

Section 2

Statement of Need

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2.1 TRAFFIC CONGESTION - THE CHALLENGE OF THE FUTURE

Traffic congestion and the efficient mobility of the urban population will be one of our main challenges in the coming decades, both in Malaysia as well as in the rest of the world. Traffic congestion is a drain on our productivity, contributes to air pollution, is energy inefficient and reduces the quality of life.

In the Klang Valley, traffic congestion has become a major problem due to the increasing number of vehicles and the urban sprawl. Over the past few decades, the expanding population in the Klang Valley has led to an urban sprawl - the KL metropolitan area has extended from the city centre to over a 20 km radius. It has expanded outwards from the city centre to the adjacent administrative areas of Petaling, Gombak, Ampang Jaya, Subang, Kajang, Hulu Langat and Putrajaya.

This urban sprawl has serious impacts including long commuting distances to work, high car dependence and higher per capita infrastructure costs. The urban sprawl also puts a tremendous amount of strain on the city's transportation infrastructure. The major highways and the ring road around the city are already congested. During peak hours, traffic is often reduced to a crawl and lengthy queues are not uncommon. The major road systems which have been constructed, under construction or committed are unlikely to be able to satisfy Klang Valley's needs even to 2020.

2.2 GAPS IN PUBLIC TRANSPORT

The main challenge facing the deteriorating urban transportation in the KL metropolitan area is the rapid growth in private transport demand. The number of vehicles in KL and Selangor has increased and this problem is made worse by the declining public transport modal share from 34% in the 1980's to 10-12% in 2008. Public transportation has never been a strong point in the Klang Valley

The two main reasons for the decline in public transport ridership are:

- gaps in and inadequacy of existing rail coverage
- insufficient inter-modal and intra-modal connectivity.

2.2.1 Inadequate Rail Coverage

Kuala Lumpur's present rail network is only 15 km per 1 million population while most large global cities have over 40 km per 1 million population (**Figure 2-1**). In terms of density, the rail density in KL is only 0.05 km/km² compared to 0.3 – 0.4 km/km² at other major cities in the world (**Figure 2-1**). On the whole, KL lags behind most major global cities in terms of mass rapid transit.

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The population of the Klang Valley is expected to exceed 6 million in 2020. The population density of the Klang Valley is estimated to be 4,000 persons/km² (**Figure 2-2**). KL has higher density; Shah Alam and Klang have significantly lower density. Within KL the highest population density is along the current transit networks (e.g. Ampang, Sentul, and Wangsa Maju). Suburban areas without good access to rail services have overall densities similar to the Klang Valley as a whole.

The forecast travel demand in the year 2030 (**Figure 2-3**) indicates large radial movement towards the central area of Kuala Lumpur. These include existing high density areas in Damansara, Cheras, Kajang as well as proposed new developments at Sg Besi airfield, Rubber Research Institute Malaysia (RRIM) and Cochrane area. The demand is highest along the Petaling Jaya/Shah Alam/ Klang corridor where the current rail network is inadequate. The Kelana Jaya and Ampang LRT lines only serve the northeast and the southwest quadrants (**Figure 2-3, 2-4**). The northwest and southeast quadrants are not served by urban rail lines. The entire corridor leading to Putrajaya is also rapidly growing but with inadequate public transport.

The newly proposed SSP Line will therefore close some of the key gaps in the rail network, which are the northwest-southeast corridor serving the city centre and Sg Buloh, Kepong, proposed Bandar Malaysia and Serdang areas.

2.2.2 Insufficient Connectivity

A good public transport network requires a number of high quality interchanges between modes and lines and this is evident in the planning of all world class city public transport systems. KL's current rail network has only 8 interchange stations which make transfers from one line or mode to another difficult. Without sufficient interchange stations, each line or mode operates as a stand-alone system. The present transportation network offers poor intra-modal and inter-modal integration between the various public transport modes (i.e. lack of good interchange between lines and also bus service).

In terms of transportation hubs, at present, the only truly integrated rail transport hub is KL Sentral but as demand increases in future, KL Sentral will no longer be able to function efficiently as a single transport hub due to inadequate capacity. Additionally, KL Sentral is planned as a transit-oriented development with a mixed development of hotels, office towers, condominiums and shopping malls and is expected to be fully completed in 2015. The existing roads around the KL Sentral area are already congested and the projected increase of travel will further reduce the capacity of the surrounding road network.

The proposed SSP Line takes into account connectivity with other rail modes including the SBK Line, the LRT Ampang and Kelana Jaya lines and the KTM Komuter. It also connects to future major transportation projects such as the High Speed Rail (HSR) and the future MRT Line.

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2.3 GREATER KL/ KLANG VALLEY PUBLIC TRANSPORT MASTER PLAN

Recognizing these problems, the Greater KL/ Klang Valley Public Transport Master Plan (GKL/KV PTMP) calls for public transport, both in terms of coverage and modal share to be significantly increased. The main thrusts of the Master Plan are improving accessibility to public transport, serving new growth areas and providing better connection to established areas.

2.3.1 Improving Accessibility To Public Transport

At present, accessibility to public transport decreases as it moves away from the city, particularly to the north, north-west, east and south of Kuala Lumpur (**Figure 2-4**). Large areas in the northwest, south and southeast have poor access to public transport.

It is to be noted that once operational, the SBK Line will improve the accessibility to suburb areas to the northwest and west (Sg Buloh, Kota Damansara, Mutiara Damansara, Bandar Utama, TTDI) and southeast (Cheras and Kajang) of Kuala Lumpur. The proposed SSP Line, on the other hand, will provide better accessibility for areas to the north (Sri Damansara/Kepong), east (Ampang/Cheras) and south (Seri Kembangan/ Serdang/ Putrajaya) of Kuala Lumpur.

2.3.2 Serving New Growth Areas and Better Connection to Established Areas

New growth areas are experiencing increasing population and significant growth as a result of new developments and change in land use where future travel demands are expected to be high. The GKL/KV PTMP assessed future travel demands to take into account travel demands from changes in land use and increase in car usage. **Figure 2-3** shows large radial movement towards the central area of Kuala Lumpur where demand for all modes crossing MRR1 for 2030 shows strong flows in all the corridors. The demand is highest along the Petaling Jaya/Shah Alam/ Klang corridor.

Without improvement in public transport and mode shift to public transport, the net result of the growth in travel demands arising from land use changes will further increase the car usage which will lead to traffic congestion as a result of higher car usage.

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2.3.3 Proposed Rail Enhancements

The GKL/KV PTMP has proposed the several enhancements to the railway services in the Klang Valley :

- Upgrading existing KTM Komuter services to 'metro' style services with a targeted headway of 5 minutes to provide greater capacity on radial corridors into KL city centre
- New freight relief line to divert freight trains to Port Klang away from the KTM KL Sentral-Klang branch in order to allow greater capacity for KTM Komuter service
- New LRT line to cater for local demands between Kelana Jaya and Klang via Shah Alam
- Extension of KL Monorail
- A new MRT line to serve the northwest – southeast corridors (SSP Line - this Project)
- A new MRT circle line

This project (SSP Line), together with the SBK Line (under construction) and the Circle Line (future) is a crucial component of the overall KL/ Klang Valley public transport masterplan.

2.4 THE ROLE AND BENEFITS OF KLANG VALLEY MRT

To achieve a significant and sustainable modal shift in Kuala Lumpur over the medium to long-term, a considerable investment in public transport is required. Bus improvements alone would not be enough. A comprehensive network must be planned in totality. The rail system should form the backbone of a hierarchical transit network, fully integrated with the bus system to adequately provide seamless journey. A rail system should be the backbone simply because it is the most efficient transport mode in terms of throughput efficiency. Thus, a transformation of public transport with rail as the preferred mode of transport is needed because it is convenient and reliable, saves time, pleasant to use and affordable.

For the nation, investment in sustainable rail transport will create an economically efficient urban environment; positively impacting productivity and social equality and quality of life in the cities. The benefits are travel time savings for passengers, reduction in vehicle operating costs and reduction in accident costs (because rail is much safer than road). The reduction in vehicle emissions caused by shift from road to rail will be substantial and can help in mitigating the effects of climate change. In addition to these, numerous benefits such as economic growth, job creation, other multiplier effects and tax revenues to Government would accrue during the construction period.

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The KVMRT (SBK & SSP Lines as well as the future Circle Line) is expected to form the backbone to the Klang Valley public transport system. As the KVMRT will traverse high density areas such as Sg Buloh, Kepong, Ampang, Cheras, Serdang and Kajang, it will provide a much needed service to these areas, serving hundreds of thousands of people.

The GKL/KV PTMP envisages that the SSP Line could:

- Improve rail accessibility to the eastern section of Kuala Lumpur city centre
- Provide additional capacity to the radial corridors along the northwest direction (identified as transit gap) to relieve overcrowding on the KTM Komuter and other city centre bound rail lines
- Support existing and future major developments such as KLCC, Kampong Bharu Redevelopment, Tun Razak Exchange and Bandar Malaysia.

The SSP Line is expected to carry over 500,000 passengers per day when it begins operations and this number is expected to increase to more than 1.1 million per day by 2050. With the added connectivity and interchanges with other public transport systems (LRT, KTM, monorail and BRT), the KVMRT will play a major role in realizing the goals of the GKL/KV PTMP.

The major benefit arising from the MRT project is the significant savings in travel time. The benefit is a measure of the change in road user cost, due to time savings for the users who remain on the same mode and road users who divert from road to rail as a result of the implementation of the project. On a broader scale, community benefits will also be realised through reduced road traffic congestion, improved traffic operations at some intersections and avoiding the need to pay for expensive road works that would otherwise be required. It is estimated that the travel time savings from the KVMRT is valued at more than RM 7 billion/year in 2020, rising to over RM 20 billion/year in 2050.

Other benefits include :

- (a) **Vehicle operating costs**
By reducing the number of vehicles that use the road system (via modal shift to rail), the community benefits through a reduction in private vehicle operating costs. Road user vehicle operating costs are a function of the length of a journey, traffic volume, vehicle speed, road condition and characteristics. The Feasibility Study for the MRT Lines estimated that the vehicle operating cost savings could range from RM 100 million/year in 2020 to RM 300 million/year in 2050.
- (b) **Accident Reduction Savings**
The projected reduction in road traffic volumes will result in a decline in the number of accidents due to a reduction in the total number of vehicle kilometres that are travelled each year.

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(c) Noise Reduction

The projected reduction in road traffic volumes can be expected to result in a decline in noise pollution due to a reduction in the total number of vehicle kilometres that are travelled each year.

(d) Improvements to Local Air Quality

Air quality is becoming more of a prominent issue, primarily because of concerns relating to human health. In recent decades in Malaysia, transport atmospheric emissions, on a national basis, have grown to match or exceed other sources in respect of many pollutants, particularly in urban areas. The reduction in road traffic volumes can be expected to result in an improvement to local air quality due to a reduction vehicle emissions (based on total number of vehicle kilometres travelled) each year.

(e) Greenhouse Gases Emission Reduction Savings

High levels of vehicle emissions are associated with Kuala Lumpur's congested and stopstart road conditions. Improvements in the flow of traffic such that excess breaking and acceleration is minimised will reduce vehicle emissions level. More importantly, the new rail lines will ultimately divert a percentage of users away from road based travel to rail, thereby reducing the number of vehicle trips being generated, leading to lower overall emission levels.

2.5 NATIONAL ECONOMIC TRANSFORMATION PROGRAMME

The Economic Transformation Programme (ETP) is a major effort by the Malaysian Government to transform Malaysia into a high-income nation by 2020. It aims to lift Malaysia's Gross National Income (GNI) per capita from USD6,700 or RM23,700 in 2009 to more than USD15,000 or RM48,000 in 2020, propelling the nation to the level of other high-income nations. This GNI growth of 6 percent per annum will allow Malaysia to achieve the targets set under Vision 2020.

Successful implementation of the ETP will see Malaysia's economy undergo significant changes to resemble other developed nations. The nation will continue to shift towards a service-based economy, with the services sector contribution growing from 58 percent to 65 percent in the same period. More than 3.3 million new jobs are expected to be created by 2020, spread across the country in urban and rural areas.

There are 12 National Key Economic Areas (NKEAs) at the core of the ETP. A NKEA is defined as a driver of economic activity that has the potential to directly and materially contribute a quantifiable amount of economic growth to the Malaysian economy. The Greater KL/Klang Valley is one of the NKEAs. The Greater KL/Klang Valley contributes about 37% of the nation Gross Domestic Product. Recent census data (2010) indicate significant increase of population within this region, increasing from 4.6 million people in 2000 to 6.3 million in 2010.

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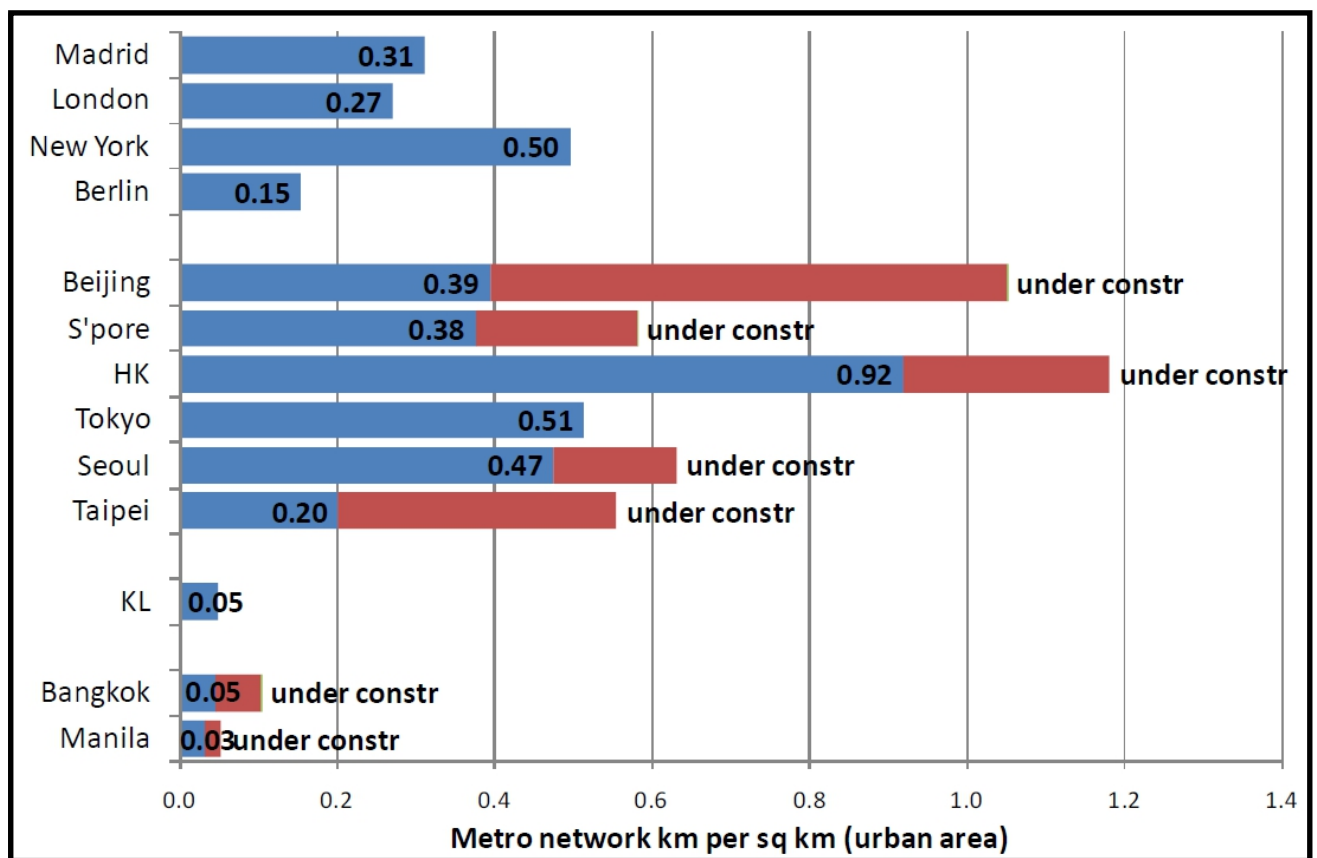
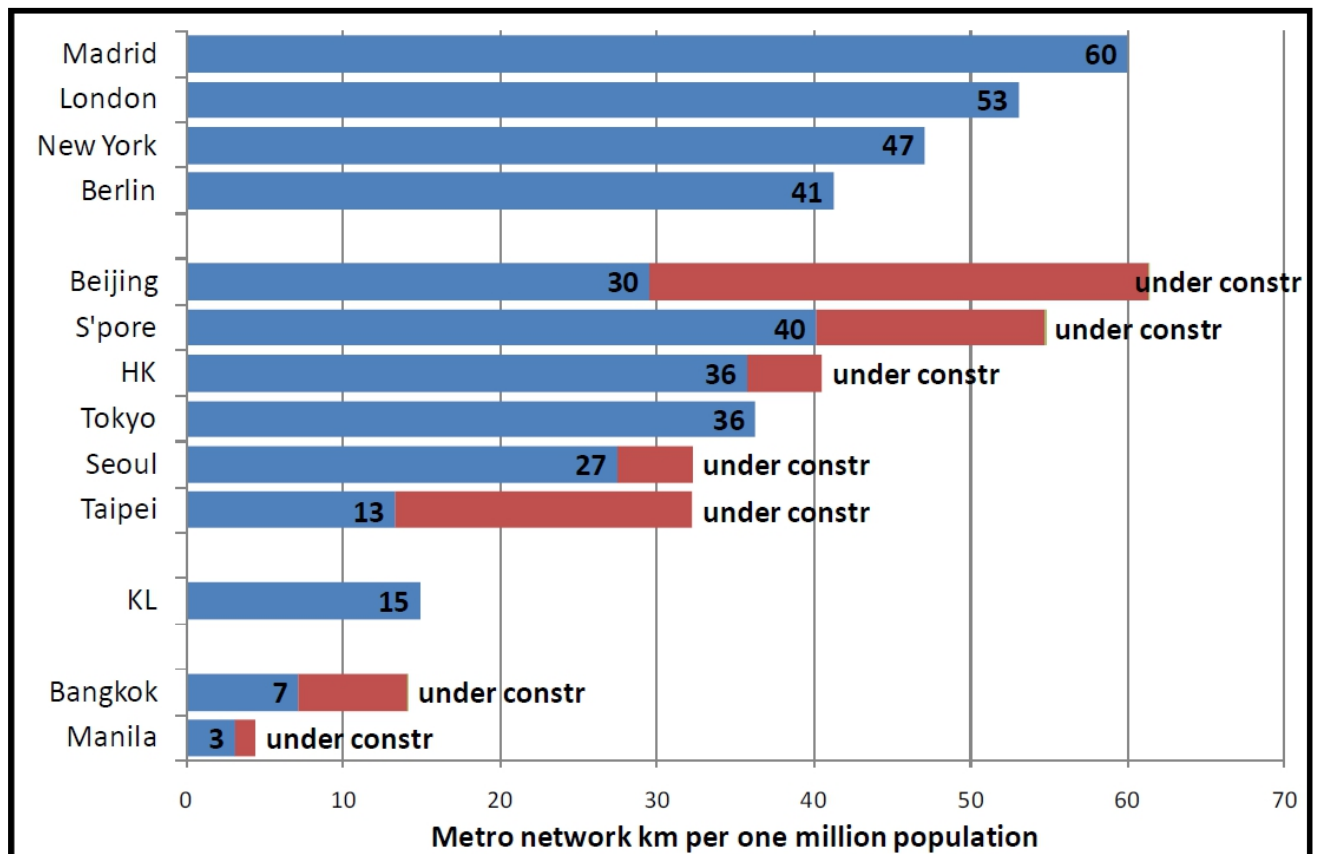
The Greater KL/KV NKEA's vision can be summarised as 20-20 by 2020—that is, to be a city that simultaneously achieves a top-20 ranking in city economic growth (as defined by city GDP growth rates) while being among the global top-20 most liveable cities by 2020. The ETP aims to grow the Greater KL's GNI contribution from approximately RM258 billion to RM650 billion per year. Growth in Greater KL/KV economic activities will increase total employment from 2.5 million in 2010 to 4.2 million by 2020.

The KVMRT is one of the main Entry Point Project for the Greater Kuala Lumpur initiative. The KVMRT is integral to the success of the Greater Kuala Lumpur/Klang Valley NKEA, which in turn is a key catalyst for the ETP overall. Connectivity to transportation hubs and connectivity within the area is critical for urban growth and improved productivity. This new means of travel will alleviate congestion and increase accessibility to, from and also within the city. Most importantly it will contribute directly to the nation's Gross National Income aspirations.

The SSP Line, together with the SBK Line (under construction) and the Circle Line (future) are vital to help the nation realise the aspirations of the Economic Transformation Programme.

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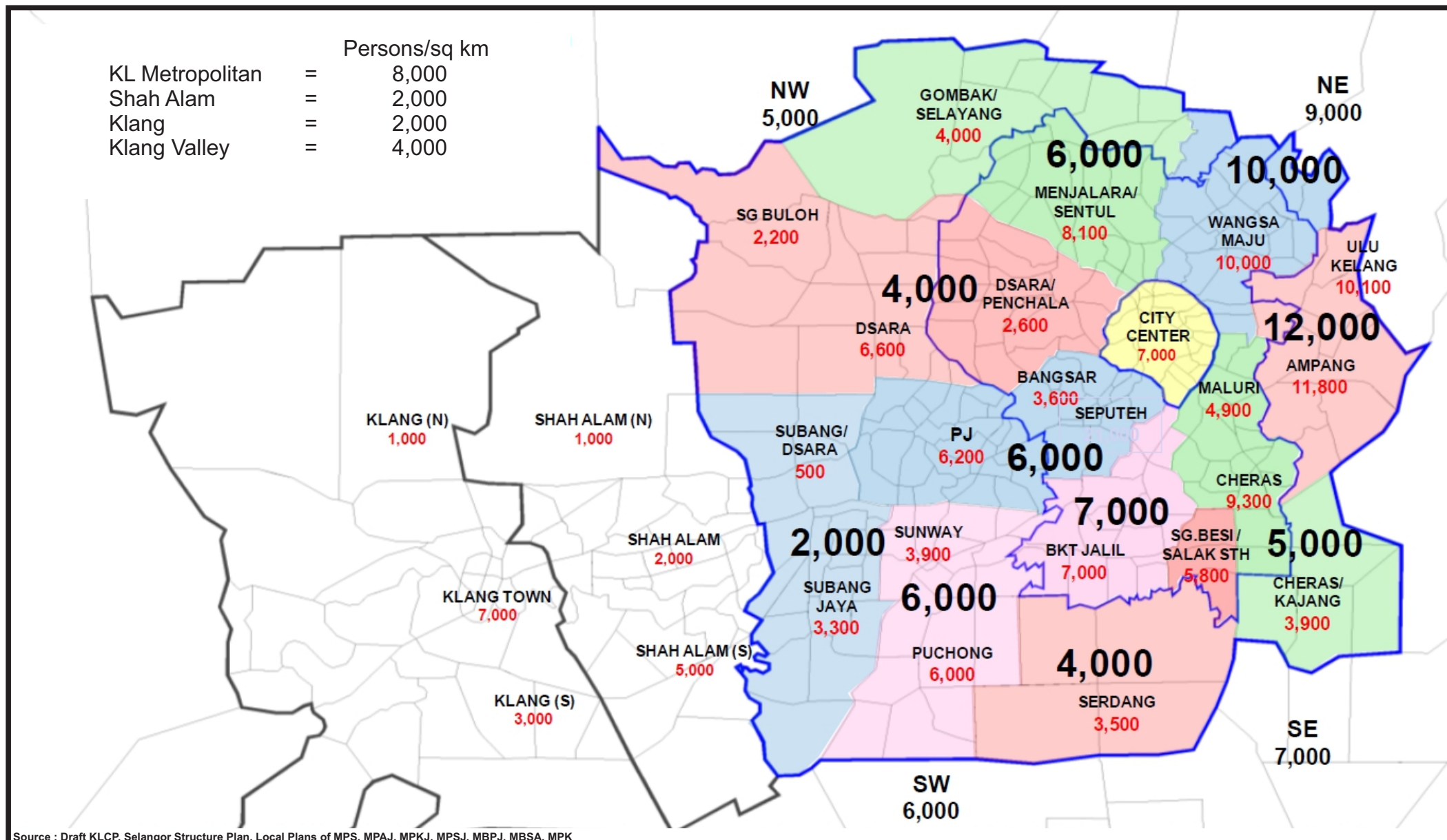


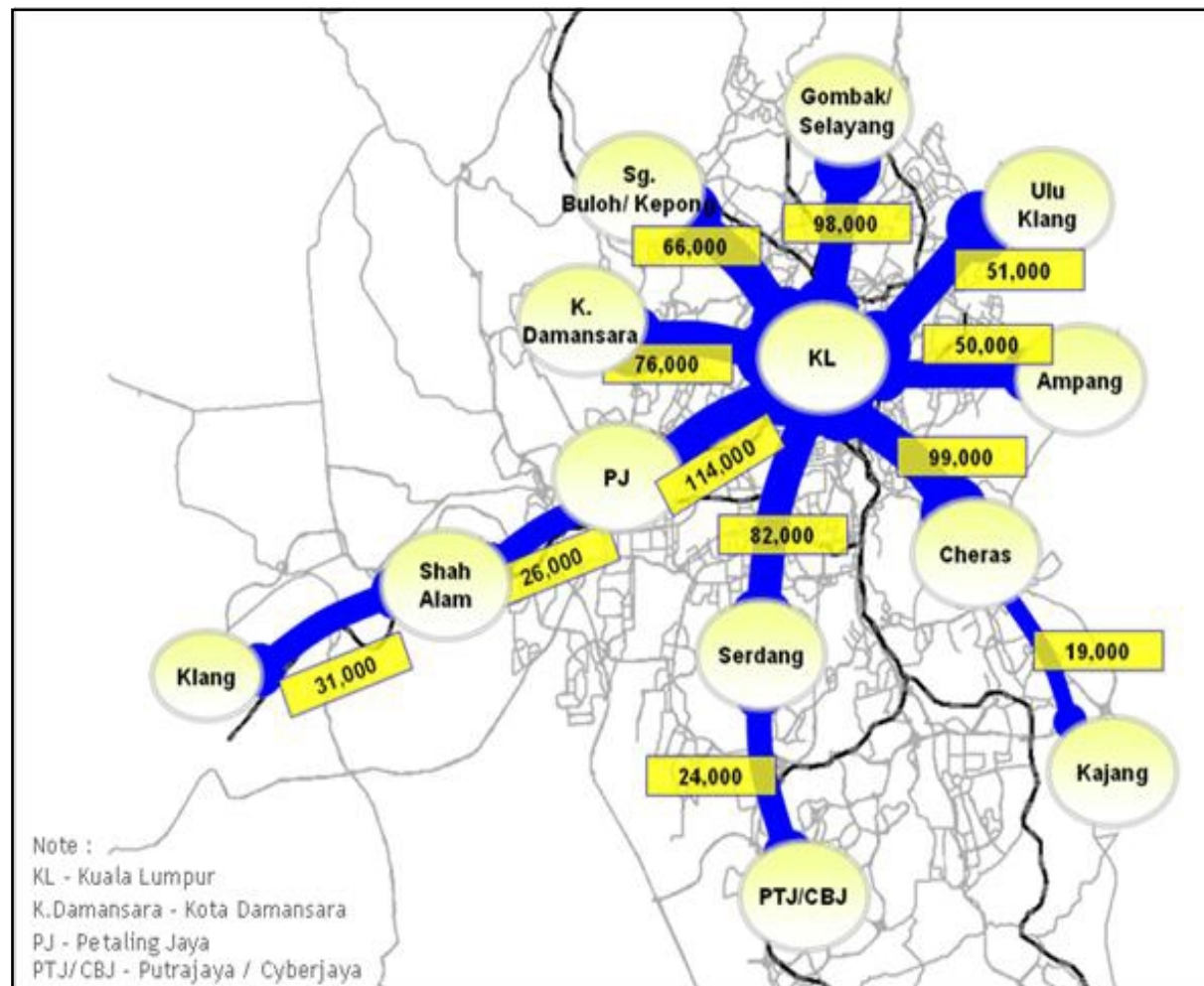
Source : KV MRT, Alignment Planning Report, AECOM 2010



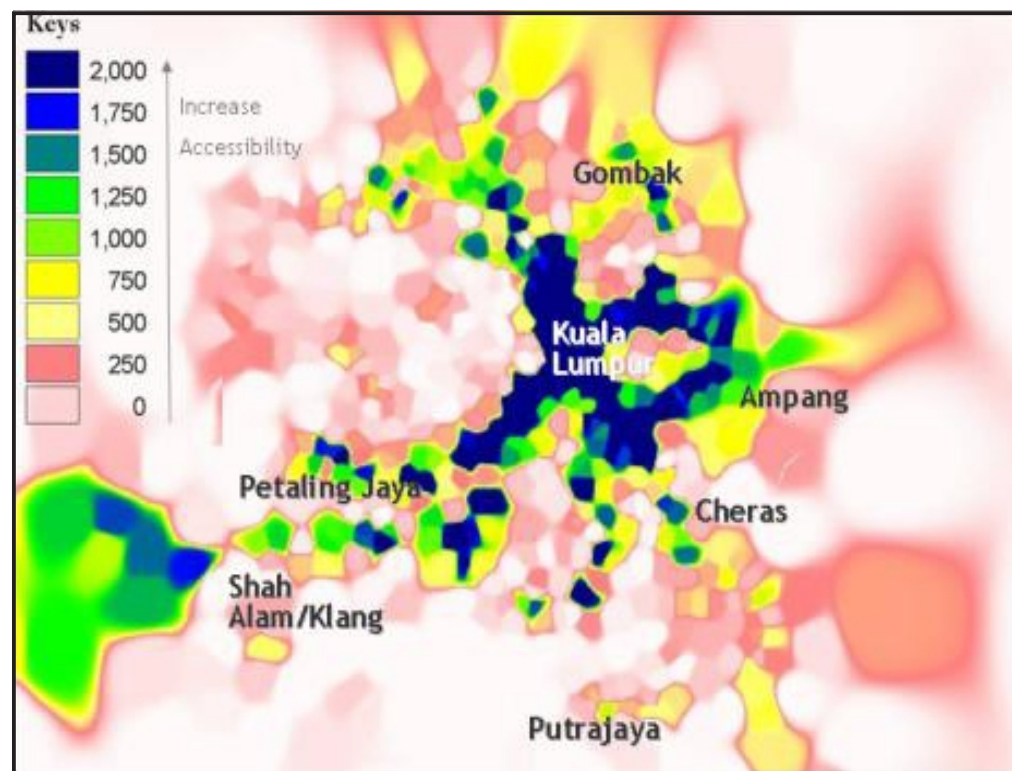
Figure 2-1

Population and Density Comparison of Metro Network





Source : Greater KL/Klang Valley Public Transport Master Plan



Source : Greater KL/Klang Valley Public Transport Master Plan