

FACTORS IN LAYING THE TRACKS

What LRT users want

1. Frequency of trains
2. Comfort of trains
3. Reliability of service
4. Fare
5. Accessibility to stations
6. Real time information (e.g. when is next train coming, frequency)
7. Park and ride facilities
8. Parking charges



Ridership factors

- Population density
- Preferred transportation mode
- Commuters' priorities
- Demographic patterns: age groups, income levels



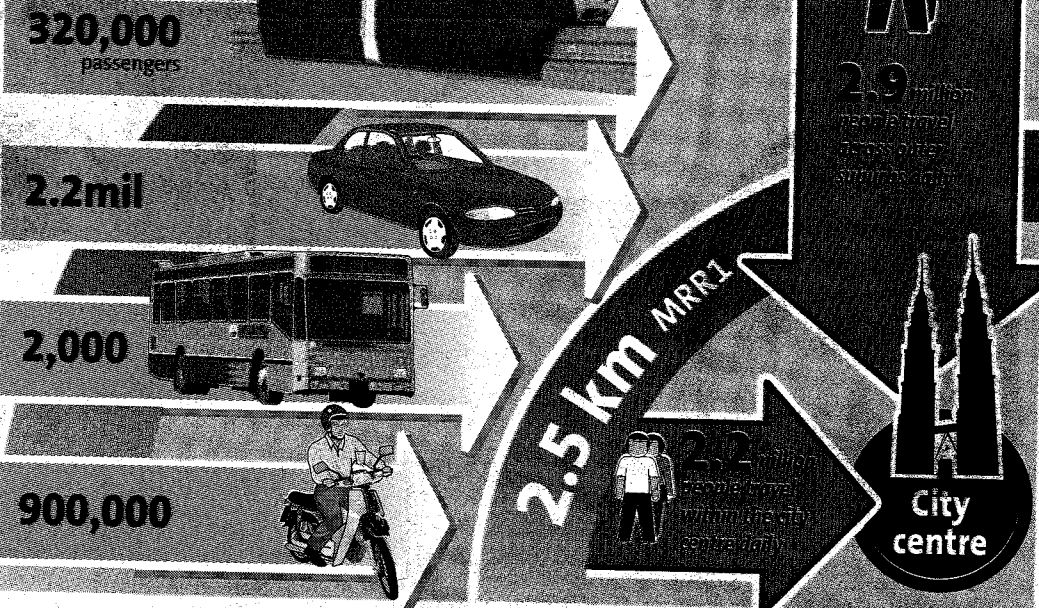
Technical considerations

- Alignment, i.e. the routing
- Equilibrium speed of train
- Journey time
- Viability of the alignment
- Environment
- Land availability
- Construction cost

Total LRT commuters daily

Putra line	170,000
Star line	150,000

Daily traffic flow into the city



Putting the best route forward

Since the Government's announcement of a RM10bil allocation to upgrade the Klang Valley transport system, various 'experts' have offered unsolicited advice. But according to the man in charge, the final route will be well plotted, writes Suhaini Aznam.

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FOLLOWING the crow's direct flight path, urban commuters have found that their fastest way into the city is by light rapid transit (LRT). Speeding over traffic snarls on the highway, a total of 320,000 commuters take the line daily, most of them professionals and students.

The LRT and the monorail are the future. Congested Penang was recently allocated RM2.8bil for a second bridge and RM1.2bil for a light monorail system.

Of the RM10bil allocated to the Klang Valley under Budget 2007, RM7bil will be spent on extending existing lines to capture densely populated housing enclaves. The Kelana Jaya line will reach out to Subang Jaya and USJ; the Sri Petaling line to Puchong.

In addition, Syarikat Prasarana Nasional Bhd (SPNB) has also been tasked with building a totally new line to Kota Damansara.

The routes are still on the drawing board. SPNB currently has 13 options for the Kelana Jaya line and 12 options for the Sri Petaling line. A finalised blueprint will only be out in October.

The Government's rationale is to draw at least 40% of the Klang Valley's 4.7 million population to take public transport, putting it on par with other cities. Today, only 11% do, leading to Kuala Lumpur's infamous inner city traffic jams.

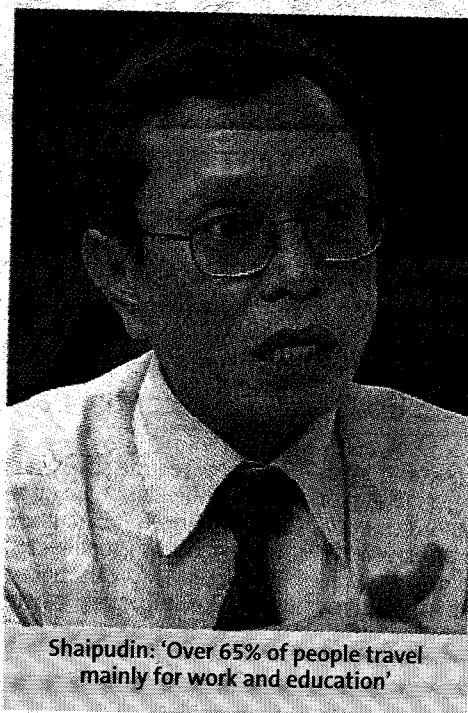
SPNB has initiated a very extensive ridership study, covering demographics, people's priorities in public transport and a slew of technical factors.

"Our consultants sent out thousands of postcards to households in various areas to discover family size, number of vehicles owned, household incomes, occupations, points of origin and destinations, what is top-most in your mind when you want to travel," said SPNB CEO Shaipuddin Shah Harun.

The raw data collated from surveys, journey simulations and traffic counts was an eye-opener: 65% of people travel mainly for work and an education.

"This was very important in designing your line," said Shaipudin. "Only 13% use it to go shopping per se."

To his surprise, pricing was not a large fac-



Shaipudin: 'Over 65% of people travel mainly for work and education'

tor in customer preferences (see chart). Service issues were.

"I think people are willing to pay so long as the service is to their satisfaction," said Shaipudin.

The demographics revealed that 77% of the Klang Valley population earned between RM1,000 and RM4,000. The rest made above RM4,000, making the LRT affordable.

The consultants also did real time examinations: simulating bus journeys from USJ to Lot 10 took 2.5 hours maximum, regardless of the bus service; by car it took roughly an hour, both through and bypassing the toll.

"So there is a need for people to get into something more efficient," noted Shaipudin.

Traffic counts along the perimeter of the city revealed that "only 40% of LRT commuters were male, probably because part of the male population ride bikes."

"The bikers appear to be a bit resilient to change. Cheap to maintain (and) low in fuel consumption, we don't think the 900,000

motorbikes will disappear overnight."

"As a rule of thumb, we think that people don't want to travel longer than 30 minutes on the train to town," said Shaipudin. The travel time on the extended lines would add between 15 to 20 minutes, depending on the chosen route.

As to noise pollution, residential areas, schools and places of worship influence system options.

"Some trains are almost noiseless, such as the maglev (magnetic levitation) where there is no contact at all."

"Sometimes if you build the guideway (to support the) rail over the road, it has a kind of tunnelling effect or a roofing effect on the sound of the traffic below. Without the guideway, the sound could dissipate up to the sky," explained Shaipudin.

"Whereas the guideway "would amplify and divert the traffic sound sideways so the neighbours along the alignment would have more noise to contend with."

Rivers were avoided as much as possible. "And you don't put a pier right in the middle of the river because it could cause floods upstream. There could be a backwash, like the effect of a (partial) dam."

Soil conditions were another factor. The types of subterranean materials in the proposed areas under study showed up granite, quartz and limestone.

"In the Subang-USJ areas, the whole stretch is granite," he said.

SPNB will also try to avoid building through tunnels as it could double or treble construction costs.

"Passing through private land would mean having to buy over houses and resettle people and squatters," said Shaipudin.

Building along existing highways was thus the preferred option.

Technology today is so advanced, it can really minimise disruption to traffic and movement of people without disturbing the foundations of existing highways, said Shaipudin. The only catch is the price.

SPNB is buying up to 140 train coaches for the heavily congested Kelana Jaya line, "running in a mix of two-cars and four-cars,

depending on travel patterns and demand," explained Shaipudin. For this, an actual count of people boarding and alighting was done at each station.

The Star line, with 180 coaches, today has ample room to take in more people. It serves 150,000 commuters daily, while the former Putra line has only 70 coaches serving 170,000 passengers daily.

SPNB is also budgeting for 140 coaches for the Kota Damansara line, which it aims to make "as easily integrated as possible with existing lines" in terms of rail gauge. The link-up point, however, is still unknown.

"The guiding principle is it should be integrated with an existing (station). It should not be on a stand-alone basis. It should make full use of existing infrastructure.

"In Sentral, for example, there may not be any more space for us to come in. The line is finite.

"And Jamek is already quite congested with the Star and Putra lines coming together.

The Jamek station is peculiar in that despite the intersecting lines, there is no common station.

Urban transport is a total concept; SPNB has ordered 1,130 new buses. Special bus lanes would be an enticement but these are difficult to designate along Kuala Lumpur's older roads.

As bidding for tenders picks up, Shaipudin is "fully supportive of local content" while being "very pragmatic" about foreign expertise. Local companies were more than competent to do civil works but "nobody makes trains yet in this country to that level of sophistication. Expectations are higher and safety (standards) as well."

Viability, global competition, returns on investment and economies of scale, were all important considerations, he cautioned.

"Half of our new fleet are from China. Good price and fast delivery."

Malaysian companies could deliver "parts of the train, maybe: the flooring, the seating, handrails. But the power trains, the wheel sets, the electronics... for the train management system, I wouldn't want to risk people's lives."