and convenience
- Safety and security
- Environmental impact

The Master Plan also takes a holistic view on the functional approaches to achieving each strategic objective, proposing initiatives along the following themes:

- Capacity and service expansion
- Enforcement and monitoring
- Regulatory strengthening
- Financial sustainability and industry profitability
- Human capability building

4. Fact-based approach to managing trade-offs

The Master Plan is crafted with the realistic acknowledgement that some of our objectives demand trade-offs. For example, in some market conditions, a high quality of service is at odds with the principle of affordability and profitability levels for operators. However, conflicting or
not, all objectives need to be achieved for Malaysia’s land public transport vision to become a reality. To manage this there are fact-based measures to mitigate, balance and offset particular effects. We will take a rigorous approach, coupled with creative solutions, to balance the needs of the rakyat and operators while managing the burden on the tax payer.

5. **Incorporate international best-practice**

Many of the land public transport challenges and aspirations are not unique to Malaysia. Most, if not all, countries face similar issues with their land public transport systems: connectivity, accessibility, service quality, safety and environmental sustainability. Most also face institutional and systemic challenges, which require innovative solutions. This Master Plan recognizes and draws on the experiences of others to ensure that our policies and action plans reflect the world’s best practice. That said, international lessons are valuable as long as they are tailored to specific situations, and the Master Plan seeks to adapt the experiences of others to Malaysia’s set of circumstances for maximum impact.

6. **Minimize the burden on the tax-payer**

Systemic transformations often entail substantial monetary investments to achieve desired returns. Although a lot of the transformation will include reallocation of resources and institutional reforms that increase overall system efficiency, there is no avoiding the fact that new funding is a necessary component to the entire transformation. This Master Plan is guided by the principle that those investments should be made with minimal cost to the tax payer. Stringent assessment will accompany the disbursement of public funds and the relevant initiatives closely monitored to maximise return on all funds expended. Where possible, the Master Plan also incorporates a balanced use of PPPs that spreads costs and reduces pressure on public finances.

7. **Measurable outcomes**

A transformative agenda requires objective measurement to assess the success of any proposed plans. The Master Plan defines very specific Key Performance Indicators (KPIs) aligned to each strategic objective. These KPIs will be tracked to measure the progress of the transformation. In some instances, targets for these KPIs are already set. For example, the Master Plan explicitly targets an increase of 40 per cent modal share in land public transport in urban areas by 2030, with other targets to be identified in the near to medium term. The outcome-oriented approach introduced here will further drive concerted performance measurement efforts at national and local levels.

8. **Transparency and accountability**

A crucial lever in delivering successful transformation is transparency and accountability. KPIs and internal performance monitoring can only go so far if those implementing them are not held accountable to them. We believe that being accountable to the public presents a sure way of maximising institutional efficiency and effectiveness in delivering desired results. As the regulator, SPAD will be transparent with the public on the performance of the land public transport transformation KPIs. In doing so, the Master Plan mandates an annual comprehensive stock-take to identify progress on specific KPIs, with findings published in a publicly available Annual Report.
9. Focus on delivery

While the Master Plan is principally a strategic policy tool, its ultimate goal is to fulfill the stated land public transport vision. To that end, it contains concrete action plans that will deliver the desired results on the ground. Nonetheless, we acknowledge that many plans fall short of delivering desired transformation due to an insufficient focus on execution. This Master Plan proposes structures and frameworks to govern implementation of land public transport interventions – from infrastructure planning to regulation and enforcement. Taken together, these action plans and this focus on execution will produce implementable interventions that will result in improved land public transport provisions for the rakyat.

10. Calibrated transformation

The policies and action plans proposed in the Master Plan are ambitious and transformative. But the Master Plan is based on the premise that systemic transformations take time and require sequencing. Getting the fundamentals of the system right is of great importance. Making sure that network integration, enforcement procedures, institutional setup across agencies and other basic enablers are up to standard before embarking on more sophisticated and complex initiatives is the right approach. It maximizes the prospect that the system as a whole will be successful in the medium to longer term.

To illustrate this with an example, Travel Demand Management (TDM) will include push factors that make private transport a less appealing option to satisfy mobility needs. While theoretically, this should mean a higher land public transport modal share, we must ensure that land public transport networks and infrastructures have adequate capacity to meet increased demand prior to implementing demand management.

<table>
<thead>
<tr>
<th>TDM complements direct land public transport measures to help encourage modal transfer from private vehicles. Typically such measures seek to provide incentives to travel on land public transport.</th>
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<tr>
<td>The goals of TDM measures in other countries include:</td>
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<tr>
<td>i. Making public transport option more palatable through measures such as flexible working hours</td>
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<tr>
<td>ii. Improving users knowledge and confidence in land public transport through effective marketing and communications</td>
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<tr>
<td>iii. Implementing pricing and non-pricing policies that deter private car use and create mode-shift, e.g. high parking charges</td>
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Land public transport transformation in Malaysia also needs to be based on the recognition that both federal and state authorities have a responsibility for key elements of the land public transport system. The process of change will need to take into account the varying needs and capacities of Malaysia’s states. The Master Plan therefore takes a calibrated approach to
transformation, balancing quick-win initiatives with long term structural changes required to ensure sustainable transformation.

**TAKING THE MASTER PLAN FORWARD**
The Master Plan will be a strategic policy tool guiding federal, state and local authorities that form the land public transport planning and regulatory landscape. As the national regulator, it follows that SPAD will lead the implementation of this Master Plan – working closely with other agencies at the federal and local level.

As the approaches, guidelines and solutions in this Master Plan are contextualized throughout different parts of the country, SPAD will be mostly guided by the rakyat’s interests. It is uniquely positioned to adopt a macro-perspective to ensure that the Master Plan’s promises to the rakyat are delivered.
Chapter 1: Historical perspectives

1.1 RECENT ECONOMIC AND DEMOGRAPHIC TRENDS
Malaysia’s growth story so far is one that should evoke pride in all. The economic boom beginning in the 1970s allowed Malaysia to transform from being a principally raw materials producer into a robust and resilient multi-sector economy. The Malaysian people’s quality of life was significantly enhanced – incomes grew and the provision of public services continues to improve to the rakyat’s benefit.

Real Gross Domestic Product (GDP) has grown by 6.3 per cent per annum between 1970 and 2010, during which the GDP per capita also rose from RM6,000 to RM30,000. We have almost completely eradicated extreme poverty whilst seeing inequality fall.

<table>
<thead>
<tr>
<th>Real GDP</th>
<th>RM millions</th>
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<tbody>
<tr>
<td>1970</td>
<td>48,592</td>
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<tr>
<td>2010</td>
<td>557,449</td>
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6.3% CAGR

Real GDP has grown at an average rate of 6.3% per annum from 1970 until 2010

The poverty rate of the country has reduced substantially since 1970. As of 2009, hardcore poverty stands at 0.7%

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<thead>
<tr>
<th>Poverty rate</th>
<th>Percent</th>
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<tr>
<td>1970</td>
<td>49.3</td>
</tr>
<tr>
<td>2009</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Gini Coefficient

Inequality in the country has also reduced since 1970

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<tr>
<th>Gini Coefficient</th>
<th>1970</th>
<th>2009</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>0.513</td>
<td>0.441</td>
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Figure 1.1: Real GDP growth from 1970 - 2020
This story of Malaysia’s economic progress is also inextricably linked to its population growth over the past decades.

Since 1980, Malaysia’s population has more than doubled to hit 28.3 million\(^6\), with population density also increasing over time. Malaysia’s population growth has been on a downward trend over the past 10 years in line with other urbanizing countries.

Figure 1.2: Malaysia’s population growth from 1980 - 2010\(^7\)

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\(^6\) 2010 Population and Housing Census

\(^7\) 2010 Population and Housing Census
The Central Region encompassing Kuala Lumpur and Selangor has seen the largest increase in population, although all regions in Malaysia have experienced growth.

The economic and demographic developments over the past decades have brought with them increased growth in mobility and connectivity. Over the past 20 years, travel vehicle demand across all modes have more than tripled - from 13 million trips per day in 1991 to 40 million in 2010.

![Figure 1.3: Growth in travel demand](image)

**1.2 EVOLUTION OF PUBLIC TRANSPORT SERVICE DELIVERY**

These trends of mobility demands brought about by economic progress and prosperity have increased the pressure for public transport service delivery. With some measure of success, provision of public transport has expanded and improved along with the increase in the number of commuters.

There has been significant infrastructure development and investments in the public transport space – delivering services to more Malaysians and covering larger distances over time. We have come a long way since the 1970s when the minibus was the most popular mode of transport to the 21st century – where Malaysians depend on the LRT, Monorail, KTM services, the KL International Airport Express (KLIA Express) and Rapid KL stage bus services.

Long-distance land public transport has also expanded, providing various options to the public, from basic rail travel to luxury coach hires. For example, between 2003 and 2010 there was a 25 per cent increase in demand for inter-urban rail to 4.2 million passengers annually. In response, an extensive network of inter-urban express bus services within Peninsular Malaysia was established, with 48 licensed operators handling at least 73 brands. With over 8,000 departures per day, this network has managed a considerable portion of the growth in demand.

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8 National Highway Development Plan 2007
9 Inter-Regional Plan by SPAD
Just as services have expanded, the structure of the land public transport sector has evolved. While support has always been forthcoming from the government, the precise nature of government involvement in the provision of public transport has also changed over time.

Central to this is Malaysia’s experience with land public transport privatization, where some attempts have been more successful than others. This has led to some industry consolidation by government-owned entities. Rail services, for example, have been corporatized, reflecting changes in management and operations – even as Keretapi Tanah Melayu Berhad (KTMB) remains a wholly-owned public entity. Moreover, the government’s role in land public transport goes beyond assets and operations. Guided by legislative changes, regulation and monitoring mechanisms have risen to more sophisticated levels – bringing enhancements to service and safety standards.

1.3 CHALLENGES
Despite these advancements, the land public transport story over the past decades also reveal key challenges and areas for improvement. It is important to map out these challenges as they highlight the kinds of strategies and interventions required.

1.3.1 Sustainability Challenge
The mixed success of land public transport privatization to date is indicative of the sustainability challenge that the industry faces moving forward. The reasons why some private ventures proved unsuccessful are complex and sometimes contested, but it is fair to assert that low passenger numbers affected the financial returns of some land public transport service providers, many of which required large upfront capital expenditures.

Related to this is the rapid growth of private vehicles as a transport mode of choice among the Malaysian public. Over a period of just 20 years, registration of private motorcycles and motorcars has increased almost three-fold from 4.7 million in 1990 to 18.6 million in 2010. At the same time, data indicates falling public transport modal share, especially in urban areas where mobility demands are most intense.
The most recent authoritative data from 2008 shows that the land public transport modal share in the Klang Valley has dropped to as low as 10 per cent.

Needless to say, the immense surge of private vehicular travel while public transport takes a backseat has brought on certain negative externalities, such as congestion and pollution. These externalities measured over time point to the role that land public transport can play in reducing carbon emissions by increasing land public transport modal share. Even more troubling is the correlation between vehicle ownership and road accidents.

Figure 1. 4: Percentage of AM peak public transport modal share

Figure 1. 5: Comparative growth in vehicles and accidents

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10 Source: Urban Public Transport Final Lab Report
11 Source: Ministry of Transport
1.3.2 Coordination Challenge
While regulations and monitoring have expanded along with the physical development of land public transport services, there is still room for improvement. Until the SPAD Act (2010), the land public transport planning and enforcement framework was especially fragmented – involving multiple authorities with objectives aligned to their own charters. All had the land public transport agenda infused within their larger mandates, but there was no single regulator or agency with the express and overriding responsibility for strategic management of the land public transport system.

<table>
<thead>
<tr>
<th>Buses &amp; Taxis</th>
<th>Rail</th>
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<tbody>
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<td>MEGTW</td>
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<tr>
<td>EPU, PMD</td>
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<tr>
<td>TCPD, MHLG</td>
<td></td>
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<tr>
<td>MoT; CVLB, PMD</td>
<td>DoR, MoT; MoT</td>
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<tr>
<td>JKJR, MoT; MIROS, MoT</td>
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<tr>
<td>MoW</td>
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<tr>
<td>Local Authorities &amp; State Governments</td>
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<th>Policy &amp; Planning</th>
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<tbody>
<tr>
<td>JPJ, MoT; CVLB, PMD</td>
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<td>CoT, MoTour</td>
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<td>Local Authorities &amp; State Governments</td>
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<th>Regulation</th>
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<tr>
<td>CVLB, PMD</td>
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<td>JPJ, MoT</td>
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<td>DoE, MNRE</td>
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<tr>
<td>PDRM, MHA</td>
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<tr>
<td>Local Authorities &amp; State Governments</td>
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Figure 1. 6: Authorities involved in land public transport

Having multiple authorities and agencies involved does not automatically lead to delivery problems, even if it poses unique challenges. The primary issue was a lack of coordination, leading to suboptimal land public transport delivery along multiple dimensions: planning, regulation, enforcement and integration with spatial development.

Historically and before the establishment of SPAD, there was little coordination within the stage bus or taxi sub-sectors, let alone across the whole land public transport network. This lack of coordination also meant that public transport implications were not always given adequate consideration in spatial development, which is the purview of local authorities. The result was a land public transport system that was not integrated internally or with the broader spheres that affected it.

All of this led to observable shortfalls in land public transport provisions. Since the expansion and improvements of modes, infrastructure and support systems remained the remit of the respective agencies with inadequate coordination among them, often the endeavours would be unsuccessful. For instance, the Commercial Vehicle Licensing Board (LPKP) was unsuccessful in directing the provision of stage bus services in Bukit Indah, a new township outside JB, since operators were reluctant to venture into the developing areas. For rail, expansions and improvements are often limited by availability of land, resulting in any such exercise being protracted and expensive. As financiers historically drove railway planning on an individual project basis, the disjointed approach inadvertently led to poor connectivity and a fragmented network. The railway system in KV is a prime example of this poor integration affecting provisions – poor inter-connectivity and the absence of a common ticketing platform meant inadequate service and coverage to the more populated townships, such as Subang Jaya, Shah Alam and Putrajaya.

The effectiveness of regulation and enforcement was also affected. Such powers, while present, were rarely exercised due to human capital constraints. For instance, local authority enforcement personnel were not empowered to regulate and enforce on behalf land freight of LPKP or the Department of Railway. As such, multiple officers representing various authorities and agencies had to be present to undertake comprehensive enforcement.

Licensing, too, was the purview of various authorities. While rail licences were controlled, the same does not apply to stage buses and taxis. There were uncontrolled issuances of stage bus licences, especially along high demand corridors, resulting in operators suffering from earnings dilution. This, in turn, has frustrated the principle of “cross-subsidising” low-demand routes, which is one of the primary means of incentivising operators to expand service coverage.

Fare reviews for buses, rails and taxis were neither conducted regularly nor were there any mechanisms in place to take into account fuel price escalations, as there were in the airline industry. This resulted in eroding margins for operators, which exacerbated the lack of service coverage even further and led operators to under-invest in both existing and new assets.

Lack of coordination and integration also affects the commissioning and implication of feasibility research. Firstly, such studies were conducted on ad hoc basis and often commissioned by state governments or local authorities without active engagement with other implementers. Further, as the integrated network perspective is marginalised, the outcomes of the studies tend to focus on infrastructure development in isolation, as opposed to cross-system
optimisation of investments. This has a significant impact on the operational viability of such schemes.

Looking ahead, demands on land public transport are likely to increase as Malaysia ushers in the next phase on its march towards developed status. The trends and circumstances facing land public transport require bold and innovative approaches to fulfil land public transport’s role within the larger national growth story.

1.4 INCEPTION AND ROLE OF SPAD
It is within the context of an increasing need for a transformative solution in the land public transport agenda that SPAD was formed in 2010, with the following vision and mission statements:

**Vision:** To lead the transformation of land public transport to become the rakyat’s mode of choice.

**Mission:** To ensure “a safe, reliable, efficient, responsive, accessible, planned, integrated, affordable, and sustainable land public transport system to enhance socio-economic development and quality of life”.

These statements are supported by a list of objectives, which counts freight transport as an important element of the overall land public transport transformation agenda.

![Figure 1.7: The Vision, Mission and Objectives of SPAD](image-url)
The vision and mission statements encapsulate the integral role that land public transport is required to play in delivering increased economic development at this crucial juncture of Malaysia’s history. It is significant that SPAD’s mandate is enforced by three principal documents that together anchor the entire national transformation agenda: the GTP, ETP and the 10MP. In all documents, there is specific mention of the policies and transformations needed within the land public transport system to deliver enhancements in economic growth and quality of life:

- The Urban Public Transport National Key Results Area (NKRA) in the GTP spells out the need to raise modal share, improve reliability and journey times, enhance comfort and convenience, as well as improve accessibility and connectivity.
- The Greater KL/KV National Key Economic Area (NKEA) in the ETP seeks to achieve “top-20 ranking in city economic growth while being among the global top-20 most liveable cities by 2020” through nine Entry Point Projects (EPPs) – one of which concerns urban public transport.
- On a more national level, the 10MP stresses the need for developing a rakyat-centric public transport system. This precipitated the formation of SPAD.

1.5 THE ROLE OF THE MASTER PLAN
This National Master Plan is a crucial element towards the goal of delivering these national aspirations set out in the GTP, ETP and 10MP, as well as other national policy documents. The Master Plan is a principal policy tool that provides strategic direction and guidance in achieving the desired outcome for land public transport.

An integrated land public transport solution across the entire country will necessarily involve multiple stakeholders across different government agencies at federal and state level. However, the principles and approaches in this document apply across the board and will thus guide detailed federal-, state-, local- and sectoral-level plans. Successful delivery of land public transport transformation guided by this strategic policy tool promises to open a whole new chapter in Malaysia’s land public transport journey.

**SUMMARY**
- Malaysia’s GDP and population growth are fuelling mobility demands
- The land public transport system has evolved over time to include first class infrastructure to the benefit of the rakyat
- Moving forward, the land public transport system will face key challenges in meeting increased demands for mobility To meet these sustainability and coordination challenges, and land public transport system transformation is necessary
- SPAD’s establishment in 2010 represents an important step in the transformation journey
Chapter 2
Opportunities and Realities

2.1 MALAYSIA IS A LARGE AND DIVERSE COUNTRY
Malaysia has a total land area of 329,847 square kilometres. Serving the needs of a population of 28 million people across such a large area is a challenge for land public transport planners.

The National Physical Plan 2 (NPP2) articulates Malaysia’s spatial goals and strategies and provides planning guidance on what is required of planning at the federal, state and local level to support these goals and strategies. The NPP2 also indicates the broad pattern of land-use, and physical development to year 2020 in Malaysia.

The transport network strategies defined in the NPP2 must be supported and integrated into the land public transport system architecture. In particular, the land public transport network must be aligned to the broad configuration of road and rail networks as well as the major national gateways and transportation nodes, as outlined in NPP2.

2.2 CATERING TO THE INCREASED DEMAND IN MOBILITY THAT ACCOMPANIES ECONOMIC GROWTH
Economic growth goes hand in hand with an increase in the total number of public and private road and rail trips for people and goods, and Malaysia’s experience has been no different. As Malaysia looks ahead, the economy is expected to continue to grow at around 6 per cent per year\(^\text{13}\). Mobility growth can be expected to track economic growth, at around 5-7 per cent per year.

International Case Study
As economies develop, mobility demand (as measured in passenger-kilometre) tends to grow in tandem with GDP growth. This has been the experience for the United Kingdom (UK), Australia and Japan between 1981 and 1995, as illustrated in the graphs below where the mobility growth factor is almost always positive and is between 0.4 and 1.6 in most years.

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<tbody>
<tr>
<td>United Kingdom</td>
<td>-5.78</td>
<td>-5.41</td>
<td>0.91</td>
<td>0.90</td>
<td>0.79</td>
<td>1.47</td>
<td>1.43</td>
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<td>1.28</td>
<td>2.22</td>
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Table 2.1: Mobility growth factor for United Kingdom (UK), Australia and Japan
* Ratio of 3-year-smoothened growth rate of passenger-kilometre / 3-year smoothened growth rate of GDP: A mobility factor of 1 implies that the growth rate of mobility (measured in passenger-kilometres) is the same as the growth rate of GDP.\(^\text{14}\)

\(^\text{13}\) Source: 10\(^{th}\) Malaysia Plan
In adapting to the changing global economy, Malaysia is entering knowledge and high-technology based industries. Much of this economic and mobility growth is expected to come from Malaysia’s major urban centres. This will place an increasing strain on the already congested road networks in those areas. Without an increased investment in Malaysia’s infrastructure and capacity, the land public transport system will not be able to cope with the heightened demand.

As the affluence and aspirations of Malaysians go up, the car population growth is expected to mirror that increase by growing around 7 per cent per year. Increasing public transport capacity, alone, will not convince car-owners to leave their cars at home and take the bus or the metro train. The convenience and service quality and safety of public transport must also be enhanced before it can be considered to be a truly viable alternative to private transport.

2.3 LAND PUBLIC TRANSPORT DEVELOPMENTS CAN FURTHER ENHANCE ECONOMIC GROWTH AND PRODUCTIVITY

Beyond merely catering to mobility demand, land public transport plays three critical roles in enabling economic growth. Firstly, land public transport connects talent to the market by linking residential hubs to employment hubs. Malaysia expects to create some 3.3 million new jobs by 2020. Most of these jobs will come from Malaysia’s existing urban centres. As major cities, like KL, continue to provide jobs for an increasing population, land public transport outreach must extend further from the city centre in order to facilitate the daily commute of these employees. A wider land public transport network also means that these urban centres have a larger catchment of talent to hire from.

The second way in which land public transport supports Malaysia’s growing economy is by reducing congestion. Urban traffic congestion prevents people from getting to and from their places of work quickly. Spending this time unproductively in heavy traffic is a huge drain on productivity. Australia, for instance, estimated that urban traffic congestion in its capital cities cost the Australian economy in some 12.9 billion dollars in 2010 in lost productivity.

Traffic gridlocks in Malaysia’s major urban centres are already commonplace during peak hours, and it will only become worse. As successful land public transport systems globally have proven, efficient land public transport systems substantially reduce commute times, thereby alleviating this productivity drain. With the imminent growth of Malaysia’s urban centres, the capacity of the land public transport systems serving these cities must also grow in tandem with the rising number of people travelling to and from these city centres daily. At the same time, the land public transport networks must reach out wider than before, as the people will be travelling from further distances to get to these city centres. A pro-active approach to land public transport planning must be adopted to get to these outcomes, as taking a pure-market driven laissez-faire

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14 Source: World Bank, OECD
15 Source: MOT
16 The Benefits of Public Transport, Tourism & Transport Forum position paper 2010
to land public transport development will typically not result in an optimal land public transport architecture that connects people from distant places to their workplaces in dense urban centres.

And finally, an efficient land public transport system would support Malaysia’s economy because it drives productivity growth, which, in turn, enables the development of human capital. Malaysia’s economy has adapted and evolved over the years, beginning from an agriculture-based economy and slowly moving to a knowledge-based economy. To compete globally and regionally within Asia in the future, Malaysia will have to make the transition into an innovation era. To create a knowledge-driven innovation economy, it is imperative that all Malaysians have easy access to high-quality education. By providing physical linkages between their homes and centres of education, a well-developed land public transport network will help drive better education outcomes.

Figure 2. 1: Economic Transition Model

2.4 IMPROVEMENT IN LAND PUBLIC TRANSPORT WILL ALLOW FOR URBANIZATION AND URBAN RENEWAL

The shift in Malaysia’s economy towards higher value-added sectors has resulted in greater urbanization of the country. Education and rural-urban migration have provided the human capital required to support this shift. By 2020, about 70 per cent of Malaysia’s population will be living in urban centres. This pace of urbanization will be unsustainable without an attendant increase in the necessary infrastructure to support such a large population, particularly in the area of transport. Existing urban centres will feel this challenge most acutely as there will be limited scope for improvements of road infrastructure. Enhancing the public transport infrastructure and increasing its capacity will be the most viable and effective way of supporting urbanization in a sustainable manner.

Malaysia has also been planning and establishing new urban centres of growth, such as Cyberjaya and Putrajaya to complement the growth in the dense urban centres. In order to be

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17 Source: Malaysia Institute of Management, April 2008
viable to employers, potential employees and other commercial developers, these new centres of economic growth need to have strong transport linkages to other important economic centres, and in particular should be well connected by land public transport to residential areas.

2.5 PROMOTING ECONOMIC GROWTH IN LESS WELL-DEVELOPED REGIONS

Whilst the existing urban centres and KL/KV in particular, will continue to be the main economic engines of Malaysia’s growth, there will be increasing growth and development all across Malaysia. The country’s rich natural resources will continue to drive primary industries such as agriculture, forestry and mining.

The 10MP focuses on prioritising and accelerating the development of urban conurbations focusing on five corridors, in addition to the KL/KV development. Each corridor consists of high-density clusters with sectorial and geographical advantages. These corridors are:

i. **Georgetown and Northern Corridor Implementation Authority (NCIA) for the Northern Corridor Economic Region (NCER):** The objective of the NCER is to accelerate economic growth and elevate income levels in the north of Peninsular Malaysia – encompassing the states of Perlis, Kedah, Pulau Pinang and the north of Perak. The NCER initiative spans from 2007 to the end of the 12th Malaysia Plan period, i.e. 2025.

ii. **JB and Iskandar Regional Development Authority (IRDA) for Iskandar Malaysia:** Because of its strategic location, and a range of attractive fiscal incentives, Iskandar Malaysia is poised to attract an exciting influx of foreign and high-level corporate investments as discerning investors look to benefit from its many advantages and high growth potential.

iii. **Kuantan and East Coast Economic Region Development Council (ECERDC) for the East Coast Economic Region (ECER):** The ECER covers the states of Kelantan, Terengganu and Pahang, as well as the district of Mersing in Johor. The key economic sectors that have been identified for promotions in ECER are tourism, oil, gas and petrochemical, manufacturing, agriculture and education.

iv. **Kuching and Regional Corridor Development Authority (RECODA) for Sarawak Corridors Renewable Energy (SCORE):** The five-prong development strategy for this corridor is to: (1) Drive priority industries investments towards three major growth nodes i.e. Tanjung Manis, Mukah and Similajau; (2) Build a well-designed network of industrial class transport and communication infrastructure; (3) Fast-forward the development of energy supply; (4) Accelerate human capital development; and (5) Develop the tourism industry.

v. **Kota Kinabalu and Sabah Economic Development and Investment Authority (SEDIA) for the Sabah Development Corridor (SDC):** The SDC aims to enhance the quality of life of the Sabah people by accelerating the growth of economy, promoting regional balance and bridging the rural-urban divide while ensuring sustainable management of the state’s resources. In order to expedite the implementation of SDC, SEDIA has been entrusted as the One-Stop Authority to drive SDC, with the primary responsibility to plan, coordinate, promote and accelerate the development of the SDC.
Land public transport developments for each of these areas must be aligned to the plans of these corridors for socio-economic growth. In doing so, not only will land public transport be able to support and enhance their growth, but it will also benefit from the increase in passengers as a result of the developments there.

2.6 THE CHALLENGE OF BUILDING AN ECONOMICALLY VIABLE PUBLIC TRANSPORT SYSTEM
The provision of public transport infrastructure and services across such a large land area will be an expensive undertaking. Rail infrastructure in particular is very capital intensive, yet is a necessary investment for rapid inter-regional connectivity, as well as for intra-city travel in dense urban centres. The expected outlay for planned and on-going projects over the next twenty years is estimated to be RM180 billion.

Public transport operations become less commercially viable the further one gets from dense urban centres. Given the spread of Malaysia’s population across the large land area, it will be challenging to provide adequate land public transport services to all. Public resources can only go so far in bridging this gap. The public and private sectors will need to work together to ensure that the land public transport network as a whole is able to cater to the population’s needs.

Letting the free market operate unchecked is often not the optimal solution for public transport. Sectors with high demand will often be over-catered for, and while passengers may benefit from low prices, hyper-competition may result in low service quality and unsustainable business models for the operators. This is already happening to some extent in the stage bus sector. At the same time, sectors with low demand will be under-served, and people living there will end up paying too much to travel. The challenge for the authorities will be to put in place a regulatory structure that ensures market efficiency through competition while also allowing for cross-subsidization from the profits of high-density areas to finance the adequate provisioning of land public transport services to low-density areas.

2.7 LAND PUBLIC TRANSPORT SYSTEMS HAS THE POTENTIAL TO IMPROVE THE QUALITY OF LIFE AND ENVIRONMENTAL SUSTAINABILITY
An effective and efficient land public transport system not only boosts economic productivity, but also enhances the quality of life of the people who use it. It does so by alleviating stress experienced from spending hours in city traffic congestion on a daily basis. It also connects people from their places of residence to places of leisure and recreation. This in turn contributes to a sense of well-being and health.

Land public transport also contributes towards a cleaner environment by greatly reducing air pollution, thereby making cities more liveable and helping Malaysia move towards a more environmentally sustainable future.
2.8 LAND PUBLIC TRANSPORT PLANNING MUST BE INTEGRATED AND WELL-COORDINATED
In order for land public transport to support the nation’s aspirations effectively, it must become more efficient. For this to happen, land public transport must be integrated in two important ways. First, it should be well integrated within, i.e. different sectors, and modes of land public transport should be well-connected so that a journey is as seamless as possible. Second, the land public transport system should be integrated into the land-use of the area that it supports. Bus-stops and terminals should be planned so that they serve the people living, working or engaging in recreational activities nearby. Trains should support routes that are heavily used. Integrated land public transport interchanges which bring together several modes of transport should become more commonplace, and these should, in turn, be near important developments which would benefit from being an important land public transport node.

In order to achieve this end-state in the future, it is necessary that SPAD works together with the relevant public sector agencies in planning and developing the land public transport infrastructure and network. This Master Plan is a critical step in that direction. It will serve as the principal policy tool that provides strategic direction and guidance in achieving the goals for land public transport.

An integrated land public transport solution for the entire country will involve multiple stakeholders across different government agencies at federal and state level. However, the principles and approaches in this document apply across the board and thus guide detailed plans at federal, state, local and sectoral level action plans.

2.9 USING THE NATIONAL LAND PUBLIC TRANSPORT MASTER PLAN
This Master Plan has been designed primarily for three groups of users.

- Federal agencies: The Master Plan provides the strategic direction for land public transport development throughout Malaysia. It takes into consideration the need to effectively allocate resources which are critical towards economic growth and competitiveness.
- State and local authorities: The macro policies and plans developed under the Master Plan will be the basis for the development of the regional master plans and will facilitate land public transport planning and development at the state and local levels.
- General public: This Master Plan gives a broad overview of the land public transport transformation effort, including some of the initiatives that Malaysians can look forward to in the coming years.

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18 As measured in the total time it takes to get a person from one point to his desired destination.
SUMMARY

- Mobility demand is expected to increase in tandem with economic growth in the coming years.
- By connecting residential areas to places of work, education and recreation, land public transport plays a critical role in enabling socio-economic growth in Malaysia.
- The design of good land public transport systems will also enhance the liveability of densely populated urban centres, while also promoting environmental sustainability.
- One of the challenges of land public transport systems is the need to be as economically viable as possible.
- Land public transport planning must be done in a holistic manner and integrated into the broader land-use planning in order to offer maximum value to commuters.
Chapter 3
Objectives and Policies

3.1 TAKING MALAYSIA INTO THE FUTURE
Malaysia has high aspirations for the future. Vision 2020 set a goal for Malaysia to become fully developed. The 10MP articulated the clear goal of becoming a “high-income nation.” Underpinning this vision is a strong economic growth engine that raises income levels and standards of living all across Malaysia.

Public transport plays a vital role in enabling this vision in three important ways

- **Increased mobility** in public transport enables people to get to the places that they want to go to
- **Liveable cities** made possible by a safe, efficient and optimal public transport system that enhances the experience of city-life and also minimizes congestion and pollution.
- **Economic growth and transformation** facilitated by public transport which connects people to places of employment and education.

> “The aspiration of KL/KV is to be the only city that simultaneously achieves a top-20 ranking in city economic growth (as defined by city GDP growth rates) while being among the global top-20 most liveable cities by 2020” - ETP: A Roadmap for Malaysia, Performance Management and Delivery Unit (PEMANDU) 2010

Public transport must also grow in accordance with the demands and aspirations of the rakyat. Malaysians should consider public transport to be as natural and as easy an option as they now consider getting into a car or ascending a motorbike. We envisage Malaysia to have cleaner, less congested city roads leading to towns that have become less remote. Public transport will be available to everyone, and offer passengers an enjoyable, safe and stress-free experience. Public transport will be the norm.

Malaysia must transform its public transport system to achieve this vision of “**Public transport as the rakyat’s choice for mobility.**”

In achieving the vision, a transformative agenda is developed with a specific measurement objective which is an increase of 40 percent modal share in urban areas by 2030. This target will be tracked to measure the progress of the transformation. The outcome-oriented approach introduced here will further drive concerted performance measurement efforts at national and local levels.

3.2 STRATEGIC OBJECTIVES
To achieve this vision, public transport will have to undergo a transformation over the coming years. The planning and implementation of public transport must begin with the rakyat at the centre. It must enable any passenger to get to his or her destination cheaply, quickly and safely. Public transport should contribute not only to the personal well-being of the travellers by
offering a hassle-free and pleasant experience, but also to a clean and green Malaysia. Five strategic objectives characterize these elements of our vision for public transport and will guide land public transport planning at all levels and across all sectors. Land public transport must become:

1. **Physically well-connected**: People all across Malaysia must be able to use public transport to get to the places that they need to go.

2. **Affordable and accessible to all**: Malaysians of all income-levels and even the physically disabled should be able to take the public transport.

3. **Convenient and offer high service levels and quality**: Public transport must be efficient and reliable, and offer a pleasant journey experience to commuters.

4. **Safe and secure**: Passengers should feel safe taking public transport.

5. **About better quality of life**: Public transport should enable Malaysians to enjoy a better lifestyle.

The following sections will detail these objectives by laying out the policy commitments that will guide planning and development by the relevant public sector agencies towards achieving these objectives. Several of these policies are already being implemented through various action plans which will also be highlighted in this document.

Figure 3.1: Key policies towards achieving objectives
3.3 PHYSICALLY WELL-CONNECTED
Connectivity is central to public transport. The extent of public transport usage will be highly dependent on the strength of the physical linkages between people’s homes and the places they go. In supporting Malaysia’s socio-economic progress, these linkages should facilitate the efficient movement of people to places of employment, education and recreation.

Building infrastructure and capacity to cater to existing and future demand is therefore a key strategy in Malaysia’s land public transport transformation. It is important to identify infrastructure priorities early and to determine the required investment needs.

3.3.1 Policy - Enhance Urban Connectivity
By 2010, 67 per cent of Malaysia’s total population were living in urban centres. This number is expected to grow to 75 per cent by 2020 as Malaysia undergoes greater urbanization in the upcoming years. Based on the settlement hierarchy outlined by the National Urbanisation Policy (NUP), each level of growth conurbations would require an adequate transportation infrastructure that links all settlement areas within the conurbations, to create a single urban labour-market.

Bus networks form the backbone of most cities’ public transport network. Bus routes based on purely commercial considerations will not result in optimal coverage across all pockets of the urban population. **Stage bus network planning** is critical in ensuring adequate coverage of bus services across the city, and will be integrated into the overall land public transport planning at the regional and local levels.

In urban areas of dense population, road infrastructure may be over-burdened and have limited scope for further expansion. Here, rail could be an effective and efficient mode of transport to supplement the bus network. In order for rail to be operationally sustainable, it must meet minimum demand thresholds. For instance, an MRT rail system would require some 20,000 passengers per hour per direction to be feasible.

**Urban rail schemes** are therefore well-suited for mature cities. In KL/KV, plans exist to expand the rail network by providing additional MRT and LRT networks.

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19 Source: NPP2
20 A predominantly urban region including adjacent towns and suburbs; a metropolitan area
**Local case example**

**KV MRT Sungai Buloh – Kajang (SBK) line**

As identified in the KL/KV Urban rail development plan, rail capacity needs to be increased to meet the rising travel demands of commuters in KL/KV. To address this need, the KVMRT SBK line is presently being built. The line covers a distance of 51 kilometres (41.5 kilometres elevated and nine and a half land freight kilometres underground) with 31 stations. To ensure accessibility to the stations, 16 of them will have Park-and-Ride schemes whereby car users can drive from their homes to a nearby station and take the MRT train to their final destinations in the city centre. Several stations will serve as interchanges to existing rail lines (including KTM, Monorail and LRT) where passengers can quickly and easily switch mode of transport to get to their final destination. By the time it will be fully completed, in 2017, it is expected that the line will be able to carry some 384,000 passengers daily.

![SBK Mass Rapid Transit Project (MRT1)](image)

**Figure 3.2: SBK Mass Rapid Transit Project (MRT1)**

To provide comprehensive coverage to targeted growth areas in the KL/KV region, an additional two lines are presently being considered. It has been proposed that MRT Line 2 - the Circle Line - should provide an orbital link between areas such as Mid Valley, Mont Kiara, Sentul Timur and Ampang, as well as the planned Matrade. The third MRT line – the North-South Line - is meant to link developing areas such as Sungai Buloh, Kepong and Selayang with the Eastern hald and freight of the city centre (including Kampung Baru and Tun Razak Exchange). The actual alignment for both lines is subject to a detailed feasibility study which is expected to be completed by the end of 2012.
Malaysia’s urban population will become more concentrated in a relatively stable group of conurbations, particularly around KL/KV, Georgetown and JB. As the population densities in these conurbations rise, the need for urban rail schemes to support their mobility needs must be assessed when developing the respective regional master plans.

Here too, care has been taken to ensure integration with other transport modes. A total of 12 Park-and-Ride car parks will be built near the stations on these extensions, and both lines will be linked up at Putra Heights station.

### Local case example

The Kelana Jaya LRT line and Ampang LRT line will both be extended to Putra Heights to serve the highly populated catchment area of 3.4 million along the alignment, totalling about 35 kilometres in length. Together, they are expected to have a daily passenger count totalling roughly 779,000 by the completion of the lines by the end of 2020.

Here too, care has been taken to ensure integration with other transport modes. A total of 12 Park-and-Ride car parks will be built near the stations on these extensions, and both lines will be linked up at Putra Heights station.

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#### Figure 3.3: Proposed stations for LRT extension

Malaysia’s urban population will become more concentrated in a relatively stable group of conurbations, particularly around KL/KV, Georgetown and JB. As the population densities in these conurbations rise, the need for urban rail schemes to support their mobility needs must be assessed when developing the respective regional master plans.

### 3.3.2 Policy - Enhance Rural and Inter-City Connectivity

Good inter-regional links are essential alongside intra-regional connectivity to support the national aspirations. Connecting the major population and economic centres adequately through public transport networks is vital in ensuring that people and goods are able to move freely and easily through the country.

Malaysia enjoys an extensive inter-city bus network with 48 licensed operators serving the major cities and towns across Malaysia. Most of these bus routes currently connect to KL as that is the most popular destination, and prices on these routes are very affordable due to the stiff competition. At the same time less populous towns such as Bandar Seri Iskandar in Perak and Kuala Lipis in Pahang are not as well-served. To boost connectivity further and to ensure more
regular and frequent services even to towns with a lower demand, an inter-urban express bus network planning exercise will be conducted, and operators will be required (through a licensing framework) to serve not only the popular routes but also the routes with less demand at affordable rates.

To ensure better inter-city connectivity, the 10MP has identified the need for a Double Tracking and Electrification Project (DTP) along the rail tracks of Western Malaysia, and work is underway. This will allow for express services to ply alongside normal services and increase the service reliability and frequency of the train services.

To strengthen the connectivity between JB and Singapore, the RTS has been planned with the intention of being opened by 2018. The fully underground RTS will link JB Sentral to Singapore over a distance of about five kilometres and will be integrated into the public transport systems of both cities, to ensure a smooth transit during the journey in either direction. There will be a single CIQ facility, which will also enable speedier and more convenient travel across the border.

The NPP2 has identified a network of inter-regional links that would support growth and development across the nation. Work is underway to improve the quality of these links and build the links where they do not yet exist. The National Inter-regional Plan proposes infrastructure development that complements the links identified in the NPP2 as well as recommending the strengthening of future services. The rail extension to the Eastern Region, for instance, will connect KL to the Eastern Region; this will catalyse economic growth along the Eastern corridor, particularly in Kuantan and Kuala Terengganu in the long-term. At the same time, the East coast rail infrastructure enhancement between Gemas (in Negeri Sembilan) and Tumpat (in Kelantan) will be undertaken with the aim of enhancing services for freight and passengers and to increase accessibility in the Eastern Region. Finally, the Electric Train Service (ETS) extension will enhance connectivity from Georgetown to KL (covering Alor Setar and Kangar as well), while also providing ETS services between KL and JB to cater to mobility demands south of the Central Region. All three rail enhancements are being studied for their feasibility and operational sustainability.

At the same time, enhancements to rural connectivity will be undertaken to ensure that there is adequate land public transport linkage between rural centres and nearby towns so that people living there are able indirectly connected to the broader inter-urban and inter-regional land public transport network.
3.4 ACCESSIBLE AND AFFORDABLE TO ALL

Public transport should be available to all Malaysians on an equitable basis, and not only to those living in urban centres, the affluent, or the physically able.

3.4.1 Policy – Improve Route-Planning and Explore Alternative Models to Ensure Accessibility to the Under-Served

The public transport networks should reach out as widely as possible to serve the needs of even those living far away from major urban centres. In addition to having adequate road networks, this also means having a public transport service that intersperses and connects these less populous regions. Government has a role to play in route-management to ensure that as many people as possible are served through public transport.

The overall land public transport connectivity network should not stop only in the urban towns and cities but should extend to less densely populated rural areas as well. Just as there should be bus services connecting major cities to the satellite urban towns, there should also be concerted effort to provide land public transport services between these towns and the less dense rural areas. Such connectivity will ensure that those living in the rural areas are ultimately linked up to the entire country’s land public transport network.

Innovative and non-traditional public transport options should be considered in less densely populated areas. Could play a role here, particularly in rural areas and in outer suburban areas where, for example, full-fledged bus services may be unviable or physically infeasible. Para-transit services are typically of flexible nature and do not follow defined routes or stops. In some areas such services may be offered by the taxi drivers acting in their regular “for hire”-mode or under specific contractual arrangements to provide, for example, links to a bus interchange or rail station. These services can be planned and discussed with local authorities to determine the use and applicability of such services.
Pirate taxi drivers

In Malaysia, particularly in Sabah, it is estimated that about 2,500 pirate taxis operate in the state in various districts. Some of the pirate taxi drivers provide necessary services from small towns to villages that are currently not provided with adequate public transport system. There are plans by the State Commercial Vehicle Licensing Board (CVLB) to offer public service vehicle licenses to qualified pirate taxis in a bid to regularize the service and to raise the standard and reliability of the service provision.

Additionally, a set of indicators for social needs and accessibility will be developed to aid the monitoring and planning of land public transport systems. This will be to ensure that all population segments are adequately served by public transport.

3.4.2 Policy – Build Sustainable Land Public Transport Models Which Provide Affordable Services

The provision of land public transport services is a challenging one that must balance the conflicting objectives of (i) affordability; (ii) service quality; and (iii) operator economics.

Public transport services must be efficiently run and offer good value for money to ensure that it does not become an excessive burden to the tax-payer or unaffordable for the people it serves. Securing efficiency requires a combination of good coordination to optimise service procurement and the right level of competition (too little competition encourages complacency, high prices and low standards whereas too much competition keeps prices low but often at the expense of service quality and long-term operator viability).

Currently, in order to ensure connectivity and affordability to the rakyat, several land public transport systems are being subsidized by the Government. These include fuel subsidy (amounting to RM16 billion in 2009) given to operators of stage buses and inter-city express bus services.

In the next phase of the evolution of public transport, we must build from the lessons of the past and adopt service delivery models that are economically sustainable and best-suited to the mode of transport and the locale being served. These delivery models include, and are not limited to (i) regulated public service provision; (ii) Regulated private land public transport system development and/or service provision; (iii) Unregulated private land public transport system development and/or service provision; and (iv) PPP service provision.

SPAD will lead the effort to build expertise in these various models, learning from international best practices as well as from local experience. Buses in particular form a vital part of the land public transport system, and the initiatives to build a delivery model for stage bus and delivery model for inter-urban bus will give guidance in these areas. These models will include guidelines and recommendations on the means and mechanisms for regulating the operators. In addition, they will ensure minimum standards of service. The relevant regional, state and local authorities may also tap on SPAD’s expertise to assist in the assessment of the local conditions and to advise on the specific details of the implementation of these models.

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21 Source: Bernama News
22 Details in Section 4.3.1
Besides bus networks, taxis and rail services should also be regulated and governed by the relevant local authorities to ensure the optimal levels of service requirement at an affordable fare. To this end, the efforts to build a delivery model for taxi and delivery model for rail will similarly aid regional, state and local authorities to move their existing systems towards one which makes public transport more accessible for the general public.

As part of the overall regulatory and governance framework, fares will be monitored and regulated to ensure that they are affordable and reasonable. Here too, there are international best practices and a lot of local experience that the relevant authorities can learn from. These will be documented and implemented through a fares policy and review process.

3.4.3 Policy – Increase Accessibility For The Mobility-Impaired

The population segment most disadvantaged and excluded by the current land public transport network are those with mobility difficulties, as most existing systems were not designed with them in mind. Examples include stations and buses with high steps and no multi-level access. Similarly most systems do not provide adequately for people with impaired vision. Potential

International Case-study

Regulated private service provision – Hong Kong

Until 1975, Hong Kong’s bus services were effectively a system of two monopolies, where the two major operators, CMB and KMB, were granted exclusive rights within their respective operating areas.

In 1975, the licensing regime was changed to a route-franchise scheme with ten-year licenses issued to the operators. The new legislation also imposed a “profit control” scheme which imposed a cap on the return on net fixed assets. This was to encourage the bus operators to invest in new buses and infrastructure, particularly in good years. Whilst KMB took direction from the government in regularly upgrading its infrastructure, CMB invested the bare minimum, buying a minimum number of buses, many of them second hand. The limited competition and lack of tighter regulations to control service standards and fares resulted in a series of controversial fare increases without an attendant increase in service levels, which increased the public dissatisfaction.

In 1992, the government changed the franchising agreement by removing the “profit control” scheme, withdrawing the franchise rights for some routes, and introducing greater competition, soliciting new entrants for better service. By 1996, there were five major bus operators. In 1998 CMB’s franchise was not renewed due to low financial performance and public criticism. All franchise granted to CMB was granted to new entrants.

This heightened competition resulted in a positive outcome for the market. Several old buses were replaced by new and air-conditioned buses. Market forces brought additional capacity to high-volume routes, and by 2003, bus capacity had reached levels to adequately cater to demand during peak hours.

Source: Bus Regulation and Planning – Bus Sector Reform, Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH, 2002
improvements range from more accessible vehicles and infrastructure to staff trained to assist all users.

Going forward, a new transport project must factor in the needs of all segments of the population - including the mobility and visually impaired - and calculate investments accordingly. Correspondingly, existing infrastructure will be upgraded in phases. Appropriate guidelines on accessible infrastructure measures will be developed.

While the public sector should take the lead, private operators should similarly move towards a higher standard of catering to the needs of the mobility-impaired. The pace of transitioning should be reasonable so as to guard against an excessive cost burden to the operator, which will otherwise be passed on to the commuter, making land public transport less affordable.

3.5 CONVENIENT AND OFFER HIGH SERVICE LEVELS AND QUALITY
The overall journey experience is important in making land public transport services more attractive and raising the satisfaction of the users. The journey experience is affected by a number of factors including whether the operator and service staff provide professional and reliable services, whether the infrastructure and vehicles are well-developed and maintained and whether the overall journey, including transfers (via different sectors and stops) is smooth and seamless.

3.5.1 Policy – Raise Service Reliability Of Public Transport
Service reliability is a key aspect of the overall experience of public transport. To ensure certain minimum levels of reliability, clear standards should be documented, communicated transparently, and tied to the operator license. These standards should evolve over time to keep pace with the changing demands of the locale being served.

Enforcement is vital to ensure adherence to the requirements and standards, and to discipline errant operators and drivers that are not meeting industry standards. As license holders are currently accustomed to little enforcement action, the perception exists that there is little consequence to flouting regulations. It will therefore be necessary to undertake enforcement strengthening to make the licensing and regulatory regime effective in raising service standards across the board. To this end, the number of enforcement officers will be increased along with the number and frequency of ground operation audits to ensure that license requirements are adhered to. Investigation processes are also being reviewed to enhance efficiency and ensure that errant operators and drivers feel the pinch of the penalty. Where relevant, technology will be adopted to enhance enforcement capabilities. For instance, the feasibility of a centralised database of operators, vehicles and drivers accessible by enforcement officers on the ground is being studied.

Additionally, investments should be made into the existing yet ageing public transport infrastructure to raise the standards of service provision and match it to the needs of passengers today. Similarly, when greater frequency and regularity of service are required, there will be an investment in new land public transport vehicles. Already, the rapidKL bus system has invested in a new fleet of over 400 buses to ensure that there is adequate capacity on its routes. KTMB has also invested in 38 new six-car electrical multiple units (EMU) to raise capacity and the overall quality of the commuter train services. The appropriate sources and methods of
funding will be determined together with the relevant Federal agencies, catered to the specific needs of the area being served.

Malaysia’s inter-regional rail network in particular is currently under-utilized as it does not meet the expectations of the twenty-first century population. The inter-city rail service enhancement will work holistically towards addressing the quality of service levels, travel times and frequency of service in order to enhance the overall experience of travelling by rail. Synergies between rail services and other transport segments will be explored. The completion of electrification of the inter-regional rail network will also allow for significant service enhancements to be made. These service enhancements, which may require public funds, will also include a performance management system to ensure that the investments deliver return by raising reliability and customer satisfaction.

Supporting this effort will be the rail maintenance programme which will ensure that that the rolling stock and facilities remain of the highest operating standards. The programmes would also assess the vehicles mechanical status and put the performance of the vehicle against a number of quality checks.

3.5.2 Policy – Improve Service Standards For Operators, Drivers And Vehicles
To build a people-centric public transport system, a series of passenger charters will be established to define the baseline standards that passengers expect for each mode of transport. Critical elements of these charters will be embedded into relevant regulations governing public transport, to ensure that minimum standards of service are implemented across the board and that there is a level playing field for the operators.

These passenger charters should not be built in a vacuum. A comprehensive feedback mechanism to understand the needs of the public should be put in place. Regular national-level customer satisfaction surveys will provide valuable policy and operator feedback across the different modes of public transport. This effort will supplement existing channels of citizen feedback such as the SPAD website and the telephone and SMS hotline. As the online medium becomes more popular amongst users, the website may eventually evolve to become an online real-time portal for citizen engagement. These should contribute to the overall performance indicators for individual operators and the system as a whole.

As in any service sector, the quality of front-line staff plays a critical role in driving the passenger experience. Public feedback has highlighted that front-line staff in public transport fall short of expectations in customer service and local knowledge. Putting the right regulatory and training frameworks in place for service staff, will go a long way in raising the service quality of public transport. An enhanced driver licensing and screening scheme will be rolled out to ensure that experienced and new drivers meet certain requirements and abide by certain rules and regulations as required by their respective licenses. A database will also be set up, capturing the details of each driver and their prior as well as current place of employment. Operators can access this database to check prospective driver applicants, to verify their work experience and to assess whether they are reliable and responsible. The driver enhancement programme strengthens this effort by providing training programmes to ensure drivers are adequately equipped with the right sets of skills to provide good service while carrying out their jobs effectively. It will also put in place a driver incentive and demerit system tied to incentivise responsible behaviour.
The serviceability and safety of public transport vehicles must be maintained at high levels through a comprehensive and robust framework of vehicle standards for both buses and taxis. These standards and specifications should be reviewed on a regular basis to ensure that the standards remain relevant.

### 3.5.3 Policy – Develop a Seamless Experience For The User

Beyond service quality and reliability, it is also important that the commuter is able to conveniently get to the public transport node, e.g. bus stop, and to switch mode of transport easily.

Many commuters will require the use of more than one mode or service on their journey. Too often a transfer between services is most inconvenient, often requiring a lengthy unsheltered walk between stops. To enhance the seamless experience for the user, a set of **interchange and integration hub guidelines** will be developed to aid in the design and development of future interchange hubs. These principles are already being applied to on-going and new initiatives. Wherever possible, existing hubs will be upgraded so that interchanging between modes of transport is less troublesome for the passenger.

The same principles will also be applied when upgrading rail facilities as part of the **station enhancement** programme. This programme will include a comprehensive assessment of current facilities, feeder services and local access. It is envisaged that usage of the rail services and the stations will increase alongside the development of the local areas around the stations.

It is also important to maximize the feeder network into the land public transport systems beyond pedestrian traffic. This is particularly important for rail networks as each train station is meant to serve a larger area than a bus stop would. This feeder network includes other public transport systems, such as buses and taxis, as well as cars. To encourage use of the MRT and LRT systems, for instance, Park-and-Ride facilities (see section 3.3.1) will be provided near a number of stations. This will enhance the convenience of the journey for the existing public transport commuters and will encourage more car-owners to take the train as part of their daily commute.

The fragmented nature of the current public transport system makes it difficult to plan one’s journey effectively. Consolidating and communicating relevant public transport information to the public will be a key priority going forward. This will increase the user-friendliness of the network as a whole and promote usage. To do this, a comprehensive **passenger information system** will be developed and embedded into upgrading efforts such as the **bus stop enhancement** measures.

<table>
<thead>
<tr>
<th>The passenger information system will entail the following key elements to make it easy to use and convenient for the rakyat:</th>
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<tbody>
<tr>
<td>- Consolidated repository of public transport related information including routes and time-tables</td>
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<tr>
<td>- Online portal with a journey planner service to enable passengers to access relevant information in a user-friendly manner</td>
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<tr>
<td>- Real-time information systems to allow users to assess the arrival time of buses. This system will include the introduction of a bus stop index system, and the implementation of relevant vehicle tracking systems</td>
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Separate tickets and fares on different services increase costs and complicate travel for inter-modal transit users. An **integrated smart ticketing system** is envisioned to be used by commuters across different modes of public transport and be accepted by the major public transport operators. The primary objective of such an initiative is to enhance the overall integration of public transport and the seamlessness of the journey experience for the commuter. Malaysia has an example of this kind of system in the KV where the Touch’nGo pre-paid card is accepted on the LRT, KL Monorail, KTM Komuter, Express Rail Link (ERL) and rapidKL. This system could potentially be extended to a wider range of public transport sectors.

### International case study

**Integrated smart card for paying fares in Hong Kong**

Launched in 1997, the Octopus card is a rechargeable stored value card that uses contactless smartcard technology for electronic payments. Octopus Cards Limited is a wholly owned subsidiary of Octopus Holdings Limited and is owned by some of the major public transport operators in Hong Kong.

It was originally launched as a means of paying fares on public transport in Hong Kong, and within the first three months of launch some three million cards were sold. There has since been an expansion in its application and since 2000, non-transport businesses such as fast-food outlets and vending machines began accepting Octopus cards for payment. Octopus cards can now be used for payment in several retail stores as well as for parking and even as an access control device in commercial and residential buildings. Octopus is now also accepted in Shenzhen, the first town in China of Guangzhou Province, outside of the Hong Kong SAR border.

By 2007, more than 14 million Octopus cards were in circulation and Octopus services handled more than ten million transactions each day.

### 3.6 SAFE AND SECURE

Passenger safety is a key priority across all public transport systems. Planners, regulators and operators alike must ensure that safety is looked after for all. There are three distinct elements of safety: (i) safety from accidents; (ii) safety from crime and harassment; and (iii) safety from a terrorist attack.

Embedding safety features and policies into the public transport system has an associated cost to it. It is best done by factoring safety considerations into the upstream design phase of any project, rather than retro-fitting safety features downstream. This applies just as much in procuring transport vehicles such as buses and taxis with in-built safety features, as it does in designing and building interchanges and hubs with open, well-lit and clearly visible public spaces to prevent crime.

#### 3.6.1 Ensure High Standards Of Safety And Security For Operators

All public transport operators must comply with high standards of safety which are embedded within their licensing frameworks. These standards will be coded into the relevant legislation and regulations formally under the **safety and security regulatory enhancement** effort undertaken.
by SPAD. They will apply to vehicles (purchasing new vehicles, as well as in maintenance and upkeep), drivers (ensuring proper screening, training and adequate rest), as well as their facilities (infrastructure which will be meant for public access). In detailing and reviewing these standards, relevant agencies will be consulted for their input, bearing in mind the cost that has to be borne by the operators to provide this higher standard of safety, which may, in turn, raise the price for the commuter.

There is scope for enhancing safety on inter-city express buses by avoiding preventable accidents. Several accidents have been a result of drivers falling asleep on the wheel because they have worked on too many shifts continuously. Strengthening the regulatory and enforcement frameworks of these basic safety standards will be a priority. This will include stepped up enforcement checks and audits, as well as a stricter penalty regime, including revoking an operator’s license should safety be compromised.

3.6.2 Encourage and Support Safety Initiatives
Bottom-up safety initiatives should be encouraged and promoted where useful. For instance, taxi companies should be incentivized to provide additional safety measures for female passengers, especially when travelling at night. This includes the provision of women-driven taxi services and women-only coaches on trains.

Public transport systems must also support national safety and security initiatives, particularly in high-traffic areas such as transport interchanges. This includes security-enhancements through extensive CCTV surveillance network, and providing CCTV feeds to relevant public security agencies to assist in surveillance, monitoring and investigations.

The safety of taking transport extends beyond the land public transport systems to the ‘first and last miles’ of the entire journey. The walk from one’s house to the nearby bus-stop should be well-lit and the pathways should not be secluded. These factors must be considered in planning the locations of the various bus-stops and train stations, and land public transport network planning must be well-coordinated with the relevant local authorities to ensure that access paths are safe.

3.7 ABOUT BETTER QUALITY OF LIFE
Public transport has an important role to play in Malaysia’s aspirations to develop holistically and sustainably. As populations in urban centres get denser, the problems of congestion and pollution will rise. Proper planning of public transport and land-use are essential to mitigate the ill-effects of population growth in urban areas and to make city-life a pleasant, healthy and environmentally sustainable one.

3.7.1 Policy – Promote Healthy Living
One of the indirect benefits of using land public transport systems is that they indirectly promote healthier lifestyles. This is because the ‘first and last miles’ of a public transport user’s journey is typically travelled by foot, rather than in a car or on a motorcycle.

23 The first mile refers to the initial travel to the first public transport node, such as a bus-stop or train station, along the entire journey. The last mile refers to the travel from the final node of public transport along the journey and the final destination that the passenger is travelling to.
The stretch between the public transport station and the users’ origin or destination is also crucial to reducing the barrier of using public transport in the first place. **Pedestrian facilities** improvement to bus stops and railway stations will be encouraged as part of the local authority development plans. Walking structures should be defined around transit stops to increase the convenience of those locations. To enhance the accessibility of KL’s public transport network, a target has been set of having 75 per cent of the population live within 400 meters of a public transport stop.

In addition to ensuring ease of access to the major transport nodes for pedestrians, fitting in cyclist-friendly infrastructure such as **bicycle parking facilities** and bicycle lanes will make it easier and more attractive for people to ride to the stations or interchanges. It will also increase the catchment area of these bus interchanges or rail stations as people living further away would not be put off by having to walk a distance to take public transport.

Transport network planning at suburban and regional levels should also provide for accessibility to parks, beaches, and other recreational facilities which would make it easier for people to get to these areas in order to pursue a healthy recreational activity.

### 3.7.2 Policy – Encourage Environmental Sustainability

In promoting a sustainable environment, land public transport systems must **adopt green technologies and practices**. For instance, land public transport vehicles must comply with the existing emissions standards set by the Department of Environment (DoE) for land public transport vehicles. By regulating and enforcing these emissions standards, operators will be forced to ensure that their vehicles are well-maintained and that they ensure that their fleets are upgraded regularly. These regulations should specify higher standards for new vehicles to ensure that land public transport fleets are upgraded over time to be less polluting and more fuel-efficient.

Any new land public transport development will be required to undergo a thorough environmental impact assessment. This will ensure that environmental damage is minimized and mitigated. Green features will also be adopted in the design of new buildings. For instance the proposed RTS terminal in JB will include environmentally friendly features.

Incentive programmes should also be explored for operators to try out green technologies that are proven to reduce carbon emissions. These incentives could take the form of lower license fees or tax rebates, and will help to offset the costs associated with adopting these new technologies (such as upgrading their maintenance workshops).

### 3.7.3 Policy – Optimize Public Transport Infrastructure

While it is often necessary to plan land public transport systems to support existing developments, this is often sub-optimal in outcome. Infrastructure development costs are often much higher. The period of construction typically causes significant inconvenience and real costs to people and businesses in the area. And even then, having suffered through all the inconveniences, the integration of land public transport systems into an existing development will not be perfect. As a result of making trade-offs in land public transport infrastructure siting and access, the value to the users is almost never maximized.

**Transit-Oriented Development (TOD)** is centred around maximizing the holistic value to the communities living in the area. Just as settlements in years past were built around natural
transportation and communications channels like rivers, modern cities should be planned and built around transport networks, and land public transport hubs in particular.

In greenfield areas, this would result in mixed residential-commercial development planned around an land public transport network. Key land public transport nodes such as train stations or bus terminals will be surrounded by high-density developments that become less dense as they move further away from the core land public transport network. People will therefore be able to gain easy and convenient access via land public transport to places of employment, commerce and recreation (including parks), hereby improving their quality of life significantly.

In existing built-up areas, a coordinated and integrated approach to land public transport planning must take into account the inter-relationships between land-use and transport. In particular, land-use and development policies have an impact on access to land public transport and mode shift. At the same time, investments in new physical land public transport infrastructure have an impact on future land-use and development potential, as demonstrated by the fact that property prices around key land public transport nodes like MRT stations go up in value.

In order to achieve this integrated approach, land public transport planning must coincide with the planning and operations of relevant federal agencies as well as state and local authorities to ensure that all development plans consider wider transport implications. Additionally, at the local development level, land public transport should be a critical factor in the development control process. To ensure that the impact of a new development on mobility is adequately addressed, local authorities, in consultation with SPAD, should make land public transport assessment a mandatory requirement to support a planning application.

For optimal use of the roads and land public transport infrastructure, buses should get right of way on roads, as they transport a larger number of people compared to private vehicles. **Bus priority**

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24 Places where there is little or no built-up development.
measures like the BRT would enable a smoother and quicker journey for commuters, thereby encouraging them to take public transport.

To complement the efforts in building land public transport systems that enhance accessibility, connectivity and speed, travel awareness campaigns will keep the public in the know about the latest land public transport developments. This can take the form of information updates on a common public transport website, existing public transport facilities and infrastructure (at interchanges, bus-stops and stations) as well as through traditional advertising. These campaigns should emphasize the benefits of taking public transport and emphasize how passengers can, on a daily basis, contribute to a more environmentally-sustainable future by taking the bus or train.

3.7.4 Policy - Implement Pro-Active Measures To Increase Land Public Transport Use

Even when public transport infrastructure has been enhanced to the point where it is a truly viable alternative to private transport, densely populated urban centres may continue to suffer chronic traffic congestion and pollution. In such areas, there will be a need to implement travel demand management measures to encourage people to take public transport rather than drive to and from the busy city centre. State and local authorities may take reference from a set of Travel Demand Management (TDM) guidelines which will be put together using international best practices as well as local experiences. Such measures would include road pricing schemes as well as parking control measures which restrict the access of private vehicles into dense developments at certain times of the day.

Travel demand management measures must be designed holistically and factor in the impact on the entire transport network. It should also be tailored to the needs of the locale being served.
International Case study

As part of its efforts to reduce traffic congestion and to promote walking and cycling, Paris took the approach of reducing the availability of cheap parking. Between 2003 and 2007, on-street parking supply was reduced by nine per cent. Over the same period, free parking spaces were reduced dramatically, with 95 per cent of them being turned into paid parking spaces.

The outcome was that Paris was able to decrease vehicle kilometres travelled by 13 per cent, and the share of private vehicles on the road reduced from 68 per cent to 60 per cent.

Figure 3.5: Trend on parking spaces in Paris

Figure 3.6: Vehicles kilometers traveled workdays

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25 Source: Institute for Transportation and Development Policy, New York
VIGNETTE
A healthy and sustainable lifestyle

Siti is a city-girl, born and brought up in KL, but she feels a strong connection with nature. She makes it a point to go on a hike on a nature trail at least once a month. In fact, she makes it a point to look for nature trails that are accessible by public transport; and it’s not difficult these days since the bus networks have been expanded to increase public access to recreational and nature parks.[1]

Siti is known amongst her friends as a bit of an environmentalist. She’s an up-and-coming executive with GreenTech, one of several new environmental multinationals that have set up in Malaysia over the past decade. She naturally doesn’t own a car. And although there is a bus-stop just 5 minutes walking from her home[2] with a direct feeder bus to the MRT station, Siti prefers to cycle 15 minutes to the station every morning, unless it’s raining. It’s a healthier start to the day, she feels. There are bicycle parking facilities[3] at the station, monitored by CCTV cameras, so she’s not afraid that her RM 1,200 road bike might get stolen. She has noticed recently that it’s getting hard to find a parking spot for her bike. Cycling to the station is getting more popular. “Must be because of the new dedicated bicycle paths that have been created connecting the station to the surrounding neighbourhoods,”[4] she tells herseland freight. The MRT operator recently announced that it would be building more racks, enough for another 200 bicycles. Siti is looking forward to that.

The station she’s at is one of the new ones built as part of MRT Phase III, so it’s certified as a green building [5]. Siti feels especially proud because her company had helped to design the ventilation systems for the MRT station so that it was power efficient while keeping the passengers cool and comfortable.

The station is crowded, as it is every day. The local authorities recently enhanced the pedestrian access to the station by building sheltered walkways to all residential developments and bus stops within a 400m radius of the station [6]. There’s also a park-and-ride car [7] park a 5-minute walk away from the station with a sheltered walkway to the station.

As Siti enters the MRT station, she bumps into Iqbal her brother. Iqbal has just got off the feeder bus service from home. Iqbal tells Siti that his bus ride was extra smooth today because the bus he took was spanking new, one of the latest addition to the bus company’s fleet. “More spacious than the usual buses,” he tells her. “And more environmentally friendly too,” Siti adds with a smile, “it complies with the latest Euro 6 standards.”[8]

As brother and sister enter the station, they make a bee-line for the staircase leading up to the train platform. Iqbal knows that his sister well enough to know that she will not be taking the escalators...

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[1] Land public transport networks provide adequate access to recreational facilities and nature parks.

[2] As part of bus network planning, bus stops are planned in residential areas to minimize the total distance one must walk to a bus-stop.
[3] Train stations have bicycle racks to enable cyclists to park their bicycles.

[4] Dedicated bicycle paths / lanes make cycling journey to the station both easier and safer.


[6] Bus-stops are planned and sited nearer to homes to maximize accessibility to pedestrians.

[7] Park-and-ride facilities encourage drivers to drive to a nearby station and take public transport to work.

[8] Land public transport vehicles are designed to be environmentally friendly too.

<table>
<thead>
<tr>
<th>SUMMARY</th>
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<tbody>
<tr>
<td>▪ Land public transport is a critical enabler of Malaysia’s vision to become a high-income nation.</td>
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<tr>
<td>▪ Land public transport in Malaysia must evolve in accordance with the aspirations of the people, so that it becomes the rakyat’s choice for mobility.</td>
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<tr>
<td>▪ To this end, the Land Public Transport Master Plan pursues five strategic objectives. Land public transport must be:</td>
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<tr>
<td>- Physically well-connected</td>
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<tr>
<td>- Affordable and accessible to all</td>
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<tr>
<td>- Convenient and offer high service levels and quality</td>
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<tr>
<td>- Safe and secure</td>
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<tr>
<td>- About better quality of life</td>
</tr>
<tr>
<td>▪ 14 policies support these 5 objectives, and each is supported by a series of action plans that are already underway or in the pipeline</td>
</tr>
<tr>
<td>▪ It is necessary to strike the right balance between the three conflicting objectives of (i) affordability; (ii) service quality; and (iii) operator economics</td>
</tr>
<tr>
<td>▪ Malaysia should learn from past experience as well as from international best practices to formulate and pursue strategies best-suited for the various regions</td>
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</table>
## POLICIES AND ACTION PLANS

### 1.1 Enhance urban physical connectivity
- Stage bus network planning
- Urban rail schemes

### 1.2 Enhance rural and intercity physical connectivity
- Inter-urban bus network planning
- Rail extension to the Eastern Region
- East coast rail infrastructure enhancement
- Electric train services extension
- Double-tracking and electrification

### 2.1 Improve route planning and explore alternative models to ensure accessibility to the under-served
- Para-transit plan

### 2.2 Build sustainable land public transport business models which provide affordable services
- Fares policy and review process
- Delivery model for stage bus
- Delivery model for inter-urban bus
- Delivery model for taxi
- Delivery model for rail
- Social needs and accessibility indicators

### 2.3 Increase accessibility for the mobility impaired
- Guidelines on accessible infrastructure measures

### 3.1 Raise service reliability of public transport
- Operator license
- Enforcement strengthening
- Investment in new land public transport vehicles
- Rail service enhancement
- Rail maintenance

### 3.2 Improve service standards for operators, drivers and vehicles
- Passenger charter
- Customer satisfaction surveys
- Driver enhancement programme
- Vehicle standards

3.3 Develop a seamless experience for the user
- Station enhancement
- Bus stop enhancement measures
- Passenger Information System
- Interchange and integration hubs guidelines
- Integrated smart ticketing

4.1 Maintain high standards of safety and security for operators
- Safety and security regulatory enhancement

4.2 Encourage and support safety initiatives
- Support national safety and security initiatives

5.1 Promote healthy living
- Bicycle parking facilities
- Pedestrian facilities

5.2 Encourage environmental sustainability
- Adopt green technologies and practices

5.3 Optimize public transport infrastructure
- Develop transit-oriented development guidelines
- Guidelines on development planning to consider wider transport implications
- Development control process
- Guidelines on bus priority measures
- Travel awareness campaigns

5.4 Manage travel demand
- Travel demand management guidelines
- Guidelines on parking control measures
Chapter 4
Institutional Framework

4.1 INTRODUCTION
A strategic, long term public transport Master Plan for Malaysia needs to be formulated with a clear appreciation of the policy context.

Malaysia’s demographic and geographic realities mean that there are different land transport requirements within and between localities. The various modes of transport encompassed within land public transport also bring specific sets of challenges along with it. Moreover, the multitude of parties with a stake in public transport requires a high degree of integration across the public, private and community sectors (including relevant ministries, agencies at the federal and state level, local authorities, transport operators and consumers).

Developing and implementing the right institutional framework and delivery principles will help ensure that plans can be implemented successfully at all levels of government to benefit the community as a whole.

4.2 TAKE AN INTEGRATED AND COORDINATED APPROACH TO LAND PUBLIC TRANSPORT PLANNING
Given the implementation challenges, it is important to employ a coordinated and integrated approach to land public transport planning from the outset to ensure that interventions in the different states and sectors are adequately localised for maximum impact. At the same time, land public transport planning also needs to be aligned with the overarching strategic direction set in the National Master Plan.

To ensure the desired level of integration and coordination, there will be national involvement in local level planning through the following measures:

i. National transport model – analytical tools to assess land public transport demand and inform planning consequences

ii. Regional master plan – state-level Master Plans developed by SPAD with facilitation by state governments.

iii. Inter-regional and sector master plans – Master Plans on inter-regional connectivity and industry-specific vehicle modes.

iv. Coordinated planning guidelines – web-based guidance and requirements for state governments when authoring their Master Plans, including a governing framework: hierarchy of planning needs.

4.2.1. National Transport Model
The first step to taking an integrated and coordinated approach to land public transport planning is to ensure that the analytical tools and approaches employed in all transport plans are comprehensive and consistently applied. To that end, a macro-level national land public transport multi-modal model will be developed to guide the assessment of future demand based
on trends in economic and demographic indicators. This model will facilitate the demand assessment process as well as its consequent capacity or mode type requirements, based on existing land public transport infrastructure and provisions. This will provide important data to federal agencies, project developers and local authorities at the planning stage on the kinds of investments needed to develop their land public transport services.

4.2.2 Regional Master Plans (RMPS)

A series of state level regional master plans will be developed in accordance with the PAD Act 2010 (Act 715). There will be one plan per state, as well as a plan for Greater KL/KV. Guided by the National Master Plan, these plans will provide directions on the development of intra-regional mobility. They will also satisfy the unique demands of the rural areas. As such, these plans will provide response to local issues identified through stakeholder engagement as well as from the state structure plans and district local plans. It will also be supported by analysis of local data and needs.

The regional master plans will be:

- Developed by SPAD in partnership with state government. These regional plans can be regarded as sub-plans within an integrated National Master Plan.
- Built on work carried out to date where there are existing plans overlapping in scope with the proposed regional master plans. Consistent with sector and inter-regional plans as set out at the time of planning
- Coordinated with the requirements and proposals of neighbouring regions. In some areas, an effective regional master plan may require joint actions with neighbouring regions. In regions sharing a border with neighbouring countries, land public transport links should also be consistent and coordinated with current and future inter-national links.
- Aligned with the need for complementary plans addressing wider topics yet still related to land public transport. For example, areas with significant water transport will need to consider their preferences considering land public transport plans.
- Integrated with existing and future land uses identified for the regions.

4.2.3 Inter-Regional Master Plan And Sector Plans

The inter-regional master plan aims to identify current and future issues pertaining to inter-regional mobility and thereby assess the rationale for linkages between conurbations. In doing so, it will define the roles of rail and inter-urban express buses and develop recommendations that deliver long-term improvements to improve inter-regional mobility, encompassing network coverage, regulatory regimes, training and enforcement.

These plans will develop a series of recommendations covering all aspects of inter-regional mobility, including reforms of regulation, safety, operations, and regulatory regime.

Sector plans will be developed to set out the vision for land public transport within key industries – outlining the role of modes, the regulatory needs, as well as any operational and infrastructure...
requirements. A number sector plans have been prioritized: **The Excursion and Tourist Bus Sector Plan** will examine the day excursion, tours and private hire markets that have significant overlaps with tourism. **The Limousine, Hire Cars and Tow Trucks Sector Plans** will target the industry needs of those specific sub-categories.

Developing and delivering these plans will require on-going collaboration between key stakeholders, including bus operators, travel agencies and governmental bodies. Like the regional master plans, the inter-regional master plan and sector plans will be consistent with the National Master Plan but vary in terms of content and coverage.

### 4.2.4 Coordinated Planning Guidelines

To ensure consistency with the National Master Plan in the planning process and delivery structure of regional plans, a web-based land public transport **Planning Guidelines** will provide detailed requirements and guidance to state governments when they start developing their regional master plans.

The Planning Guidelines will ensure that the solutions proposed are cost-effective, implementable and meet the issues identified in each region, while remaining consistent with the overarching national strategic direction.

For example, The Greater KL/KV master plan targets a catchment of 80% of the population within 400m of a public transport service, upon identifying the baseline figure of 63% and the operational challenges that need to be overcome to increase accessibility which is extremely important for that region. The development of other regional master plans should also assess the baseline of land public transport services using appropriate analysis tools and develop plans to achieve stated targets accordingly, in line with their region-specific requirements.

#### A. Hierarchy of Planning Needs

An example of a guiding principle to assist state governments in their land public transport planning is the hierarchy of planning needs as set out below.

- **Level 1: Identify and fix issues.** All RMPs should identify and propose initiatives to fix shortcomings of existing land public transport services. This is considered the highest priority of planning and should be identified before considering services expansion or embarking on new land public transport projects. Not addressing this level and solving the root issues will likely translate to continued poor service performance in any new enhancement project.

- **Level 2: Improve.** The second level of planning is focused on the optimisation of the existing network, services and assets. This includes improving driver and vehicle standards; passenger information systems; bus stop and interchange facilities; pedestrian and other access and physical and fares integration.

- **Level 3: Attract.** The third level of planning relates to initiatives to enhance the land public transport service through investments in new physical infrastructure developments and expanding networks and assets.
• **Level 4: Restrict and push.** The fourth level of planning relates to initiatives designed to actively deter usage of private modes of transport through management of parking supply and pricing; the allocation of existing highway capacity to land public transport or pedestrians or road pricing, congestion charging and other pricing instruments.

### 4.3 DELIVERY FRAMEWORK: A FOCUS ON IMPLEMENTATION

Given the complexity of execution, **implementation planning** is of the utmost importance. Key elements of the implementation plan include:

• **Delivery model:** Provide direction in terms of the delivery models to be adopted and key project components.

• **Regulatory framework:** Outline rules or guidelines for both public authorities and public transport operators along the following dimensions:
  - Price levels
  - Asset ownership / Investment levels
  - Rate of return
  - Service standards
  - Market entry / Competition rules
  - Ownership changes

• **Implementation committees:** One committee per state to oversee and drive execution of initiatives and interventions in each Regional Master Plan. Committees should be represented by the implementing agencies in the state, with facilitation and participation by SPAD.

• **Monitoring and reviewing implementation:** Track the progress of transformation based on KPIs that relate to the five strategic objectives.

• **Human capital and training:** Provide capability building for key personnel to respond to evolving planning and implementation challenges to deliver sustainable solutions.

• **Funding and financing:** Outline the various funding and financing sources and models appropriate for different contexts.

#### 4.3.1 Selection of Different Type of Delivery Models

The following delivery models illustrate the means for state, local, or national government authorities to develop and provide land public transport services. Often, the best solution in a given area involves a mixture or hybrid of these models:

• **Regulated public service provision** – land public transport provisions are wholly delivered by the public sector

• **Regulated private land public transport system development and/or service provision** – land public transport provisions and networks are operated by private companies but adhere to public regulations to ensure standards of accessibility, affordability, quality and safety.
- **Unregulated private land public transport system development and/or service provision** – land public transport provisions are operated by private companies for profit and the market inherently facilitates standards of accessibility, affordability, quality and safety without government regulations.

- **PPPs** – the government and profit making companies collaborate to provide land public transport services, sharing responsibilities in terms of design, operations, as well financial risks and return

General principles for selection include:

- The delivery models should be capable of providing high quality, affordable, and sustainable services to customers.

- The delivery models should allocate risk optimally among parties according to whichever entity is ‘best suited to manage, mitigate, or endure’ such risks. Where this is not entirely feasible, public authorities should at least seek to optimise the risks allocated to private sector entities;

- Any delivery model must be affordable and should obtain good value for public money spent;

- Delivery models should use different forms of competitive tension optimally to achieve outcomes that are in the public interest. It may be necessary to manage competition in order to achieve the desired levels of efficiency as well as service quality.

Each model has unique advantages and disadvantages which are not optimal in all circumstances. Therefore providing integrated land public transport services may involve a mixture of delivery models within a given service area.

For example, a delivery model for profitable bus services in a densely populated city may resemble lightly regulated private service provision whereas an adjacent LRT scheme may involve a public private partnership. The express bus market is another example where a mode or network of transport requires active government involvement because it is seen in large part as a public service provision. As it will play a key role in the inter-urban land public transport network as a lower cost option to rail, minimum levels of service provision for some parts of the express bus network may be mandated.

The figure below summarizes different contexts where a given delivery model may be appropriate. Assistance will be provided to state, local, and national authorities in identifying the selection of appropriate delivery models for specific land public transport services.
A. Additional Guidance on PPP Delivery Models

A PPP, particularly for projects requiring heavy upfront investment, such as in rail projects, often entails greater complexity and risk compared to other models. It requires greater sophistication on the part of public authorities who structure, negotiate, procure, regulate, and effectively manage such arrangements. Contingent liabilities from PPP delivery models can also create unforeseen financial risks to a government’s fiscal position. However, the National Master Plan envisages that PPPs can play a role in land public transport service development and delivery when:

- Private partners can manage, mitigate, or endure meaningful and significant risks better than a public sector entity;
- Developing or providing land public transport services is not viable as a regulated private enterprise without on-going public support. There must be a genuine need for partnering with the public sector;
- An effective regulatory framework exists (or can be developed) to manage the relationship between customers, private entities, and public authorities;
- Private sector entities have knowledge, capacity, or efficiencies which the public sector is not able to develop or replicate in a cost effective or timely manner;
- Some suitable public sector counterparty exists and can meet its obligations under a PPP-type structure. This includes both explicit and contingent liabilities;
- Contract terms and the regulatory framework for service provision can effectively and credibly discipline the actions of both private partners and public authorities.

<table>
<thead>
<tr>
<th>Unregulated Private</th>
<th>Regulated Private</th>
<th>Pub-Private Partnership</th>
<th>Regulated Public</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Private sector is robust and viable</td>
<td>▪ Robust private sector and some favorable market mechanisms-BUT</td>
<td>▪ Sharing risk adds value. Public sector has some but NOT all capacity required</td>
<td>▪ Private sector involvement not possible</td>
</tr>
<tr>
<td>▪ Little/no risk of abusing dominant position</td>
<td>▪ Need to safeguard public interest from private sector OR</td>
<td>▪ Equitable, transparent, and predictable regulation possible</td>
<td>▪ Public sector has strong capacity for implementation</td>
</tr>
<tr>
<td>▪ Market functioning aligns with policy objectives OR</td>
<td>▪ Need to guard private sector from taking by public sector</td>
<td>▪ Private sector is robust but service is not viable without public support</td>
<td>▪ Market mechanisms have little/no potential for adding value</td>
</tr>
<tr>
<td>▪ Last resort- no other options available</td>
<td>▪ Where the market provides a sufficient offer (e.g., enough frequencies/destinations)</td>
<td>▪ Particularly in cases where investments/capital projects are required</td>
<td>▪</td>
</tr>
</tbody>
</table>

Figure 4.1: General guidance on when delivery models may be appropriate
However, the National Master Plan does not support using PPPs as mechanisms for:

- Financing the cost of land public transport beyond what is necessary to place private partners at acceptable risk
- Making explicit or contingent public sector liabilities less transparent (i.e. shifting them ‘off balance sheet’)
- Abandoning public sector responsibilities
- Awarding financial returns to private enterprises that do not take meaningful risks.

**International Case Study**

**Risk management – London**

In 2002, two private companies, Metronet BCV and Metronet SSL (Metronet) were appointed by the UK government to conduct London Underground’s infrastructure modernisation, through a PPP regime. The cost of work under Metronet’s contracts was expected to be at least GBP6.9 billion over the first seven and a half land freight years of the 30 year contracts in 2002 prices.

In 2007, Metronet went into administration due to inability to meet their spending obligations. The failure forced the Department for Transport (DfT) to issue a grant of GBP1.7 billion used to buy 95 per cent of Metronet’s outstanding debt obligations from its private sector lenders, rather than repaying this debt over the 30 years of the contract.

A National Audit Office (NAO) report assessing the fallout to the taxpayer found that DfT’s risk exposure was high compared to its leverage and influence over the PPP contract negotiations and performance.

Thus, when Metronet’s poor corporate governance and tied supply chain created financial and delivery problems that ultimately caused the failure, DfT had few formal levers to influence outcomes due to the devolved oversight arrangements. The NAO estimated the overall direct loss to the taxpayer arising from Metronet’s administration was as high as GBP410 million in 2007 prices.

The NAO report highlights the importance of managing risks in PPP contracts, by infusing effective independent scrutiny and ensuring that:

- contracts are structured to enable those managing delivery to access the information they need;
- incentives in the contracts and sub-contracts are aligned between both private and public sector partners
- there is a public sector option to withhold payment unless the private sector partner is able to produce reliable and timely records to back up claims.

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26 NAO; “The Failure of Metronet”, 2009
4.3.2 Regulatory Framework
A successful land public transport service development and delivery requires a robust regime of regulation. This regulatory framework will accordingly apply to all operators (public or private) and to the public authorities that have jurisdiction over land public transport services. There are five key areas of consideration:

<table>
<thead>
<tr>
<th>Area of consideration</th>
<th>Explanation</th>
<th>Means of regulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Price</td>
<td>The price (i.e., fares) that customers pay for public transport services</td>
<td>PM’s office in close coordination with SPAD, state, and local government</td>
</tr>
<tr>
<td>2 Rate of return</td>
<td>Financial return that operators make from running services</td>
<td>Contractual relationship between authorities and operators</td>
</tr>
<tr>
<td>3 Service standards</td>
<td>Basic requirement, e.g., accessibility comfort, safety</td>
<td>Contract standards or SPAD licensing standards for specific modes</td>
</tr>
<tr>
<td>4 Market entry/exit</td>
<td>Number of service providers competing within a market</td>
<td>Quantity of SPAD licenses issued for specific markets</td>
</tr>
<tr>
<td>5 Combinations and ownership changes</td>
<td>Mergers/acquisition among operating companies</td>
<td>SPAD authority to revoke licenses following ownership changes</td>
</tr>
<tr>
<td>6 Asset investment and ownership</td>
<td>Who invests in and owns assets such as rolling stock, stations, maintenance facilities, distribution channels</td>
<td>Government either invests and owns the asset or enters into a contractual arrangement as part of a PPP</td>
</tr>
</tbody>
</table>

Figure 4. 2: National regulatory framework for Land Public Transport

A. The National Regulatory Strengthening Programme (NRSP)
In line with the national regulatory framework, the NRSP will be developed to establish revised procedures for handling operator, vehicle and driver licences as well as route permits for scheduled services. The aim is to transform land public transport services by raising standards and creating a viable industry.

In order to further improve quality across land public transport services, it is important that as and when new requirements or licensing standards are set, these are also enforced. Enforcement activities will be carried out in cooperation with relevant agencies in order to facilitate joint enforcement and economies of scale. Engagement with the industry and public is expected to assist enforcement efforts.

4.3.3 Multi-Agency Steering Committee And State Implementation Committees
The large number of parties involved in the entire land public transport transformation agenda at state and national levels underscores the importance of working together in a productive and efficient manner – from the planning to delivery of specific initiatives. Without cooperation and coordination – including information sharing – initiatives are less likely to yield positive outcomes.
At the national level, a senior multi-agency steering committee will be created, with representation from the highest offices of the key implementing ministries and agencies. As part of overseeing the implementation of the initiatives, this committee will facilitate coordination between the relevant implementing organisations.

At the state level, implementation committees are to be set up in each state to drive initiatives in the regional plan and initiatives that overlap with the state’s land public transport functions.

Focused on execution, these working-level implementation committees with representation from various implementing agencies and authorities will oversee the delivery of transformation – addressing operational or bureaucratic issues that crop up during implementation of specific initiatives. A fulltime secretariat will facilitate the workings of each state implementation committee.

4.3.4 Monitoring And Reviewing Land Public Transport Transformation

While regulation and enforcement on the ground is paramount to the successful delivery, there is a related need to monitor and review the performance of land public transport transformation at a macro-level. Monitoring at a macro level will provide an ongoing indication of the general effectiveness of policies and plans laid out in the National Master Plan and regional master plans.

In order to achieve this, firstly, a monitoring mechanism involving strategic objective indicators will be created. The indicators align with the five strategic objectives of the National Master Plan.

![Comprehensive timeline](image)

Figure 4.3: Timeline for action plans 2012 - 2020
To ensure comprehensive macro-level monitoring, a **Performance Monitoring Hub System** (PMHS) will also be created to ensure that key data is captured to monitor land public transport systems throughout the country, and to identify specific challenges and areas that need enhancement. Additionally, a strong **Research and Development** arm must be developed to ensure that adequate expertise resides within government to be able to analyse relevant data, to understand the land public transport challenges, and to propose suitable solutions for them. The PMHS may also be used to subsequently develop a maturity index. This index will, in turn, establish the overall pace of development towards the vision of the National Master Plan.

### 4.3.5 Human Capital and Training

Land public transport challenges in Malaysia will evolve over time. As Malaysia’s physical, economic and demographic landscape continue to change, the land public transport transformation agenda need to be flexible and adapt to the changing realities.

Hence, in the long run, achieving our land public transport aspirations requires **development of human capital and training** to produce the best planning and delivery structures. Having the right people equipped with the right knowledge and expertise will ensure that Malaysia’s land public transport performance progresses with time. To that end, training programmes will be identified to assist the development of human capital.

### 4.3.6 Develop Financing and Funding Models

The ability to secure financing and funding to deliver initiatives and programmes is vital for the success of any plan. Approaches to funding and financing need to take into account the diversity of the public transport sector. However, while the National Master Plan does not prescribe a single form of funding for all cases, a number of principles apply.

#### A. Funding Approach

Funding inflows for a given land public transport service should balance outflows as illustrated in the figure below.
Policy makers may exercise levers on both sides of the funding balance provided that inflows remain sufficient to sustainably support expenditures.27

At the national level, funding and appraisal mechanisms will be developed to assess the financial viability as well as the impact of proposed land public transport projects measured against a series of indicators related to national strategic objectives. These mechanisms will be developed in collaboration with the Ministry of Finance (MoF).

In terms of fiscal transfers to state governments, national funding is a potential option to assist in the development of land public transport at the local level. A national Public Transport Fund (PTF) is to be set up as mandated by the PAD Act 2010 (Act 715), in part to facilitate state governments in implementing land public transport schemes. Maintained by SPAD and MoF, states will bid for these centralised funds to deliver localised schemes that are in line with national strategic objectives. A project evaluation framework will need to be developed so that disbursements follow stringent criteria that optimises outcome across all the strategic objectives. Ideally, these projects or schemes would have been co-developed with SPAD when writing the regional master plans.

Further national funds may also be allocated for specific transport modes such as a bus support fund, especially to support the provision of social bus services where necessary. An interim stage bus fund of RM400 million currently exists with the express purpose of keeping stage buses on the road as many private operators are suffering losses. A more long-term solution requires funding to be channelled to build capabilities and sustainability in the bus sector, although in the meantime stop-gap measures may be necessary.

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27 Fiscal transfers refer to public funding derived from general public budgets (at any tier of government) allocated to LPT system e.g. general tax receipts. External revenues refer to public funding from ancillary sources e.g. assessment tax revenues from defined land area surrounding LPT terminal.
Other funding policies for specific outflows or inflows will be subject to the discretion of national, state, or local policy makers. However, the following principles will be strongly encouraged:

- **Optimise expenditures through competitive tendering and benchmarking.** Competitive tendering enables the industry to enjoy market efficiencies, thereby minimizing the needs for public expenditure. Coupled with performance benchmarking, public authorities, operators, and regulators may seek to optimise capital and operating expenditures so that the money spent achieves the best value possible.

- **Manage funding inflows so that they are consistent and sustainable.** External revenues devoted to land public transport should be reliable, predictable, and sustainable such that funding volatility does not compromise land public transport investments or service delivery. Planners should seek to maximise system revenues in order to approach full cost recovery provided that:
  1. services remain affordable to lower income passengers (e.g., via tiered fare structures); and
  2. public transport services provide adequate connectivity and integration based on the requirements of the area served
  3. service quality is maintained at acceptable standards, befitting of the infrastructure development in land public transport

- **Secure necessary financing without risking operational sustainability.** Financing may be necessary to increase investment, satisfy provisions for future expenses or to share risks and align interests between parties. The state and local authorities hold much discretion here and should choose the most optimal financing structure as long as it does not risk the sustainability of services provision.

Assistance will be provided to the states and other authorities to develop sound funding and financing plans that reflect National Master Plan policy objectives.

**B. Optimise Expenditures Through Competitive Tendering And Benchmarking**

Market efficiencies are often a good way to ensure optimal outcomes from public expenditures. It is therefore important to put in place appropriate regulatory frameworks that will set up incentives for efficiency. This is enabled through the right competitive tendering model with multiple viable players competing for a license to operate in the said area.

National benchmarking initiatives will be identified to help guide the design of the appropriate regulatory frameworks, and optimise how land public transport service providers/developers use funding. License terms will require that land public transport operators (or groups of operators) report against standard, national benchmarking indicators in areas such as operational performance, financial health, and customer satisfaction. Wherever possible, operators will be encouraged to participate in international benchmarking consortiums to compare their performance against global industry leaders.
National benchmarking initiatives will generally enable the Government to make better informed decisions on putting in place the right regulatory frameworks by providing a means to:

- Track indicators to assess industry leading operators and identify areas where specific land public transport operators lag behind domestic or international peers
- Study successful cases of viable industry models with adequate service provisioning to understand best practices
- Encourage (or explicitly require) operators to adjust or target expenditures according to the approach or processes that can advance performance towards industry leading levels

Optimising public expenditures will not always mean spending less on land public transport service development or delivery. Rather, the objective is to ensure public monies are spent in a manner that maximizes benefit to the commuter.

C. Manage Funding Inflows So That They Are Consistent And Sustainable

Specific measures to encourage for managing funding inflows such that they are predictable and adequate include:

- **Earmarking and allocating specific external revenue streams for use in land public transport** – Funding plans that envisage using external revenues to support land public transport service development/provision may benefit from explicit funding commitments. For example, policy makers may devote specific assessment tax revenues from a defined area towards land public transport service provision. This should include revenues collected from private transport users, through taxes, fees, congestion charges, etc.

- **Making external transfers transparent and known to the general public** – different tiers of government may fund land public transport services using subsidies derived from external revenue sources (e.g. general tax revenues). Adhering to National Master Plan principles will require that such subsidies be fiscally sustainable. In addition, the National Master Plan will require that such subsidies flow according to a transparent structure that includes clear reporting to the general public. Wherever possible, the fare impact of subsidies should also be apparent to land public transport service customers

- **Integrating land public transport funding with demand management measures** - road user charging and parking fees can both help to encourage modal shift and generate funds for land public transport. These shall only be adopted once viable land public transport alternatives are available. Wherever possible, demand management revenues such as congestion charges should have explicit ties to land public transport service development or provision.

- **Maximising system revenues within defined affordability limits** – land public transport system revenues will generally include 1) fares, and 2) ancillary revenues from sources such as property and advertising. Tiered and dynamic fare structures will enable maximization of system revenues within defined affordability limits. Beyond fare structures, a policy framework will be provided to unlock the potential of ancillary revenues.
D. Financing Land Public Transport

The National Master Plan will not prescribe detailed policies on how to finance land public transport and state/local governments will have significant discretion in this area provided that:

- State and local governments optimise the bankability of proposed investments before securing financing;
- The funding plan for a given land public transport service accounts for any financing expenses such as interest on debt or returns to equity investors. As described above, this funding plan must be credible and sustainable;
- State and local governments avoid developing projects around overly complex financing structures which may jeopardise service sustainability or involve latent liabilities for government.

SUMMARY

- Land public transport transformation requires tailored solutions to account for the diverse demographic and geographic contexts across Malaysia
- Localised and sector-specific solutions will be outlined in regional master plans, the inter-regional master plan and sector plans
- To have localised solutions anchored on national-level strategic objectives, it is important to take a coordinated and integrated approach to all land public transport planning
- To that end, there will be facilitation and involvement from SPAD in state land public transport planning
- Land public transport transformation and planning must be focused on implementation, and thus incorporate the following elements:
  - Delivery models
  - Regulatory framework
  - Monitoring and review
  - Human capital and training
  - Funding and financing
POLICIES AND ACTION PLANS

Take a coordinated and integrated approach to land public transport planning

- National Master Plan
- Regional Master Plans
- Inter-regional Master Plan
- Excursion and tourist bus sector plans
- Limousines, Hire cars, Tow trucks sector plans
- National land public transport multi-modal model
- Planning guidelines
- Performance monitoring hub system
- Investment in developing R&D capabilities
- Route permits regulation and enforcement (management)
- Multi-agency steering committee
- Development of human capital and training

Develop financing and funding models

- Funding and appraisal mechanism
- Public transport fund
- Bus support fund
Figure 4.5: Overview of land public transport policies and plans
Chapter 5
Regional Perspectives

5.1 INTRODUCTION
Land public transport solutions vary for different areas of the country. This chapter will discuss how integrated land public transport networks between different regions can be handled most efficiently.

5.2. Hierarchy of Settlement
This Master Plan is guided by the spatial plan system of the NPP2, which reflects national spatial goals and strategies. In proposing land public transport outcomes, we refer to the hierarchy of settlement areas or conurbations stated in NPP2. The spatial plans in East Malaysia will also need to be integrated with land public transport initiatives proposed for Sabah and Sarawak. While these two states are governed by planning legislations outside the NPP2, for the purposes of land public transport solutions, the profiles of Kuching and Kota Kinabalu will be mapped onto the hierarchy of settlements to indicate land public transport requirements in those conurbations. While the indicative solutions are here limited to Kuching and Kota Kinabalu, in time a more comprehensive and integrated solution will need to be developed for Sabah and Sarawak.

- National Growth Conurbation
  This conurbation encompasses KL, Putrajaya, Shah Alam, Klang, Nilai and Seremban.

- Regional Growth Conurbations
  Georgetown, Johor Bahru, Kuantan (with similar profile for Kuching and Kota Kinabalu)

- Sub-Regional Growth Conurbations
  Ipoh and Melaka.

- State Growth Conurbations
  The remaining state capitals: Kota Bharu, Alor Setar, Kuala Terengganu and Kangar

- District Growth Conurbations
  Manufacturing and service centres such as the Muar-Batu Pahat-Kluang conurbation and emerging centres of the Temerloh conurbation and the Lumut-Setiawan-Manjung conurbation

- Major and Minor Settlement Areas
  Towns with a population between 10,000 and 100,000 (or small and intermediate towns).

- Rural Growth Centres
  Settlements with a population of less than 10,000 people
5.3 INTRA-REGIONAL MOBILITY

The different population and demographic features of these conurbations and centres in the hierarchy of settlement entails tailored land public transport solutions. In the first instance, solutions refer to the modes of transport appropriate to different areas of the country. As a general rule, population density dictates viable land public transport modes given the economic realities. Conurbations with high density and demand profiles will require high-capacity modes of transport (and vice-versa).

The figure below shows how concentrated land public transport demand, measured in passengers per hour, per direction (PPHPD), and transport corridor length will guide an appropriate approach.

Source: NPP2
5.3.1 National Growth Conurbation
The national conurbation is the KL conurbation or KL/KV which encompasses KL, Putrajaya, Shah Alam, Klang, Nilai and Seremban. Over 37 per cent of the nation’s GDP is related to this conurbation, and it captures approximately 20 per cent of Malaysia’s population. For this conurbation, we have a long term land public transport mode share aspiration of 50 per cent.

A. Background
The 2010 census identified a regional population of 6.3 million in the KL/KV area. Recent trends have highlighted an increasing concentration of employment in the major urban centres in that region. Forecasts assume a population of 10 million by 2020 with the largest growth forecast in Klang, Sepang and Putrajaya. Simultaneously, a rapid growth in car ownership in recent decades within the national conurbation has contributed significantly to increased congestion. Coupled with population growth trends, a continuation of car ownership growth will have serious implications on traffic, congestion levels and quality of life. The challenge is to provide an enhanced public transport system, which can encourage modal transfer (the shift from private to public transport) and reduce overcrowding through higher capacity, particularly at peak periods.

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29 National Statistics 2009, ETP
B. Solution
To meet the stated challenge, enhancements will align with the changing roles of land public transport modes in the national conurbation:

i. Rail will be the future spine of the network; it will act as the primary mode in terms of capacity and accessibility.

ii. Bus will support the rail system by providing feeder services and by meeting land public transport demands in routes not served by rail. In doing so, it will enhance service provisions to district centres.

iii. Taxi will continue to fill land public transport gaps and provide a quality option for door to door travel, albeit at a higher cost.

iv. Walking and cycling to and from transport nodes will be developed as a sustainable and attractive feeder option.

The enhancement actions coupled with the interaction between the transport modes will drive the approach to deliver a world class and integrated land public transport network solution for the country’s economic centre – the national conurbation.

C. Land Public Transport Strategy for The National Conurbation
To deliver the desired solutions in this key conurbation, SPAD has developed a KL/KV master plan. It comprises of six subsidiary plans that outline specific actions:

- **Subsidiary Plan 1: Urban Rail Development Plan (URDP)**
  The URDP assumes that the currently funded rail projects will not be sufficient to meet future demand. While the introduction of the MRT1 and the LRT extensions will improve conditions on key routes, further measures are required to alleviate congestion and provide greater comfort and reliability. The URDP has identified broad routes where new and enhanced lines are needed to provide capacity.

- **Subsidiary Plan 2: Bus Transformation Plan (BTP)**
  The BTP states that there is a need to move to a revised delivery structure both on the road and in terms of regulation and procurement. Better coordination of delivery is also required to achieve high levels of consistency and integration

  Core initiatives include:
  - Bus Rapid Transit (BRT) corridors
  - Network planning
  - Enforcement of bus priorities
  - Improvement of driver and vehicle standards
  - Improvement of bus stop infrastructure
  - Improvement of information systems
  - Revision of the regulatory framework
- **Subsidiary Plan 3: Taxi Transformation Plan (TTP)**
  A market-led approach will be adopted to transform the taxi industry by enhancing quality standards and tightening licensing requirements. Incidentally, this emphasis on quality over numerical regulation is the World Bank’s favoured approach.

  Core initiatives include:
  - Revision of the regulatory framework
  - Raising of driver standards
  - Raising of vehicle standards
  - Improvement of booking systems
  - Branding
  - Infrastructure
  - Enforcement of regulations

  A new process of licensing will be developed which will facilitate enhanced quality in licensing. The move to operator-based licensing will improve accountability and assist the authority in the monitoring of drivers and vehicles as well.

Further subsidiary plans aim to reduce the barriers to modal shift and encourage further land public transport usage through collaborative planning and guidance.

- **Subsidiary Plan 4: Integration and Interchange Plan (IIP)**
  The IIP considers the “first and last mile” requirements across land public transport modes to maximise potential land public transport usage.

- **Subsidiary Plan 5: Land Use Plan (LUP)**
  The LUP has identified mechanisms to influence land use and development policies and processes in the KL/KV region to favour land public transport provision and performance. It outlines available policy levers that allow land public transport to drive land development, such as prioritising high-density developments at land public transport-accessible locations. Rather than reacting to pre-established constraints, land public transport can thus play a direct role in land use.

- **Subsidiary Plan 6: Travel Demand Management Plan (TDMP)**
  There is also a need for demand-led shifts to increase the usage of land public transport in tandem with supply-based measures. A range of measures has been reviewed to assess those with potential in KL/KV. However these will be sequenced only after sufficient land public transport alternatives are in place.

#### 5.3.2 Regional Growth Conurbations, Kuching And Kota Kinabalu

An overarching rationale for focusing on regional growth conurbations is to create a more balanced social, economic and physical development across Malaysia. These regional conurbations – Georgetown, JB and Kuantan – will catalyse development within the respective economic regions. While Kuching and Kota Kinabalu are not covered by the NPP2, as
conurbations they play similar roles with respect to the Sarawak Corridor of Renewable Energy (SCORE) and Sabah Development Corridor (SDC).

The current state of land public transport within these regional areas is similar to that of the national conurbation: traffic congestion, inefficient land public transport operations and a declining modal share.
A. Background
Of the four cities identified in NPP2 as regional growth conurbations, Kuching and Kota Kinabalu are expected to drive development in surrounding regions more than the peninsular regional conurbations. This points to a relatively high population density as economic activity becomes increasingly concentrated in these capitals.

**Factoid: Annual average growth (AAGR) for Iskandar Malaysia over 2000-2025 is forecasted at 4.1 per cent compared to 2.4 per cent for the State of Johor**

Growing population and economic activity are driving the need for improved land public transport services, especially due to rapidly increasing congestion problems. For example, the Kuantan District Local Plan Study (2004-2015) indicated increased traffic volume partly due to the opening of East-West (Kuala Lumpur-Kuantan) highway, which is contributing to congestion in Kuantan city. In Iskandar Malaysia, all major road corridors are projected to be 1.5 times over capacity by 2030.\(^{30}\)

Whilst there is clearly a need for improved land public transport services, the population features in these conurbations – which are high and growing but not as dense as in the national growth conurbation – have implications for the kinds of transport modes that are relevant. Here, focus should be given towards improving capacity and quality of existing bus service, which entails initiatives like BRT or industry interventions like consolidating bus operators. These measures can be supplemented by introducing forms of rail transport if there is adequate demand, but the default position should not be to jump into large infrastructure projects without rigorous feasibility assessments.

\(^{30}\) Source: Transportation: Blueprint 2010-2030 for Iskandar Malaysia, 2011
Guided by this governing philosophy of favouring optimising and enhancing existing land public transport modes, the the Kuching and Kota Kinabalu conurbations should:

i. Improve public transport facilities and connectivity with attraction areas in the respective regions (especially for Georgetown and JB, Kuching and Kota Kinabalu). This is in line with establishing the conurbations as both tourism hubs and gateways to the respective regions.

ii. Integrate transit system with other modes of transport through the establishment of transportation hubs

iii. Ensure sufficient coverage of unpopular routes (instead of focusing on the main roads alone), supplementing bus services with taxi or para-transit services where necessary.

iv. Develop an efficient land public transport system with an emphasis on transit-oriented development (TOD) for better inclusion of land public transport services into spatial development (which is expected to intensify).

v. Ensure consistency and synergy with land public transport-related initiatives in the existing corridor plans: Northern Corridor Economic Region (NCER), Eastern Corridor Economic Region (ECER), Iskandar Malaysia, Sabah Development Corridor (SDC) and Sarawak Corridor of Renewable Energy (SCORE).

Some of the considered land public transport-related initiatives in the corridor plans are:

i. NCER: Construction of the Penang Sentral Integrated Public Transport Terminal as the NCER interchange for all modes of public transport.

ii. ECER: Rail connecting Mentakab, Kuantan, Kuala Terengganu;, Tanah Merah/Pasir Mas and Tanah Merah/Pasir Mas, Butterworth and KL, Mentakab

iii. Iskandar Malaysia : BRT system consisting of 10 lines and nearly 250 stations and stops, covering 90 per cent of transportation needs for the region.

iv. SCORE: Increase access to paved roads, allowing more extensive land public transport options

v. SDC: Enhance intra-city road transportation by consolidating the various providers of public bus transportation

5.3.3 Sub-regional Growth Conurbations
Ipoh and Melaka have been identified as sub-regional growth conurbations to support the regional growth conurbations. Moreover, in the post-2020 period Melaka could potentially represent a southern growth (connected) conurbation to the KL conurbation.
Key Focus Areas

i. Integrate transit system with other modes of transport through the establishment of transportation hubs

ii. Improve efficiency and quality of existing land public transport modes (e.g. increase bus by-lays in Melaka) and on-going infrastructure development (e.g. double tracking in Ipoh).

iii. Ensure coverage of unpopular routes (instead of focusing on the main roads alone), supplementing bus services with taxi or para-transit services where needed.

iv. Develop an efficient land public transport system with an emphasis on transit-oriented development (TOD) for better inclusion of land public transport services into spatial development.

5.3.4 State Growth Conurbations
The cities of Kota Bharu, Alor Setar, Kuala Terengganu and Kangar and their surrounding regions are the next areas of central importance. Each city functions as the main administrative, commercial, financial, social and cultural centre for the whole state.
Across these four conurbations, there is a lot of room for improvement in basic land public transport services and infrastructure. The relatively lower capacity demand tempers the need for high-capacity land public transport modes. However, poor service, accessibility and integration remain key themes that inform a set of key focus areas for action.
Key Focus Areas

i. Develop integrated land public transport hubs in each conurbation with feeder services into the city centre.

ii. Improve existing bus services to ensure reliability, quality and safety.

iii. Enhance the passenger’s “last mile” by improving bicycle or motorcycle parking facilities and improving security of private vehicle

iv. Supplement bus service with taxi or para-transit services where needed to serve under-populated areas

5.3.5 District Growth Conurbations, Small and Intermediate Towns

District conurbations are distinctly lower density conurbations with manufacturing and service centres making them land public transport focus areas in their own right. Beyond services to and from these centres, the conurbations also service local rural areas.

The Muar - Batu Pahat - Klang conurbation caters to the established towns in Johor. The Temerloh conurbation and the Lumut–Setiawan-Manjung conurbation reflect the respective towns’ emerging economic importance.

Towns with a population between 10,000 and 100,000 are classified as major and minor settlement centres (or small and intermediate towns). A number of these towns are located within the expansion sphere of larger conurbations, and will likely experience rapid population growth. Examples include Nilai, Rawang, Balakong, Senai and Ulu Tiram where transport plays a key role in providing linkages for these ‘satellite towns’.

What these growth centres have in common is that they are all sparsely populated. This translates to a focus on improving bus services to enhance connectivity and linkages, especially between adjacent towns. Naturally, the aforementioned population spread also underscores the focus to provide in land public transport to under-served and under-populated areas.

5.3.6 Rural Growth Centres

Rural growth centres are settlements with a population of less than 10,000 people. They are key central villages linked to a rural hinterland made up of several rural settlements. These rural growth centres have the basic social facilities and local services to serve the surrounding settlements.

Within the rural areas, population is especially sparsely distributed and the remote villages are not easily accessible. As the local economy depends heavily on trade in agricultural produce, establishing strong urban-rural linkages is crucial for the sustainable development of these rural growth centres – many of which have not yet been identified.

Key focus areas

i. Map the rural growth centres comprehensively to help with future planning and resource allocation.
ii. Expand access to bus services for already identified rural growth centres – as a form of social service due to population sparseness and low income levels. There must be connectivity to nearby urban towns which in turn provide connectivity to major cities nearby. Thereby, people living in the rural areas should be able to use land public transport inter-connections to travel across all of Malaysia.

iii. Enhance and leverage existing para-transit services by first regularising such services and supporting them through financial and non-financial assistance (e.g. driver training)

iv. The delivery model for land public transport service provision in less densely populated rural areas is likely to be one which is proportionally more subsidized than services in densely populated cities. Finding the right operating model is critical to ensure that there is adequate coverage without putting too much of a burden on public monies.

5.3.7 Sustainability
All the measures across the different conurbations and modes must be economically viable to ensure long term sustainability of services. A thorough industry review will be conducted to ascertain interventions and reforms necessary to allow for sustainable returns to operators while also delivering improved services to the public and minimizing the burden on the tax payer. Solutions must be found which are tailored to the specific needs of the area being served.

5.4 INTER-REGIONAL MOBILITY
The day-to-day experience of land public transport will most likely centre on mobility within specific geographies – each with its unique set of circumstances. However, a comprehensive land public transport transformation must include solutions that improve mobility between conurbations as well. Inter-regional mobility is needed to combat congestion on main expressways caused by private vehicles, as well as combat the attendant adverse environmental impact of these congestions.

The key inter-urban linkages identified in NPP2 are shown in the Hierarchy of Settlement Areas. For such linkages in East Malaysia, federal authorities can work with state governments in an advisory capacity to help collect data before identifying the appropriate linkages.

5.4.1 Solution
Delivering improved inter-conurbation mobility requires the improvement of services for existing public transport users as well as providing a compelling alternative to former private vehicle users. On a practical level, these improvements will require the development of an efficient and integrated inter-urban public transport system featuring rail and express bus services linking cities and towns.

A. Rail lines
NPP2 envisages the rail system as a bulk mover, both for people and for goods, servicing all existing conurbations and state capitals. Rail would also connect all the major gateways and ports (seaports, inland ports and airports) in the country.
For inter-regional mobility, the role of rail should focus on the links between the major urban areas with relatively high demand. This will impact the design and delivery of rail lines in these centres so that not just state capitals and major conurbations are connected by a rail network, but that the rail stations also act as nodal points for the community and transportation activities.

Besides the rigorous feasibility assessments and policy discussions that will need to occur, possible enhancement links to the existing rail network may include:

i. KL to JB via Seremban (with link to Melaka) to facilitate links to the South.

ii. KL to Georgetown via Ipoh with links to Alor Setar and Kangar to facilitate links to the North.

iii. A new East-West rail linking KL to Kuantan, with potential extensions further up the Eastern coast to Terengganu and Kota Bharu

Service networks within the KV should also be upgraded to facilitate connectivity between KL with Shah Alam, Seremban and Putrajaya, as examined in the KL/KV master plan.

B. Express Bus Services

Express buses also play a role as long distance transport providers where these are not practical for other land public transport modes, or while they are being developed. While the rail network is being enhanced the express bus network will provide the core network for most of Malaysia in the short and medium term. Express bus services are also offer a low-cost, high-quality, and high-capacity alternative to tackling the congestion problems on key highways such as the North-South Expressway.

Delivery of an improved express bus service network is helped by policies outlined in the NPP2. Currently, the Malaysian expressway system provides the base that caters for effective physical linkages between the various states. The NPP2 has proposed at least three cross-country highways to bridge the West-Coast and East-Coast expressway systems. NPP2 also includes an extensive network of lower hierarchy roads such as the federal and state roads which will be upgraded to complement the national expressway system.

The present network of roads is proposed to be strengthened even further, leading to the formation of a ladder pattern configuration (see NPP2 policy IP 24). This network serves as the basis for developing an inter-city express bus network reflecting demands. As the long distance express bus sector is experiencing growth in many countries worldwide, emerging best practice can be observed and referenced to ensure effective design and delivery.

Beyond the network, enhancements to the express bus services themselves will focus on regulatory mechanisms to improve safety, reliability, accessibility, and service levels. As it stands, the market-driven industry has capacity for increased regulation and enforcement, especially with regards to safety standards which is a concern among land public transport passengers. These regulatory and enforcement measures will relate broadly to drivers, vehicles, prices and the routes operated. Specifically, they will include, among others, more stringent and
rigorous driver training, vehicle standards and inspections, as well as cross-subsidisation measures to ensure adequate service coverage across the network.

The operating model for express bus services will also test the industry’s viability. The question of sustainability will be a major consideration when designing the improved regulatory and enforcement measures.

**SUMMARY**

- A comprehensive land public transport solution must look at both intra-regional and inter-regional mobility
- In outlining the solution space, this document is guided by the spatial plan system of the NPP2, which reflects the country’s spatial goals and strategies.
- The NPP2 provides indication of mobility needs across regions through the hierarchy of settlements.
- For intra-regional mobility, each conurbation in the hierarchy of settlements will have different needs and thus different kinds of solutions. Highlights include:
  - National growth conurbation
    - Six subsidiary plans under the KL/KV plan that cut across different modes (rail, bus, taxi), enhance integration with spatial development and incorporates TDM.
  - Regional growth conurbations, Kuching and Kota Kinabalu
    - Focus on optimising existing modes and develop new modes where appropriate to help catalyse development within the respective economic regions
  - Sub-regional growth conurbations
    - Optimise existing land public transport modes and on-going infrastructure development to improve efficiency and quality
  - State growth conurbation
    - Improve existing bus services, enhance feeder network and employ creative means such as para-transit services to improve accessibility
  - District growth conurbations, major and minor settlement areas
    - Improve existing bus services to enhance connectivity and linkages between adjacent towns.
  - Rural growth centres
    - Improve connectivity between rural settlements and rural growth centres
- For inter-regional mobility, rail will play a crucial role linking the major urban areas with relatively high demand. Express bus services will provide more coverage and at lower cost.
Vignette

Public Transport of Tomorrow\textsuperscript{31}

Ahmad\textsuperscript{32} has an important job interview tomorrow at 9.30am with a Malaysia Tech, a global multinational tech company headquartered in KL. He is very excited about the interview and wants to make sure he shows up on time and well-dressed to make a good impression on the interview panel.

He wonders how long it would take for him to go from his home in Sungei Buloh to the Malaysia Tech HQ, located in the new Jamek Towers, some 20km from his home. He takes out his smartphone and opens up the JourneyPlanner app\textsuperscript{(1)}. The app informs him that with the morning peak hour traffic, it would take him about 45 minutes by public transport (bus followed by an MRT and then an LRT ride), and 75 minutes by car. “Take public transport of course!” he thinks to himself and freight.

The next day, Ahmad wakes up a little later than he would like to. He rushes to get dressed and at 8.30am, he uses his smartphone app to check when the next bus to the Sungei Buloh MRT station is\textsuperscript{(2)}. Bus service number 246 will arrive in 7 minutes time at the bus-stop just 200 metres from his home\textsuperscript{(3)}. He’s out of the door by 8.33am after gulping down his coffee and saying his byes to his mom and dad. “Good luck!” they shout to him as he takes a brisk walk along the pedestrian path to the bus stop. “He looks smart in his suit” his mom says to his dad.

At 8.37am sharp Ahmad is at the bus-stop. A minute later, bus service 246 arrives and he hops onto the bus. The bus is a new bus, not much more than a few months old, Ahmad thinks to himself and freight. That means that it’s one of the new environmentally friendly electric buses\textsuperscript{(4)}. Ahmad’s been on one of these before and he knows that it’s going to be a very smooth ride. There is not enough seats to sit, but ample standing room without having to squeeze. Ahmad is standing next to a man in his wheelchair\textsuperscript{(5)}, who’s apparently accompanied by his wife. “Going for a job interview?” the man asks him, observing his dressing and the file that he’s carrying. “Yes” replies Ahmad, smiling. “Good luck!”

The bus drops Ahmad off just outside the MRT station\textsuperscript{(6)} at 8.46am. The signage at the bus stop indicates that the next train will depart in 1 minute but then the following one will depart only 2 minutes later\textsuperscript{(7)}. Ahmad doesn’t want to run, so he’s contented to take the 8.49am train. He takes out his integrated transit card\textsuperscript{(8)}, which he just used in the bus as well, to get past the ticket gate to let him into the rail station.

The train pulls into the station. Ahmad looks at his watch. 8.49am\textsuperscript{(9)}. It’s going to be tight, he tells himself and freight, as he knows he has to change trains at the Central Market interchange. Ahmad knows from his smartphone journey planner that the total ride duration is approximately 25 minutes, but he is anxious still.

\textsuperscript{31} This fictional narrative is meant to serve as an illustration of how public transport may evolve in the next ten to twenty years. Some initiatives are already underway to deliver some of these outcomes, whereas others are more aspirational, and may not be feasible.

\textsuperscript{32} Fictional character.
On the MRT, Ahmad starts thinking about the job interview again. “Be confident. That’s the most important thing,” his dad had advised him the night before.

The train arrives at Central Market station at 9.14am. Ahmad is grateful that he doesn’t have to get out of the station to change to the LRT. (10) He proceeds straight to the LRT platform, and a train pulls in one minute later. The ride is a short one – Masjid Jamek station is just the next stop.

Ahmad taps his integrated transit card at the ticket gate as he leaves the station. The exit signage indicates that one of the exits of the station takes him very close to the building he must go to, (11) and he heads toward that exit. As he leaves the station, he glances at his watch. It’s 9.19am. Ahmad smiles with relief. He knows he’s going to make it to the interview on time. Just a short walk along the covered walkway and he’s going to be at the Jamek Tower already.
Chapter 6
Land Freight

6.1 ROLE OF LAND FREIGHT
Logistics is the backbone of trade and is therefore a crucial driver of economic performance. Businesses rely heavily on efficient supply chains to integrate their production processes and deliver finished products to market in a timely and cost-effective manner.

A well-developed and efficient transport industry is, in turn, a key determinant of the strength of any nation’s supply chain and logistics sector. Both are important considerations for business from an investment perspective. Malaysia’s longer term economic growth potential will be significantly enhanced by the creation of world class transport infrastructure to underpin economic activity across the board.

The costs of logistics may vary significantly, including across direct costs – such as warehousing and transport – and also indirect costs – inventory costs, and the losses from obsolescence, lost sales and penalties arising from not delivering goods on time. A business with a fast and responsive high-tech supply chain enjoys a strategic advantage over its competition. For some businesses the indirect costs could potentially be greater than the direct costs. This is, for example, true for businesses selling high-tech consumer goods and mobile phones, as well as perishables and sometimes even apparel, where it is critical to minimize the time between the design phase and the product hitting the retail floor.

Figure 6.1: Costs associated with freight and logistics

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33 Source: Third Industrial Master Plan
The World Bank’s *Connecting to Compete 2012* survey placed Malaysia 29th out of 155 countries on its Logistics Performance Index. While the survey classified Malaysia as an “over-performer” and placed it in the top 10 middle-income countries, Malaysia must continue to increase its overall logistics performance as it moves closer to its ambitions of becoming a high-income nation in the coming decade. Land freight will be a critical enabler of national economic growth and competitiveness.

Another critical point in the supply chain that affects Malaysia’s overall logistics performance is the speed of clearance at the national borders, i.e. at the ports of entry and exit from Malaysia. This has been an area of strength for Malaysia, and should also be reviewed together with land freight in the context of enhancing the logistics industry holistically.

### 6.2 LAND FREIGHT IN MALAYSIA

#### 6.2.1 Evolution over the Years
Malaysia has reaped the benefits of globalization, and has enjoyed a trade growth of 5 per cent over the past several years, reaching RM1.18 trillion in 2008. This has fuelled the growth of the logistics sector, which has evolved in tandem with the global logistics industry to see the emergence of third-party logistics (3PL) in the 1980s, and more recently fourth-party logistics (4PL) players.

**Evolution of logistics industry in Malaysia**

![Evolution of logistics industry in Malaysia](image)

Figure 6.2: Evolution of logistics industry in Malaysia

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34 Malaysia was ranked 29th for the *Customs* dimension of the World Bank’s *Connecting to Compete 2012* survey.
35 Provide intermediary broker role between shipper and carrier
36 Provide end-to-end consultancy services specializing in logistics, transportation and supply chain management.
37 Source: Third Industrial Master Plan
This has contributed to the explosion of the land freight sector over the past decade, which grew by 9.9 per cent from 2004, and hitting 382,701 tonne-kilometre in 2011, and from principal statistics of road haulage services about RM10, 197.59 million value of gross output contributing to the economy in 2008. The growth in demand for services has led to a proliferation of goods vehicles in particular, which comprised 4.1 per cent of the total motor vehicle population.

The importance of freight was officially recognized for the first time under the Third Industrial Master Plan which was launched in 2006, with a focus on transport as one of the six strategic thrusts.

“Developing the industry in particular transport modes to operate in a competitive international environment” – one of the six strategic thrusts under the Third Industrial Master Plan, 2006-2020

![Diagram of freight logistics]

Figure 6.3: Strategic focus of the Third Industrial Master Plan

6.2.2 Challenges Facing the Land Freight Sector

The fragmented nature of the land freight sector has led to inefficient use of freight resources and infrastructure. Goods vehicles, in particular, do not often travel at optimal load levels, resulting in inefficiencies across the supply chain. This contributes not only to additional costs for operators, which often gets passed on to the service buyer, but also adds to the congestion and pollution on the roads.

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38 Source: Year Book of Statistics Malaysia 2010, Department of Statistics Malaysia
The inefficiency in the land freight system is also a result of inadequate use of rail services which are in theory more cost-effective, quicker and better for the environment over long-distances. Bottlenecks on the railway networks cause most inefficiencies for cargo rail. For instance, the cargo railway lines connecting Pasir Gudang and the Port of Tanjung Pelepas (PTP) intersects with the passenger railway line from Gemas (North), down South. Since passenger trains have priority over cargo trains, this causes delays on the Pasir Gudang-PTP link.

Within the goods vehicle industry, high competitiveness and low entry barriers have resulted in a proliferation of companies. While this helps keep prices down, many companies find it challenging to meet delivery deadlines. This adds to both the direct and indirect costs of the affected businesses. In addition, it influences perception of the business environment in Malaysia, and private sector investment decisions.

Safety and social well-being is another area of critical concern in land freight. Accidents involving trucks and vans are four times higher than other forms of non-private vehicles. In the five-year period between 2002-2007, there were approximately 125,000 accidents involving large trucks, and more than 80,000 involving small trucks. Driver fatigue from long working hours, and reckless driving caused by looming delivery deadlines are some of the root causes of these high accident figures. They will need to be addressed. Several drivers may not even be medically fit to drive – a disturbing realisation resulting from a 1998-held survey by the Malaysian Medical Association. In addition to posing a potential road safety hazard, heavy goods vehicles contribute to noise and air pollution as well.

6.3 STRATEGIC FRAMEWORK TO BUILD LAND FREIGHT

6.3.1 Efficient, Reliable and Safe Logistics Enabled by Land Freight

The overarching vision of the land freight master plan is to contribute to a better logistics industry, which will also be a key enabler of economic growth and prosperity. The vision encompasses three critical dimensions – efficiency, reliability and safety. All of these dimensions must be enhanced in the coming years.

Efficiency lies in the optimal utilization of infrastructure and resources in transporting freight from its origin (e.g. port) to the destination (e.g. retail shop). An efficient land freight system is also cost-effective and is more environmentally-friendly. Reliability is equally vital in the logistics sector. Low levels of reliability impute greater direct and indirect costs on businesses. Ensuring on-time and speedy pick-up and delivery is a critical success factor for logistics companies, and the sector as a whole. Land freight transformation must also raise the safety standards across the board, given the historical safety record of the sector. Ultimately, this also contributes to a healthier and more cost-efficient industry.

To achieve this vision, land freight in Malaysia will be transformed along three broad priorities:

- Increase efficiency and flexibility
- Strengthen reliability
- Promote safety and well-being

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A. Increase Efficiency and Flexibility

For long distances and large quantities of goods, rail is typically a more efficient and environmentally friendly means of transport than goods vehicles. As such, it is important to ensure that adequate rail infrastructure is available along the main corridors of freight transport, including spur lines to support major industrial users (e.g. raw material industries, power plans). This is one of the primary considerations for the East Coast Rail Route (ECRR). The total proposed length of the ECRR is about 620 kilometres and would serve a population of 3.3 million people in Kelantan, Terengganu, Pahang and Selangor. The enhanced transport efficiency enabled by this rail project is expected to improve the East Coast Economic Region’s (ECER) connectivity with the West Coast, thereby boosting investment and economic growth. By 2024, it is expected to carry some 37 million tonnes of freight annually.

![The ECRR Project](image)

Figure 6.4: Proposed East Coast Rail Route by ECER

Other developments of rail infrastructure throughout Malaysia, such as the DTP, will also benefit the logistics industry by making available additional capacity for cargo rail, and minimizing inefficiencies arising from bottlenecks. The double-tracking at the Ipoh-Padang Besar sector in particular covers over 300 kilometres and supports the hinterland states of Perlis, Kedah Perak and Pulau Pinang. This sector is expected to transport 24 million tonnes of rail freight traffic annually by 2037, and account for 64 per cent of KTMB’s total freight traffic.

Another area of concern are urban areas where trucks contribute to road congestion and clogging up of city infrastructure. To improve the situation in the large urban areas, a comprehensive city logistics model should be developed to ensure that urban freight transport is efficient and optimizes the flow of goods into the dense urban centres. One way to operationalize this policy effectively is by setting up consolidation points where goods are pooled from different transportation providers and then jointly distributed in the city. This would optimize freight
capacity usage by increasing the average load factor of the goods vehicles in the cities. The use of such consolidation facilities can be aggressively encouraged by restricting road usage for trucks in city centres.

Flexibility is closely tied to efficiency. An land freight network comprising of dense networks of road and rail connectivity, with adequate inter-modal terminals\(^{41}\) will afford greater flexibility for logistics, and allow businesses to optimize their supply chain management. To this end, it is necessary to plan and build inter-modal terminals at critical land freight nodes.

In order to undertake land freight network planning, it is necessary for SPAD and the relevant authorities to have a comprehensive view of the land freight flows throughout the country. SPAD will lead the effort to build up a monitoring framework to enhance the scanning of land freight flows throughout Malaysia.

**B. Strengthen Reliability**

There is room for improvement in reliability of the land freight sector, particularly for goods vehicles. One option for raising standards across the industry, is to enhance the regulatory framework. Delivery-time standards can be imposed across the industry to ensure a minimum service level across the board. This may be enforced proactively through audit checks and through a formal complaint investigation mechanism.

**C. Promote Safety and Well-Being**

Standards of safety for vehicles and operators will be tightened and will include mandatory requirements for regular maintenance. These standards will be enforced through regular audits and will be tied to the operator licenses.

To ensure that both the drivers and the operators that employ them are held accountable for their safety, their respective licensing frameworks will be tightened, and licenses will be contingent upon them maintaining a good safety record. In particular, operators will be required to ensure that drivers comply to requirements by taking adequate rest between driving shifts to minimize the occurrence of accidents. Goods vehicles contribute to air and noise pollution as well as to traffic congestion in crowded urban centres. Mandating and enforcing emissions and noise standards for goods vehicles will ensure that pollution is minimized. The implementation of innovative city logistics strategies, as outlined earlier, will also reduce the presence of heavy goods vehicles with low loads entering into the city centre and contributing to the daily road congestion and pollution.

License records will be compiled into a database and operators will be required to update the database with the drivers under their employment. This database will be made accessible to the enforcement officers and the operators. This will allow operators to check the employment history of their prospective drivers so that they can conduct a background check on their safety and reliability. Driver licenses will also be tied to adequate training, and to drivers’ medical fitness.

\(^{41}\) These allow for the transfer between goods vehicles, rail and water (ships at ports).
6.4 NEXT STEPS
Two national studies will be undertaken to develop a comprehensive understanding of the entire land freight sector in Malaysia and to assess the various options to enhance the efficiency, reliability and safety of land freight.

The goods vehicle industry study will undertake a specific assessment of the current state of the industry and build internal knowledge across the sector to better inform policy pertaining to goods vehicles operations. The national freight study will undertake a comprehensive study of the entire land freight industry, including its relevance and importance for the rest of the domestic and international logistics industry. It will analyse the key challenges and opportunities in land freight and propose recommendations to enhance the sector across the board. The national land freight sector plan will thereafter be built on the findings of this study. Both studies are expected to be completed by 2013.

SUMMARY
- Land freight is a critical component of the logistics industry which underpins global trade and economic growth.
- There are both direct and indirect costs to businesses arising from freight transport.
- The strategic objectives of developing land freight in Malaysia are to:
  - Increase efficiency and flexibility
  - Strengthen reliability
  - Promote safety and social well-being
- Plans are already underway to develop the land freight sector in line with these objectives:
  - Strengthening rail infrastructure and strengthening connectivity across modes, as well as the implementation of city logistics strategies
  - Enhancing the regulatory framework to raise standards of reliability
  - Enforcing emissions standards and holding both the drivers and operators accountable for their safety records
- At the same time, a comprehensive study on national land freight will be undertaken with a view to better inform and guide the development of the national land freight sector Plan.
Moving Forward

To be successful, the policies and interventions encapsulated in the Master Plan need to be supplemented with a clear delivery plan.

Transformation Challenges

To underscore the need to focus on delivery, one need only consider the sobering statistic most transformation efforts in private or public sectors fail, primarily due to inadequate execution capacity.

![Figure (i): Public sector transformational change survey](image)

Figure (i): Public sector transformational change survey

Often, lack of focus on delivery leaves the best-intentioned plans not implemented and has the capacity to derail entire transformation programmes.

For transformation of systems such as land public transport, there are three additional broad delivery challenges need to be overcome:

i. **Tendency to solve for everything at once**

Systems are by definition more complex than singular organisations. In our case, the land public transport system cuts across geographies, modes of transport and authorities. But complexity takes time and planning. Only a sufficiently organised approach will prevent common pitfalls. When tackling too much over too little time, there is a tendency to jump from one issue to another without clear end goals in sight.

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42 Source: Public Sector Transformation Change (TC) survey 2012 (n=974); Private Sector TC survey ’06, ’08, ’10 (n=4,572) McKinset & Company
ii. The challenge of assessing success

Success in public sector systems transformation can be challenging to assess. Unlike change management in the private sector, which can be measured by its impact on the bottom line, the targets and metrics in public sector transformations are often not crisply defined. In our case, many of the metrics for land public transport system are just being conceived.

iii. Less obvious and serious consequences of failed delivery

While transformations in the private sector can mean the survival of a business as a going concern – with all its implications for the people tasked with execution – failure to transform in the public sector often does not have the same kind of attendant effects, at least not immediately. Consequently, the status quo is often perceived as a lesser but acceptable option instead of an outcome to be avoided at all costs. In our case, it is difficult in the first instance to outline clearly the consequences of delivery failure, beyond some broad indications of worsening congestion, health and the like, which themselves do not occur overnight.

All the challenges above underscore the need for strong capabilities to drive delivery of land public transport transformation.

**Ensuring Successful Outcomes**

To ensure the transformation process delivers outcomes, we will be guided by the same ten principles that anchor all actions and policies in this document. We know that delivering the land public transport transformation must incorporate the following principles:

1) Rakyat-centric
2) Comprehensive national coverage
3) Holistic solution
4) Fact-based approach for managing trade offs
5) Incorporate international best practice
6) Minimize the burden on the tax payer
7) Measurable outcomes
8) Transparency and accountability
9) Focus on delivery
10) Calibrated transformation

Guided by these principles and cognisant of delivery challenges in any transformation exercise, we have identified five key actions that will strengthen the capability to deliver the policy content. These actions **must occur** to ensure successful delivery of the plans over the 18 year horizon:
A. Stay Focused on a Few Priorities

The rationale of prioritisation is to focus resources on the most impactful actions. While we can identify a great number of actions that will help achieve the vision, there are a few action-oriented outcomes that will disproportionately affect the likelihood of overall land public transport transformation success.

Delivery should focus on three priority outcomes. These are outcomes elaborated in previous chapters but are elevated here as priorities in the delivery process as they go a long way in helping us realize the land public transport vision:

*Priority 1: Complete regional master plans and secure ownership from state governments*

The NLPTMP is a strategic policy tool which outlines specific policies and guidelines that anchor the land public transport transformation nationally. However, the contents are to be implemented at state and local level, involving state governments and local authorities.

Thus having regional plans across the country that spell out initiatives in sufficient detail is extremely important to a successful delivery of the transformation. And as state governments, agencies and local authorities are key implementers, they must also own these plans – both in authoring and executing them in partnership with SPAD as the national regulator.

In authoring these regional plans, SPAD should lead labs involving relevant agencies at federal and state levels should be conducted to ensure all initiatives are drawn up to implementable levels – from project management and ownership to funding structures.

*Priority 2: Make public transport an integral component of Malaysia’s physical development*

As our land public transport solution space is influenced by the physical and spatial arrangements in which to locate land public transport services and networks, land public transport implications cannot be an afterthought. Rather, they should be at the forefront of all development calculations, ideally from the planning stage its land freight.

To be sure, more immediate remedial actions will be necessary for mature areas with settled spatial and physical constraints, such as densely populated areas such as the national growth conurbation that includes Kuala Lumpur. But as other conurbations expand and develop, we must drive towards a new norm where public transport becomes an integral component of overall physical development.

This means that when federal, state or local authorities plan physical development, they do so in such a way that can optimise accessibility and seamlessness of land public transport services.

*Priority 3: Reform land public transport industry structure to create a robust land public transport ecosystem that catalyses further improvements*

As a matter of priority, industry reforms need not be comprehensive and all-encompassing. Rather, they should be extremely focused on the functions that will help deliver the stated vision. Prioritising these targeted industry reforms will help create a more robust land public transport ecosystem to catalyse further improvements.
As such, industry reforms here entail these specific outcomes:

- A more financially sustainable business environment that will deliver better services to the rakyat at minimal cost to the tax payer.
- Better coordination across ministries and agencies at federal and local level to ensure the most effective role of government within the land public transport industry.

B. Establish a Senior Multi-Agency Steering Committee to Oversee Delivery, Supported By National Execution Unit

Transformations require the buy-in and support of all key stakeholders. However, transformations are also easier to deliver when they receive endorsement and support from key, influential figures.

In our case of land public transport system transformation, this notion of leadership commitment is even more important considering the fragmented implementation landscape.

The surest way for key figures to drive the ownership in their respective organisations is to participate in the transformation process themselves. This can occur through formal structures such as committees with leadership representation. As such, a senior national multi-agency steering committee should be set up with representation from the highest offices of the key implementing ministries and agencies.

This steering committee will set national-level KPI targets and facilitate coordination at the highest levels to deliver the transformation. They will also meet periodically to discuss the status of the transformation.

The steering committee will be supported by a dedicated national execution unit that facilitates delivery on a day-to-day basis. The principal task of this unit is to oversee and monitor the entire implementation process at the working level. It will engage the right levers to facilitate speedy and effective implementation, based on the direction and targets set by the steering committee. In the first instance, this means ensuring that the relevant ministries, agencies and local authorities put in place capacity to drive delivery.

This working-level national unit will be housed within SPAD but have representation from all key implementing organisations, potentially via secondment.

In both instances, the relevant organisations include:

- SPAD
- Ministry of Transport – key departments are the Road Transport Department (JPJ) and the Road Safety Department (JKJR)
- Economic Planning Unit (EPU) from the Prime Minister’s Office (PMO)
- Ministry of Housing and Local Government – key departments are the Town and Country Planning Department (JPBD) and the Local Government Department
- Ministry of Works (KKR) – key agencies are the Public Works Department (JKR) and the Malaysian Highway Authority (LLM).
• Ministry of Finance (MoF)
• Ministry of Energy, Green Technology and Water (KeTTHA)

C. Establish State-Level Implementation Committees To Actively Drive Delivery

To facilitate delivery at the local level, State level implementation committees will be established. As land public transport jurisdiction is shared at federal and state level, it is doubly important that these state-level implementation committees and the national execution unit work closely to deliver initiatives stated in the regional plans.

This close relationship should begin at the planning stages in the initiative labs and continue to actual implementation. State-level implementation committees and national execution unit will monitor and jointly conduct problem-solving programs to overcome any hurdles to implementation.

D. Intensify Internal And External Performance Management

To increase the urgency and effectiveness of land public transport transformation, it is important to be guided by measurable outcomes, which are regularly tracked to assess performance.

Internally, coming up with a list of KPIs and targets syndicated throughout the implementing organisations is an important first step as they make the end goals crystal clear to internal stakeholders.

The targets for these KPIs will differ per region and conurbation, and will need to be finalised along with the respective regional plans. National-level KPI targets will also be set.

Needless to say, KPIs and targets are only effective when there is necessary follow-through. This involves regular monitoring and assessment, robust conversations on performance delivery and meaningful rewards and consequences.

To that end, KPIs and their targets must be made public, progress will be reviewed and reported every year via Annual Rep
**List of KPIs**

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<thead>
<tr>
<th>Strategic objectives</th>
<th>Indicators</th>
<th>Definitions</th>
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<tbody>
<tr>
<td><strong>Physically well-connected</strong></td>
<td>Accessibility to Employment</td>
<td>Proportion of residents who live 75 minutes away by public transport to place of work</td>
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<tr>
<td></td>
<td>Accessibility to International Linkages</td>
<td>Service provision of public transport access to airport, ports and road network</td>
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<td></td>
<td>Public Transport Network Provision</td>
<td>The amount of coverage including total kilometre of bus-route and rail network in operation</td>
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<td></td>
<td>Travel Demand</td>
<td>The number of trips or journey stages and total distance undertaken by each of mode (origin – destination) per day</td>
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<tr>
<td></td>
<td>Mode Share</td>
<td>Proportion of trips undertaken by each mode</td>
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<tr>
<td><strong>Affordable and accessible to all</strong></td>
<td>Access to key services</td>
<td>Average journey time by public transport, walking and cycling to work, education, health services, quality food shopping and open spaces</td>
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<tr>
<td></td>
<td>Physical Accessibility to the public transport systems</td>
<td>Provision of public transport facilities that enhance physical accessibility to people with disabilities (PwD)</td>
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<td></td>
<td>Real fares level</td>
<td>Fares index for main public transport</td>
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<tr>
<td></td>
<td>Operating cost per passenger kilometre</td>
<td>Operating cost per passenger kilometer, for the principal public transport services</td>
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<td></td>
<td>Public transport users satisfaction</td>
<td>Satisfaction rate of public transport users by mode</td>
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<td></td>
<td>Public Transport crowding</td>
<td>Share of overcrowded services (where utilization exceeds capacity)</td>
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<td></td>
<td>Public Transport Reliability</td>
<td>Current frequency of public transport services</td>
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<td></td>
<td>Perception of Noise</td>
<td>Perception of public transport noise levels in the local community/city</td>
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<td></td>
<td>Road Traffic Casualties</td>
<td>Number of accidents reported and also number of accidents that involving the public transport</td>
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<td></td>
<td>Crimes on Public Transport</td>
<td>Crimes per million passenger journeys by public transport mode</td>
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<td></td>
<td>Perception of crime/safety</td>
<td>Public perception of the sense of safety and fear of crime when travelling on Public Transport</td>
</tr>
<tr>
<td><strong>About better quality of life</strong></td>
<td>Carbon Emissions</td>
<td>Emissions from all identifiable road transport, expressed as tonnes of CO2</td>
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<tr>
<td></td>
<td>Public Transport Ridership</td>
<td>Annual current daily ridership of public transport services</td>
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<tr>
<td></td>
<td>Usage of enhanced-access features</td>
<td>Number of daily commuters who ride or drive to an LPT interchange or node</td>
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</tbody>
</table>

Figure (ii): List of key performance indicators
E. Engage Land Public Transport Users and Operators For Input To Ensure Transformation Is Rakyat-Centric

Even for organizational transformations, having staff or personnel aligned and invested in the transformation process is a key component of success. This is doubly true for systemic transformations because they have the added difficulty of a complicated stakeholder landscape.

The people executing this national land public transport transformation process cut across various agencies and authorities – often with their own mandate. Alignment across different implementing organisations – encompassing leadership and working levels – is important and will be helped by the steering committee, the national execution unit and by state-level implementation committees. Underpinning these formal structures is healthy partnership between the different authorities at federal and state level - working together to realize the stated vision.

Beyond investing heavily in internal stakeholder management, there is also a need to continuously engage external parties, namely the land public transport operators and the rakyat as consumers. Platforms like the “Land Public Transport Forum” facilitate an ongoing dialogue and gather input from all key parties in the system – reducing friction and ensuring that the transformation remains rakyat-centric.

TIMELINE

Given these considerations and the need to sequence implementation, this document establishes a high-level timeline to guide the transformation delivery over the next eight years (until 2020). Deadlines and deliverables beyond 2020 will be finalised during the first five year review of the National Land Public Transport Master Plan in 2020.
Figure (iii): Comprehensive timeline