

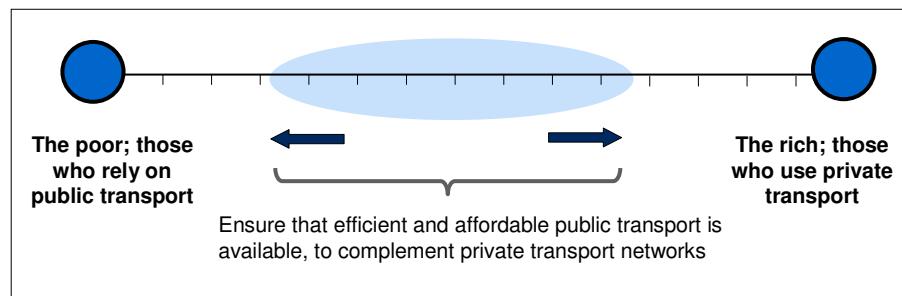
# PEMANDU Lab Highlights: Urban Public Transport

*“Our aspiration is to see Malaysia’s public transport system become the mode of choice of urban commuters over the medium term as we attempt to manage the polarity between the less fortunate, who have no option but to use public transport, and the rest, who are able to rely on private vehicles. As an entry point, we will begin with the Klang Valley but over time, expand to other cities. To guide our journey, we have set an ambitious target of not only reversing the declining trend of modal share of public transport in the Klang Valley but actually increasing it from the current 10-12% levels to 25% by the end of 2012. As Minister of Transport, I am committed to delivering this and hope that all Malaysians will support me and my team in this endeavour”*

(Dato’ Sri Ong Tee Keat, Minister of Transport)



## How improving urban public transport contributes to 1 Malaysia



The significance of cities as highly productive centers of our increasingly service-oriented economy is growing. Transport networks must be able to support the economic growth, growing populations, and the diverse expectations of urban activity. There is clear global evidence that a comprehensive and well-performing transport system is an important enabler of sustained economic prosperity<sup>1</sup>. To create a sustainable system, we have to transform our public transport network to make it more attractive to all commuters and overcome problems of congestion and delays that have direct costs on people and businesses.

Public transport is one of the perennial urban pain-points for Malaysians. It is consistently one of the top-5 categories of news articles published each year and has a significant impact on the quality of life of the urban public, which accounts for a large part of the population (30% of our national population can be found in Klang Valley, Penang, and Johor Bharu alone). Public transport impacts the productivity of cities, and the ability of Malaysian cities to compete with global counterparts. Beyond that, as the global War for Talent becomes ever more intense, it is critical that our cities are built upon an efficient and effective transportation system as an added incentive to attract and retain the best talent.

<sup>1</sup>Evidence from the Eddington Transport Study in 2006 conducted in the UK found a 5 per cent reduction in travel time for all business and freight travel on the roads could generate around £2.5 billion of cost savings – some 0.2 per cent of GDP.

Our historical approach to urban transport has been to “build our way” out of congestion, relying on more roads and more cars as a solution to the increasing demand for travel. This in itself perpetuates a vicious cycle as massive highways quickly fill up with vehicles, intensifying congestion within and outside the city, resulting in the continuous need for building longer, bigger, wider highways. A shift towards public transport simply means *doing more, with less, faster* – one bus instead of 30 cars, travelling at 60 kmph instead of crawling at 30 kmph.

Taking the Klang Valley as a microcosm of the urban public transport issues facing us, public transport commuters today are suffering daily from congestion, unreliable service, limited connectivity, and accessibility. For example, in the Klang Valley today, there is:

- **High congestion during peak periods:** Our main rail lines are suffering from excessive crowding with 1.5x capacity on KTM Komuter and 1.8x on the Kelana Jaya LRT services. This translates into an uncomfortable and frustrating journey experience. Similarly, bus services on high demand routes suffer from packed conditions during peak hours. 23 out of RapidKL’s 166 routes are over capacity today.
- **Unreliable service with frequent delays and cancellations:** Trains and buses frequently do not adhere to schedules (or in the case of buses, do not have schedules), making it difficult for commuters to plan ahead, often causing great disruptions to people’s lives, given the unpredictability of service
- **Poor connectivity between modes:** A frequently-quoted example is the lack of clear, standard connectivity between monorail and LRT stations at KL Sentral. On an average day, roughly 3,000 commuters walk more than 350m around a construction site to connect between the two stations through poorly maintained and only partially sheltered walkways. In addition, there are other stations such as Hang Tuah and Titiwangsa where connectivity for passengers transferring across rail stations is a challenge due to lack of proper pedestrian facilities to integrate the rail stations
- **Poor access to public transport services:** Current estimates show that only 61% of Klang Valley’s population live within 400m (a reasonable walking distance) of a bus route. In addition, of the roughly 4,000 bus stops in the Klang Valley, approximately 40% have no shelter or signage.

With consistent growth in private vehicles, low investment in a public transportation system that has not been able to keep up with travel demand growth, coupled with an increasingly ‘sprawling’ city, public transport modal

share has steadily fallen from 34% in 1985 to 20% in 1997<sup>2</sup> and is today closer to 10-12%<sup>3</sup>.

We cannot continue to “build our way” out of this congestion, relying on longer, bigger, and wider highways and roads. If this situation is not addressed, our cities will fall victim to the congestion chokehold that plagues other cities, affecting the productivity of our core city centres, the quality of life of our urban public, and our ability to elevate Malaysian cities to that of global standards.

### **We aspire to increase public transport modal share in the Klang Valley, Penang and Johor Bahru, with an initial target of 25% by 2012 for the Klang Valley**

The government aims to vastly improve our public transportation within the nation’s major population centers. We will start with an ambitious goal of achieving 25% share of person-trips via public transport during the AM peak period of 7AM to 9AM by 2012 in the Klang Valley from current levels of approximately 10 to 12%, and subsequent adapting and applying successful initiatives to Penang and Johor Bahru. In the Klang Valley, this is equivalent to increasing current public transport ridership by 2.5x from an estimated 240,000 daily passengers (during the AM peak) to approximately 600,000 by 2012.

In addition to overall public transport modal share, we have identified four sub-NKRAs to anchor our efforts to deliver significant improvements in urban public transport:

- **Reliability and Journey times:** Significantly reduce door-to-door journey times, including in-vehicle and out-of-vehicle travel times during AM peak periods, and improve the reliability of services focusing on punctuality of service
- **Comfort and convenience:** Improve the end-to-end journey experience on public transport from the moment commuters step out of their door to the moment they arrive at their destination

<sup>2</sup> Based on the 1999 Study on Integrated Urban Transport Strategies for Environmental Improvement conducted by the Japan International Co-operation Agency (JICA), or more commonly known as the ‘JICA Study’

<sup>3</sup> This figure is lower than the often cited figure of 16% public transport modal share which is an accurate representation of modal share within the urban core (focusing on traffic crossing the Middle Ring Road II boundary). Extending coverage to the whole of Klang Valley and taking into account both radial (travel to and from KL CBD) and circumferential (suburb to suburb travel) traffic yields a modal share closer to 10-12%.

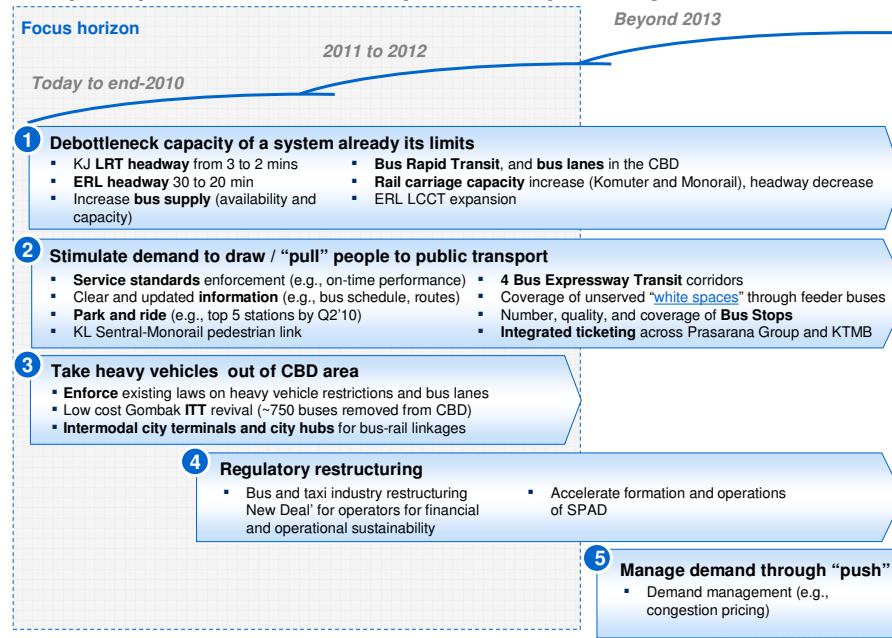
- **Accessibility and connectivity:** Ensure ability of the rakyat to have easy and good access to public transport
- **Availability and capacity:** Provide of sufficient public transport capacity to serve both existing and new passengers

## We have identified 5 principal levers to increase public transport

We have identified 4 levers to be pulled between 2009-2012 to enable us to achieve 25% public transport modal share in the Klang Valley by 2012, and one additional lever to be pulled beyond that timeframe to secure and extend these expected improvements. These actions are summarized in Figure 1 below.

Figure 1

### Five principle levers to increase public transport usage



- 1 Debottleneck capacity of a system already at its limits: By 2012**, capacity on the KTM Komuter and LRT lines will increase by 1.7x to 4x (depending on specific line). Dedicated right-of-ways for buses across 12 major corridors in the Klang Valley will be introduced. These 12 corridors will in total carry 35,000 to 55,000 passengers during the AM peak hours, or 6 to 9% of total public transport ridership by 2012. The size of the existing bus fleet will be increased by 850 buses, close to doubling the number of buses operated by RapidKL today. This will improve services on current routes and provide

service to 53 new routes to address currently unserved areas, or ‘white spaces’, of demand

- 2 **Stimulate demand to draw / “pull” people to public transport:** Key initiatives include introducing an integrated ticketing platform and fare structure (introducing the ‘1Ticket, 1Seamless Journey’ concept across all 16 operators in the Klang Valley), adding roughly 6800 new parking spaces across 14 key rail stations outside the urban core, enhancing feeder services into rail stations, and upgrading high-traffic stations and terminals. Enforcement and monitoring efforts will be critical to ensuring that all operators adhere to minimum service and operational standards. In order to achieve this, major efforts are required in integrating backend IT systems and launching joint on-the-ground enforcement efforts, across all the major enforcement agencies – the 10 local authorities, CVLB, JPJ and PDRM.
- 3 **Take heavy vehicles out of the CBD area:** Creation of three major integrated transport terminals (ITTs) outside the city core, beginning with the southern ITT Bandar Tasik Selatan. This will be supported by ITT Gombak by the end of 2010 (which will divert >750 inter-city buses from the North and East from the city core every day), and then a third, potentially in Sungai Buloh, to serve the Northern inter-city express buses beyond 2012. Within the city centre, there will be two types of public transport hubs. Firstly, the intra-city terminal hubs at Pasarama Kota, Plaza rakyat and Pudu to facilitate the flow of traffic from the suburbs into the city. Secondly, 14 Hentian Akhir Bandars (“HABs”) which will facilitate the movement of passengers and public transport vehicles within the city centre to reduce congestion and streamline overlapping routes.
- 4 **Regulatory restructuring:** It is critical to ensure that the proposed Land Public Transport Authority (SPAD – Suruhanjaya Pengangkutan Awam Darat) is fully operational by the end of 2010. A prerequisite for success will be the creation of a single point of accountability for policy planning and regulatory oversight. This is currently lacking with 12 Ministries and various agencies currently involved in different aspects of public transport, and no single industry ‘captain’ to coordinate efforts across the entire public transport system.

and, beyond 2012,...

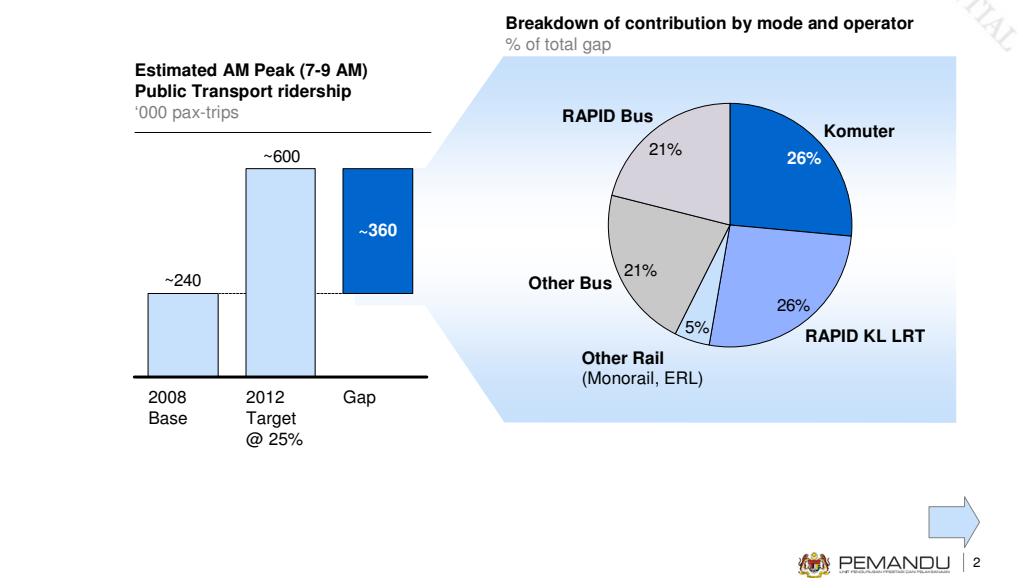
- 5 **Manage demand through “push”:** Once public transport modal share is above 25%, and the public transportation system has been improved in terms of reliability, journey times, comfort, accessibility and connectivity, we will accelerate “push” initiatives to increase the relative attractiveness of public transport vis-à-vis private vehicles. One example is congestion pricing, which

has been implemented with great success in cities including London and Singapore. In London, congestion pricing reduced the number of vehicles entering the CBD by 34%, with a corresponding increase in vehicle speeds of roughly 12% within the CBD.

The challenge of more than doubling our public transport ridership in less than 3 years is a daunting one. However, if successfully implemented, we expect the portfolio of initiatives described above to enable us to achieve this target by 2012. As described in Figure 2, roughly 60% of the *increase* in public transport ridership will be anchored on rail. Buses will play a critical role both in quickly providing new high-speed services from the suburbs into the city centres, and as an efficient ‘last-mile’ service provider through feeder services to and from rail.

**Figure 2**

**Achieving target will require major demand and supply efforts from KTM Komuter, LRT and buses**



**We will debottleneck the capacity of a system already at its limits**

The following are the Government’s initiatives to reform train and bus services.

**Increasing KTM Komuter capacity by 4x on a sustainable basis**

KTM Komuter is an important lifeline for many suburban commuters today. Today, services are running at 1.5x average load factors during the AM peak

period, implying that a carriage designed to carry 400 people now carries over 600 people during peak hours. Furthermore, services are often delayed or cancelled causing great inconvenience to the approximately 50,000 users on a daily basis.

A major initiative will be to increase capacity by 4x of KTM Komuter train-sets through refurbishments and new purchases of rolling stock. This will more than halve the waiting times of commuters, and enhance greatly their travel experience. The system currently runs with headways<sup>4</sup> of 20 minutes, which will be reduced to 7.5 minutes outside the CBD, and down to 3.75 minutes on the busiest segments within the CBD. In addition, the current fleet is made up of 3-car trains, while platform lengths can accommodate 6-car trains. By reducing headways, and increasing the number of carriages in each train, capacity can effectively be quadrupled.

With investment in feeder services, parking, and station upgrades, there should be sufficient demand potential in the station catchment areas to more than fill this additional capacity.

Increasing the capacity by 4x will require increasing the rolling stock inventory by an additional 27 units of 3-car trainsets (also known as EMUs<sup>5</sup>) and 44 units of 6-car trainsets. These trainsets can be procured through a combination of ‘resurrecting’ current rolling stock that are not operational, and purchasing new trainsets. The cost of this initiative is estimated at RM2.1 Billion. Full capacity is expected to be on-line by the 1<sup>st</sup> half of 2012 if the process is begun immediately (given manufacturing lead-times of between 18-24 months).

To ensure this investment is fully leveraged, it is critical to enhance the availability levels<sup>6</sup> of KTMB’s Komuter trains. This currently runs at approximately 40% for KTMB’s Komuter rolling stock. Typical levels should be closer to 80 to 85% for similarly-aged rolling stock. As such, maintenance procedures and systems, driving practices, and maintenance budgets need to be upgraded to world class levels as a matter of priority to ensure we derive the full benefit from this investment. In addition, we will explore outsourced maintenance options for speed and cost effectiveness.

### **Increasing capacity on other rail lines – Light Rail Transit and Monorail**

The Kelana Jaya LRT line is the most congested in the Klang Valley. Today it transports roughly 34,000 commuters during the AM peak period, at load factors as high as 1.8x. It currently runs 2-car trains at a headway of 3 minutes. In

<sup>4</sup> Defines as the time between one train’s arrival and the next train’s arrival

<sup>5</sup> Electrified Multiple Units

<sup>6</sup> Availability is defined as the proportion of rolling stock that is available for service at any point in time.

anticipation of the 34-km line extension to be completed by the end of 2012, RapidKL has ordered 35 new 4-car trainsets, with the first new trainset having gone into operation in December 2009. With the delivery of these trainsets, RapidKL will be able to reduce headways from 3 minutes to 2.5 minutes, running a mixed fleet of 2-car and 4-car trainsets. These initiatives combined are expected to triple capacity, and enable ridership during the AM peak period to increase from current levels of approximately 34,000 (at 1.8x load factors) to roughly 98,000 (at 1x load factors) when fully deployed.

The Ampang LRT line currently runs 6-car trainsets (given longer station platforms than those of the Kelana Jaya LRT line, thus accommodating longer trainsets). Today, services run at approximately 80% load factors, below design capacity. Prasarana is able to almost immediately reduce headways by using only their current fleet from 2.8 minutes to 2.5 minutes subject to sufficient increase in demand. Enhanced feeder services, parking, and station upgrades will be deployed to drive increased demand.

The Monorail system currently runs at up to 1.3x load factors at critical stretches during the AM peak, with heavy congestion in core stations such as Hang Tuah. Close to 88% of Monorail ridership is a continuation of journeys from LRT and KTM Komuter, a critical “last mile” role. As the capacity and ridership of the 2 LRT lines and KTM Komuter increases dramatically going forward, it will be crucial to ensure the monorail does not become the bottleneck. In order to prevent this, the Monorail will need to increase total capacity from approximately 6,800 passengers during AM peak today to roughly 12,000 passengers by 2012. This will be achieved through a combination of increasing the train lengths from 2 to 4 (or even 6) car sets, and reducing current headways of 5 minutes to closer to 3 minutes.

### Providing priority lanes and dedicated bus right-of-ways on high demand routes

Bus services have long suffered from a negative public perception of being the ‘poor man’s’ alternative to transportation. Current bus services are unable to match the high speed, high capacity and high frequency of rail systems as they crawl through existing and heavily congested highways in tandem with thousands of other cars and vehicles. To overcome this, there will be three key efforts launched across 12 major corridors heading into the CBD; Bus Expressway Transit, Bus Rapid Transit and Bus Lanes.

Bus Expressway Transit (“BET”) services will be launched on 4 underutilised highways in the Klang Valley. Commuters will enjoy up to a 55% reduction in

average point to point journey times from this limited stop service with priority toll booths.

A full-fledged Bus Rapid Transit (“BRT”) system will be implemented, similar to the highly successful systems in Curitiba, Brazil and Bogota, Columbia, carrying over 2 million passengers per day in those two systems combined. Even in neighbouring Thailand, the first of 5 planned BRT corridors is scheduled to be launched in December 2009. For the Klang Valley, the BRT system will be launched across three major corridors heading into the city centre with a total route length of 49 km. These corridors will be physically separated from existing lanes with concrete barriers and have dedicated stations for loading and unloading of passengers – not unlike that of LRT systems. For the 5 remaining corridors with more restrictive physical constraints, a system of bus lanes will be implemented without actual physical segregation of the lanes, but with lane markings for flexible traffic management (e.g., bus lanes only during the AM and PM peak hours). The total route length of the proposed bus lane system is 21 km.

Implementation of the BRT and bus lane systems will provide incremental ridership of 35,000 to 55,000 passengers during the AM peak with an average reduction of up to 50% in journey times due to the significantly higher speeds at which these buses will travel unhampered by traffic.

### **Increasing bus capacity on congested routes and white-space areas**

There are currently 13 bus operators within the Klang Valley, with RapidKL holding the largest market share at approximately 50%. Today, RapidKL has roughly 710 buses in operation daily and is undergoing a bus fleet expansion plan to increase the fleet by an additional 400 new buses to be delivered over 2010 and 2011. In order to achieve bus share of ridership of roughly 100,000 passengers during AM peak (excluding BET, BRT and bus lane ridership), there needs to be better service on existing routes, and new routes put in place to address under-served areas and neighbourhoods (termed white-space areas). This will require an additional roughly 740 new buses (i.e., an incremental 340 buses over and above the 400 new buses already planned).

- **Current routes:** RapidKL alone operates a total of 166 routes, with the bulk of these being “social routes” – i.e., low ridership routes where load factors during the AM peak period are typically below 40%. RapidKL efforts to improve ridership on current routes will focus on; (i) debottlenecking 23 congested high traffic routes, and (ii) improving service frequency on 88

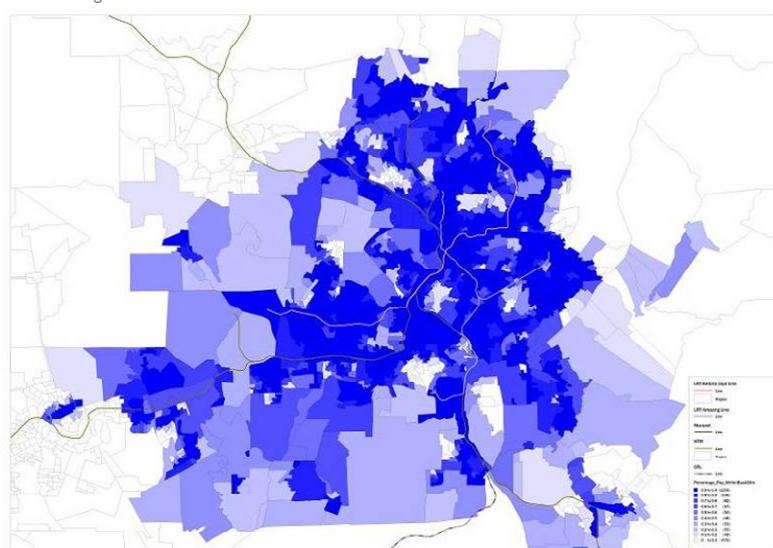
routes to a maximum of 20 minutes headway for feeder lines and 15 minutes headway for trunk lines.

- **White-space areas:** Currently only about 60%<sup>7</sup> of Klang Valley's population live within 400m of a bus route (Figure 3). A total of 53 new routes have been identified to serve outlying and underserved areas, which will increase the total Klang Valley population coverage to ~70%.

**Figure 3**

**There are 'white spaces' of unserved demand in the Klang Valley where there is limited access to bus services**

RAPID KL Coverage



SOURCE: Census 2000 data; Operator data

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In order to achieve these ambitious bus ridership targets, the industry will require a total of 850 new buses over the period of 2010 to 2012, of which 400 buses have already been purchased by RapidKL. The incremental cost of the remaining buses is estimated to be RM 290 Million.

Together, these capacity initiatives will increase the available AM peak period capacity of the Klang Valley public transport system to over 600,000 passenger trips.

<sup>7</sup> ~60% coverage based on latest available 'micro-level' information from the Census 2000. Coverage of routes only include RapidKL routes. Other existing bus operators play a very significant role in public transport, but there is sadly a lack of recent and reliable source of information on their services and routes. This is one of the key efforts being addressed under performance management of public transport operators

## We will stimulate demand to draw / “pull” people to public transport

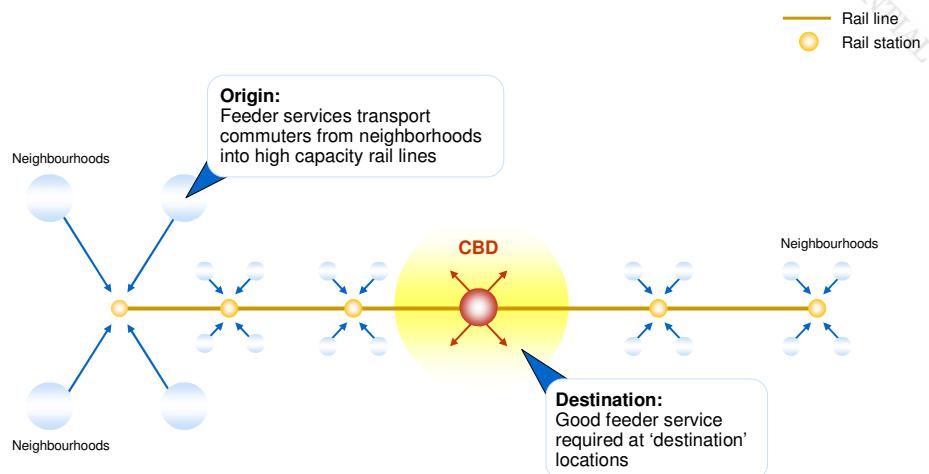
The Government will attract more of the rakyat to use public transport via the following actions.

### Rail: Enhancing catchment from stations by upgrading high-traffic stations and enhancing feeder services

As capacity is increased across rail lines, it is critical to supplement these supply-side initiatives with demand stimulation initiatives to attract commuters to fill up trains and buses. Drawing from global experience of other cities, the most efficient way of moving people is via a hub-and-spoke network, where feeder services (the ‘spokes’) take commuters from their neighbourhood homes to the nearest train station (the ‘hub’), which then channels them in a fast and comfortable manner to their end destination, usually within the city centre (Figure 4).

Figure 4

#### Hub-and-spoke strategy emphasizes channeling commuters to high capacity rail systems



However today, over 50% of the RapidKL LRT and KTM Komuter stations have poor service, with either only 1 or no feeder routes serving the station. With the massive deployment of additional capacity, it will become even more critical to

overcome limiting physical constraints to feed passengers to these stations via buses.

In addition, 14 rail stations have been identified outside the urban core that would benefit from additional parking to encourage park-and-ride commuters. Starting with Sungai Besi, Gombak, Ampang, Bandar Tun Razak and Bandar Tasik Selatan in 2010, additional parking will be added in stages over the next 3 years for a total of 6,800 additional parking bays across these stations. Conventional multi-storey parking typically costs on the order of RM12,000 per bay, but lower-cost designs (e.g., less amenities, modular design with pre-fabricated parts) can potentially reduce this to the range of RM5,000 per bay. In total, we estimate the cost of adding parking to be roughly RM80 Million. Under UKAS guidance, these projects will be financed via PFIs to reduce the burden on the government.

Finally high-traffic stations will be upgraded to enhance usability, universal access (e.g., ramps, lifts), and general look & feel. Work on 4 high-priority stations – KL Sentral, Masjid Jamek, Hang Tuah, and Titiwangsa – are expected to be completed by the end of 2010.

#### Bus: Enhancing and monitoring operator service standards and enforcement to facilitate flow of traffic

Many operators do not meet quality standards around on-time performance, comfort levels or cleanliness. A set of quality standard specifications has been developed with benchmark standards and targets. In the short term, the bus and rail regulators, CVLB and DoR, will need to rely heavily on flash reports from the operators (which DoR already tracks and monitors today) to assess improvements in target KPIs.

In the longer term, we will leverage and build on the existing Intelligent Transportation and Information System (“ITIS”), currently under the administration of DBKL, to become the Klang Valley Transportation Performance Management Hub. With this, real-time or near real-time information can be uploaded directly from the operators into the center for more effective performance monitoring. Monitoring KPIs alone will not guarantee success however. Regulators will need to move towards explicitly linking bus operating licenses to minimum service standards to allow for proper consequence management in the case of non-performance.

Enforcement of private vehicles and taxis is another perennial issue which will need coordination and joint effort across the 14 agencies involved in enforcement – the 10 PBTs, PDRM, JPJ and CVLB. Four key initiatives include increasing the use of IT and surveillance technology to detect and efficiently punish offenders, increase the number of enforcement personnel on the ground in a coordinated

fashion across all 14 agencies, and streamline and close legal loopholes in the enforcement process to ensure that offenders do not escape without being appropriately punished.

There are clear quick wins in enforcement. For example, blacklisting DBKL-registered offenders with JPJ to prevent drivers from renewing their licenses is a quick and very effective way of demonstrating the seriousness and commitment to stricter enforcement standards. These and other quick-wins are listed in Figure 5 below.

**Figure 5**

**Potential quick-wins that can be implemented soon for high visibility of action and impact**

	<b>Actions required</b>	<b>Expected impact</b>
<b>Immediate blacklisting of DBKL's and PDRM's traffic offenders</b>	<ul style="list-style-type: none"> <li>▪ JPJ to agree on blacklisting DBKL's and PDRM's traffic offenders</li> <li>▪ DBKL, PDRM and JPJ to agree on criteria for immediate blacklisting</li> <li>▪ DBKL and PDRM to submit list of offenders to JPJ</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased compliance to traffic regulations and licensing conditions, especially repeat offenders</li> </ul>
<b>Joint "on-the-ground" concerted enforcement action against traffic offenders</b>	<ul style="list-style-type: none"> <li>▪ JPJ, PDRM and PBTs to agree on <ul style="list-style-type: none"> <li>— Joint "on-the-ground" enforcement team setup</li> <li>— Rolling list of "hot spots" and schedule</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased compliance at "hot spots" locations with high impact on PT</li> <li>▪ Cascading effect of increased compliance in other areas due to publicity and word of mouth</li> </ul>
<b>On-the-spot towing of private vehicles with parking/obstruction violation</b>	<ul style="list-style-type: none"> <li>▪ PBTs to set up its own <ul style="list-style-type: none"> <li>— Parking lot structure for towed vehicles</li> <li>— Enforcement team at the parking lot for payment collection and driver verification</li> </ul> </li> <li>▪ PBTs to hire towing companies</li> </ul>	<ul style="list-style-type: none"> <li>▪ Reduced parking and obstruction violations</li> </ul>

SOURCE: Lab analysis

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**Bus: Enhancing the quality of bus stops and ensuring scheduling information in all bus stops**

Today there are an estimated 4,000<sup>8</sup> bus stops in the Klang Valley. Of these over 40% are unsheltered and have no signage. We will start by cataloguing and numbering all the bus stops across the Klang Valley in a coordinated fashion. Additionally, we will aggressively explore opportunities with private companies, such as advertising agencies, to help fund and maintain bus stops across all PBTs.

In addition, clear scheduling signage for *all operators* will be posted at *all* bus stops. One challenge with this, as observed historically, will be vandalism and posting of notices on signage (e.g., “Ah Long”, “tuition services”). Enforcement activities will include encouraging the public to report such incidences (together with a complaint hotline), taking action against those individuals found committing vandalism, and taking action (when appropriate) against the proprietors of services being advertised over these signage.

### Integration: Infrastructure improvements to improve intermodal transfers and the pedestrian experience

Physical connectivity across modes is an inevitable and critical element of today’s multi-modal journey experience. Due to less than ideal planning, many stations suffer from poor physical access, resulting in commuters having to battle poor walkways and long unsheltered walks to get from one station to another – a serious deterrent for any traveller. One high profile and frequently-quoted example is the 350 meter walk between the Monorail station and KL Sentral, the city’s transportation hub. In the future, as MRCB completes the next phase of its development (Lot G), the two stations will be physically connected via a completely enclosed walkway through the mall. In the short term, we will build a simple, functional enclosed shelter around the construction site to provide relief to roughly 5000 commuters daily. This solution will be implemented in early 2010 with assistance from MRCB.

### Integration: Establishing integrated smart ticketing across all public transport modes and operators

Today, there are 16 different operators each issuing their own tickets, with almost all bus operators operating on a cash fare basis, resulting in long waiting times, loss in fare revenue from ticket fraud, and a need for multiple tickets. Currently up to 25% of travel time for the average bus commuter is spent queuing, or waiting in the bus while others are queuing to pay for their tickets. Migrating users to a cashless system will approximately halve the transaction time it takes to purchase tickets (Figure 6).

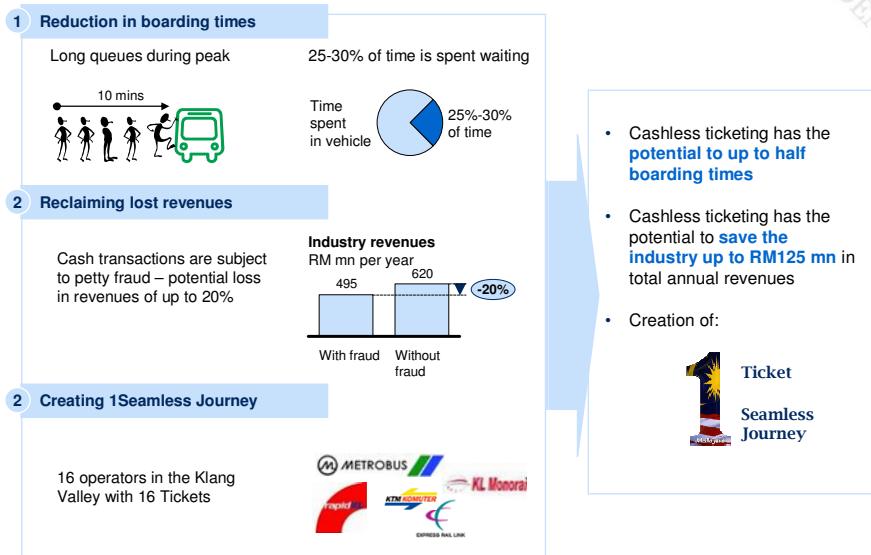
<sup>8</sup> This is at best an estimate due to the lack of information on the number of bus stops; both official and ‘unofficial’ (informal stops where buses regularly pickup and dropoff passengers but which are not officially recognized by the local authorities).

In addition, there are currently 16 different bus and rail operators across Klang Valley, each with independent ticketing and collection systems. The establishment of “1Ticket, 1Seamless Journey” will greatly simplify and stimulate use of public transport.

Finally, there is an estimated 20% revenue leakage, from both bus and rail, due to an imperfect cash system, costing operators an estimated RM 125 Million in revenues every year. Migrating to a cashless system across all modes will reduce this significantly as cash handling processes are greatly reduced.

Figure 6

**Integrated Smart Ticketing is critical to help achieve our NKPI on reducing journey times**



1 Based on operator experience  
2 TfL experience reduction once Oyster was implemented – savings as much as GBP40 million a year

Deploying integrated ticketing and AFC will incur a cost of approximately RM35 million, implemented on a cost-sharing basis with Touch n Go in order to leverage existing infrastructure. It will be mandatory for all operators to install cashless infrastructure on their vehicles and stations, at no upfront costs to them. Options around alternative reloading infrastructure leveraging mobile operators and banks are being explored. The cost of readers and terminals will be shared between the cashless system operators (e.g., Touch n Go, mobile operators, banks) and the Government. In addition, to encourage the usage of the cashless system, a fare differential of 20% will be introduced between cash and cashless fares by increasing cash fares by 10% and reducing cashless fares by the same amount. This practice is widely used in most ‘model’ public transport systems,

such as the Oyster Card in London, EzyLink in Singapore, and Octopus in Hong Kong

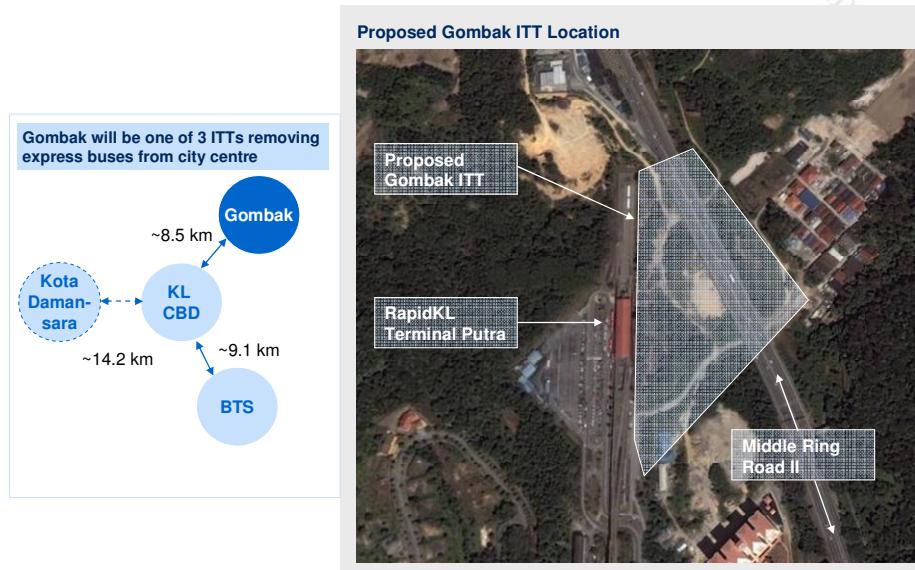
### **We will take heavy vehicles out of the CBD area**

The Government will also take the following initiatives to keep heavy vehicles away from the CBD.

#### **Creation of 3 integrated transport terminals (ITTs) outside the city core to divert roughly 750 inter-city buses out of the CBD**

The first ITT terminal at Bandar Tasik Selatan will be completed by November 2010 and upon completion will divert roughly 700 express buses from Puduraya, providing much relief to city centre traffic flow. Planning for the Gombak ITT has been long in the making, but was never progressed due to budget constraints. However there is significant value in an ITT at Gombak to divert roughly 750 inter-city buses from the Northern and Eastern corridors out of the city core. A revised Gombak ITT will be implemented by the end of 2010, at a much lower cost of RM 150 Million, based on a modular approach. This will be a low-cost ITT, with sufficient infrastructure to ensure a smooth flow of traffic, ample parking, and cohesive integration with the Gombak LRT (Figure 7). However “bells and whistles” including the integrated commercial centre will be deferred to a later date. This low-cost Gombak ITT will be fully funded by the Government in the interest of time, with subsequent upgrades pursued via PFI partnerships.

Figure 7

**Gombak ITT will be linked to RapidKL's existing Gombak LRT station**

A second ITT will be built in Sungai Buloh beyond 2012, which will serve the Northern inter-city corridor. This will divert some traffic from Gombak, and ensure scalability going forward.

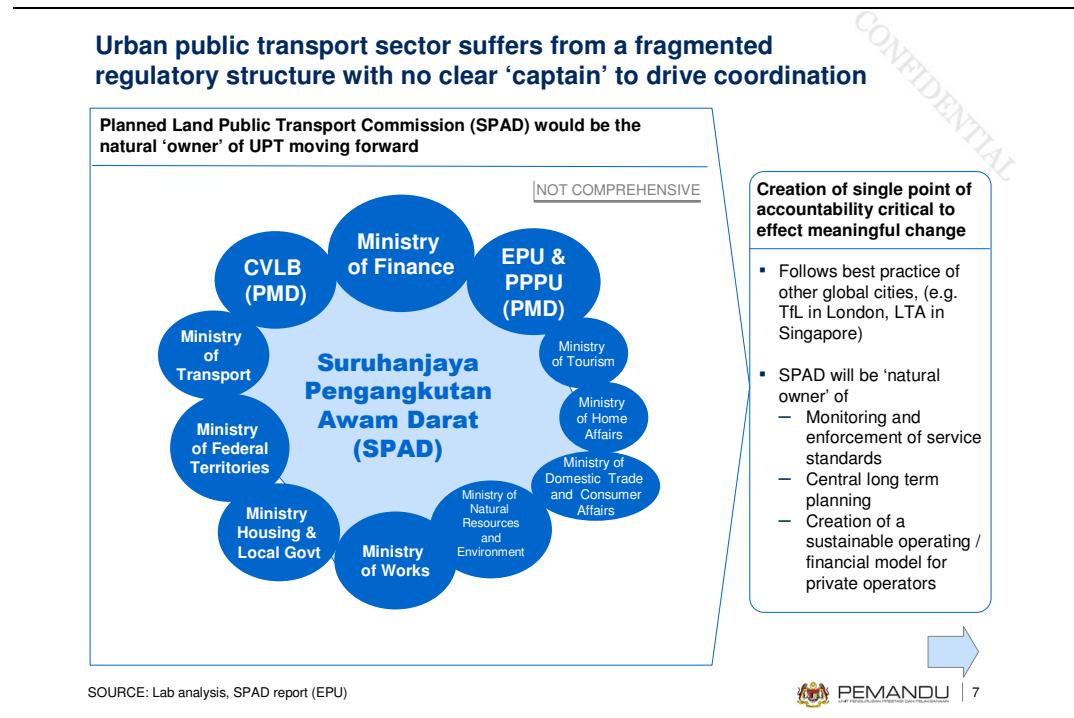
### Upgrading 3 intra-urban hubs

3 intra-urban terminal hubs will be established to “collect” traffic from high-density radial corridors leading into the CBD. These include Pasarama Kota, Hentian Putra, and Puduraya. Puduraya is currently undergoing a rejuvenation, in an RM 80 Million effort led by UDA Holdings, the developer of the station. When the Bandar Tasik Selatan ITT hub is completed in November 2010, roughly 700 express buses will be taken out of the city centre, allowing for a less congested environment. With the progressive completion of the Gombak ITT in end 2010, and at a later stage the Sungai Buloh ITT, over 2,000 express buses currently plying to these three city hubs will be removed to the fringes of the city. RM 40 Million will be invested into the two remaining hubs to ensure adequate bus staging areas, and higher quality of bus stops.

## We will restructure the regulatory system

There are currently 12 Ministries and many agencies (both at the local and federal level) involved in governing various aspects of public transport within the Klang Valley. A prerequisite for successful implementation of the above initiatives will be the creation of a single point of accountability for policy planning and regulatory oversight (Figure 8). It is critical to ensure that the proposed Land Public Transport Authority (SPAD – Suruhanjaya Pengangkutan Awam Darat) is fully operational by the end of 2010

**Figure 8**



However there is a need for an interim governance structure to ensure execution throughout 2010. A program management office (PMO) under the Ministry of Transport (MOT) will be put in place to manage execution until SPAD is fully operational. This PMO structure will report directly to the Prime Minister, and will set the agenda for the Urban Public Transport DTF. This PMO entity will convene the relevant Ministries and agencies to ensure integrated and detailed plans and policies are created (for the above initiatives) and monitor the progress of the initiatives. This team will work in close collaboration with an interim SPAD NKRA team, sharing resources and location. The SPAD NKRA team's mandate will be to deliver five out of 11 initiatives which have no clear owner – Bus Right of Way, Bus Stops, Enforcement, Performance Management, and Ticketing Integration. In addition, this PMO team will coordinate directly with

PEMANDU program management oversight for Urban Public Transport initiatives.

### We will manage demand through “push”

Once the modal share aspiration of 25% (in the Klang Valley) has been achieved, measures to further increase the relative attractiveness of public transport versus private vehicles will be implemented. Demand management initiatives such as congestion pricing, parking surcharges and vehicle taxes have been implemented to great success in cities such as Singapore and London. The objective of such measures are to price in the ‘true cost’ of private vehicle ownership and usage on the system and the environment (i.e., private vehicles ‘pay’ for the congestion that they cause in the system). Such measures can only be implemented once commuters are given a viable alternative to private vehicles – a well-functioning, efficient and sustainable public transportation system. As such, these measures will start to be implemented from 2013 onwards.

### The Government commits to the following NKPI targets

The outcomes expected are described in the table below (*work in progress*)

Focus area	KPI	System	Current	2010
<b>Overall</b>	• Modal Share	Overall	• 10%	• 13%
	• Ridership of Public Transport	Overall	• 240K	• 265K
<b>Reliability and Journey Times</b>	• % of journey times within 60 minutes during the AM peak period	Overall	• Survey Result	• TBD
<b>Comfort and Convenience</b>	<ul style="list-style-type: none"> <li>• Overall user satisfaction rating</li> <li>• Peak Load Factors of bus</li> <li>• Peak Load Factors of Rail</li> </ul>	Overall RapidKL Bus Kelana Jaya	• Survey Result • 44% • 130%	• TBD • TBD • TBD

Focus area	KPI	System	Current	2010
	• Peak Load Factors of Rail	Komuter	• 140%	• TBD
<b>Accessibility and Connectivity</b>	• % of population living within 400 m of PT route	Overall	• 63%	• TBD

## Early signs of progress seen on urban public transport

We have seen some encouraging early impact, including:

- Realignment of RapidKL bus routes to minimise transfers (need details from RapidKL)
- Reduction of KTM Komuter headway from 20 minutes to 15 minutes through optimising deployment of trainsets in November 2009
- Delivery of first 4-car trainsets on RAPID KL in December 2009
- Launch of BET services on 4 corridors in December 2010
- Identification of 109 new routes with first new service in January 2010

## Our next steps will be to develop a land transport masterplan and new deals for operators

The aspiration of more than doubling public transport ridership is a stretch target but will be the critical first step in ensuring the sustainability of our city. Over the longer term, a comprehensive review is required of the following elements:

- **Land Public Transport Masterplan:** In the longer term, a SPAD-led integrated Land Public Transport Masterplan that will drive the land public transport landscape of our urban cities for the next decade. Public transport systems are inherently long term in nature, and require tight integration with urban planning and design (e.g., local incentives for developers to integrate with long term rail lines) and a long lead time for implementation. This Masterplan will need to integrate local, state and federal plans to layout a coherent and collaborative approach for the future.

- **A New Deal for Operators:** As citizens place the Government under increasing pressure to be more effective and deliver better services at lower cost, there is a need to develop a new model for operators to balance the need for financial sustainability of private sector operators while ensuring that minimum standards for 'non-profitable' services are met.

### **The rakyat should use and demand efficient and comfortable public transport**

There is much that the rakyat can do to help achieve the 25% modal share target. For starters, citizens should continue to be vocal about their rights to have access to efficient and comfortable public transport. They should engage with local representatives and operators to help make communities more accessible. Start small and be specific: a new bus stop, more frequent services, better lighting around stops and stations. When buying a new house, ask developers how they plan to make the development more accessible to public transport services. Most importantly, citizens should 'leave their cars behind'. Again, start small: try out local buses on weekends or commit to a day a week of taking public transport.