

Rail Transportation in Kuala Lumpur

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Introduction

Kuala Lumpur (KL), the capital of Malaysia, has an area of 243 km² with a population of 1.4 million and a total current employment of 838,000. It is the centre of Malaysia's economic activity with 12.4% of total GDP. KL is situated within a larger economic zone known as the Klang Valley, spanning an area of 2843 km². Vehicle ownership in Malaysia has passed 10 million vehicles with an estimated 2.5 million vehicles in the Klang Valley alone. With the rapid vehicle growth rate of 8% per annum, the government realized that uncontrolled urbanization and motorization would result in environmental deterioration and more traffic jams and accidents.

To meet these challenges, the government has embarked on major developments in land transport over the last 20 years. Although construction of highways and ring roads in and around the city has improved the traffic flow to some extent, the city centre is still plagued by morning and evening traffic jams. The urban bus transportation, which was based on minibuses, has been revamped by amalgamating bus operations into a few companies. The last 10 years have also seen development of new rail-based transport systems like KTM Komuter, the STAR LRT, the PUTRA LRT, and the Express Rail Link (ERL) for the new KL International Airport.

With the exception of KTM Komuter operated by Malaysian Railway (KTMB), the other urban railway systems were constructed according to a build-operate-transfer (BOT) formula where the private companies/consortiums signed concession agreements with the government to build the railway systems and operate them for some period. At the end of 2002, KTM Komuter, STAR, PUTRA and ERL had 266 km of railways in the Klang Valley. This will

be increased by 8.6 km when the KL Monorail is completed in August 2003.

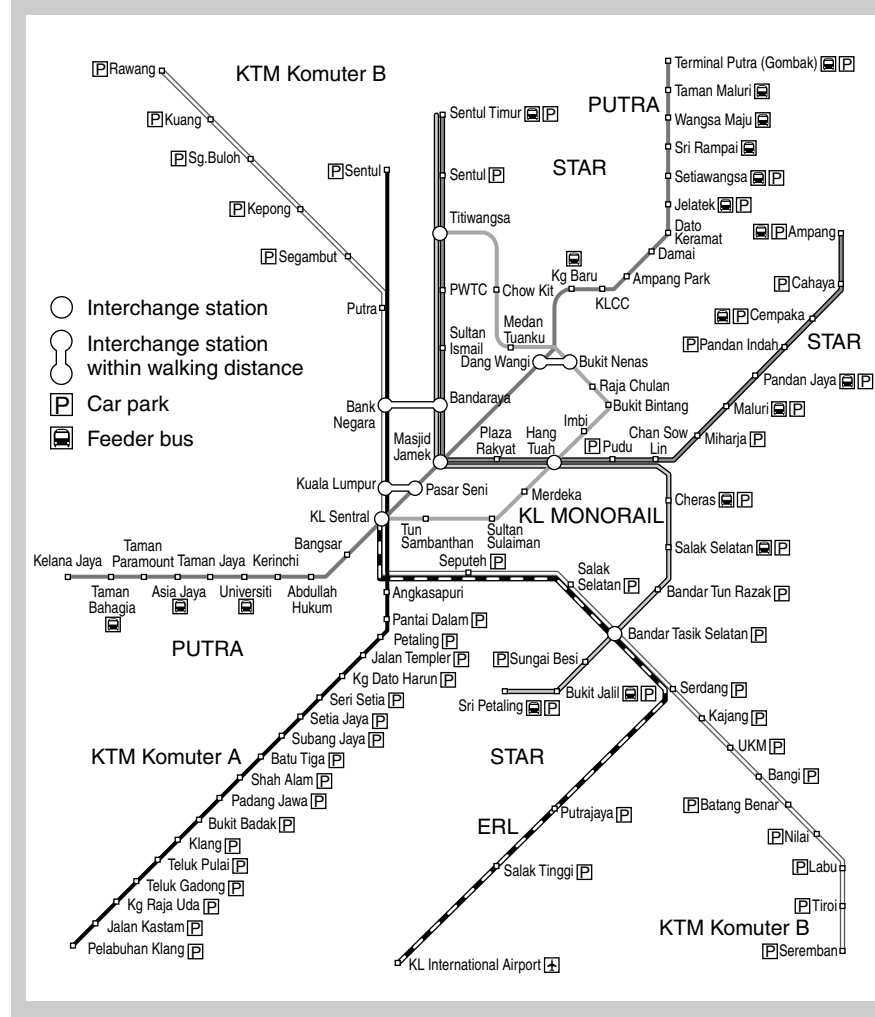
KTM Komuter

KTM Komuter started revenue services as the first electric rail service in Malaysia on 14 August 1995 between Kuala Lumpur and Rawang. The service was later expanded to cover 153 route-km of electrified double track between Rawang and Seremban, and Sentul and Port Klang (Pelabuhan Klang). The KTM Komuter

network has 40 stations including the new KL Sentral Station (Fig. 1). The electrification system consists of a 25-kVac catenary with six substations drawing power from Tenaga Nasional Berhad, the national power company.

The meter-gauge track with multiple aspect signalling allows trains to run at up to 120 km/h. KTM Komuter uses three-car electric multiple units (EMUs) from three different suppliers—Jenbacher Transportation System (18 sets), Marubeni Corporation (22 sets) and Union Carriage and Wagons (22 sets). The EMUs have

Figure 1 Kuala Lumpur Rail Transit System



the automatic train protection (ATP) system, which monitors the train speed and applies the brakes automatically if the driver fails to respond. This safety feature permits one-man operation, which had never been used before in Malaysia.

KTM Komuter's 215 daily services start at 05:30 and stop at 24:00. Services run at a headway of 15 minutes during the morning rush from 05:30 to 09:30, and this frequency is also maintained during the evening peak from 15:30 to 20:00. The service frequency is reduced to one train every 30 minutes at other times.

To ensure efficient ticketing, KTM Komuter uses an automatic fare collection (AFC) system with ticket vending machines (TVMs), automatic gates and magnetic-strip tickets. Although the AFC system has a closed-system design, KTM Komuter faces some problems, especially where the railway fences have been breached by villagers for illegal crossing of tracks. To control fare evaders, KTM Komuter employs roving ticket inspectors to make spot ticket checks.

At present, KTM Komuter carries about 64,000 passengers daily, 61% of whom are young people between 19 and 29. It is also carrying increasingly more white-collar passengers than when it started. KL Sentral, Kuala Lumpur, Subang Jaya, Bank Negara, Serdang, Seremban, and Kajang stations have high ridership because they are either in densely populated residential areas or are situated close to government offices or commercial buildings. KL Sentral is the biggest connecting station where passengers can transfer between LRT, ERL and intercity trains.

Although located 73 km from KL, Seremban Station collects high revenues because it serves many commuters. Property in and around Seremban is cheaper than in KL and its suburb, so some people are willing to spend more

time commuting to enjoy the advantages of larger houses. This trend is expected to continue with more property development occurring further from the city but closer to commuter lines. A similar phenomena will probably occur in the north when commuter services are extended to Tanjung Malim.

To cater for long-distance commuters, KTM Komuter operates two express services in the morning from Seremban to KL, and two express services from KL back to Seremban in the evening. They make only three stops, reducing the journey time from 1 hour 15 minutes to exactly 1 hour.

To increase peak capacity, especially over the section between Sentul and Port Klang, two three-car sets are coupled together to form a six-car set with only one driver. Three six-car services run during the morning and evening peak hours.

KTM Komuter caters for various travel requirements with various types of tickets. In addition to the normal single and return tickets, regular users can buy 12- and 24-trip tickets at 20% discount. Regular travellers using a monthly season ticket enjoy a 33% discount. To encourage people to travel during off-peak times, the *Tiket Mana-Mana* pass entitles the holder to unlimited travel anywhere on the network on any weekday after 09:00. It costs just MYR6.00 (MYR1.00 = US\$0.26). A similar *Tiket Kembara* day pass for weekends and public holidays costs MYR10.00. It is more expensive than the weekday pass because many people use KTM Komuter at weekends for leisure, shopping, visiting friends and returning to their hometowns. In line with the government intention to create common ticketing, KTM Komuter will be installing contactless *Touch'n Go* smart card readers in 2003, giving passengers the choice of using a normal KTM Komuter ticket or a prepaid contactless *Touch'n*

Go smart card that is also accepted by the STAR and PUTRA LRTs, buses and toll highways.

Commuter services have affected property development around commuter stations. When commuter services first started, most stations could only be accessed from one side. However, development of housing estates and commercial properties around stations has required the opening of second access points. The need for better access and links with bus stops and other transport modes like taxis has required construction of covered walkways, etc. Popular stations like Seremban, Kajang, Serdang and Sungai Buloh also need larger car parks.

Property development near commuter lines has created new markets. KTMB identified a few locations such as Mid Valley, Sri Damansara and Seremban Two for construction of new stations to meet increasing demand. The most attractive site is at Mid Valley where there is a mega-shopping complex as well as a hotel, offices, and condominiums. This new station is expected to be completed in mid-2004. Currently, KTMB is constructing an electrified double track between Rawang and Ipoh. When completed in 2005, services will run 55 km further north to Tanjung Malim with five additional stations from Rawang. This project will also include rapid train services with new train sets between KL Sentral and Ipoh. Another big project in the pipeline that should be completed in 2006 is the double-tracking and electrification of a 7.2-km extension from Sentul to Batu Caves, passing through new stations at Batu Kentonmen, Kg. Batu and Taman Wahyu. The extension will serve a new Sentul Station that will be built for the joint-venture Sentul Raya property development on the site of a former railway central workshop.



KTM Komuter train passing Kuala Lumpur Station

(KTMB)



EMU sets from Union Carriage and Wagons

(KTMB)

Light Rail Transit

KL has two light rail transit (LRT) systems—the STAR LRT and the PUTRA LRT. The STAR LRT system was established as a BOT project with a 60 year lease in November 1991. Revenue operations started on 16 December 1996 for phase 1 from Ampang to Sultan Ismail (12 km). The line from Pudu to Ampang runs mainly on an abandoned line formerly operated by KTMB. After KL was awarded the 1998 Commonwealth Games in 1994, the government decided to extend a line southwards to serve the National Sport Complex. As compensation for operating this low-density extension, STAR received approval for a 3-km extension northwards from Sultan Ismail to Sentul Timur into a high-density residential area.

The southern extension (phase 2) between Chan Sow Lin and Sri Petaling was completed 2 months before the Commonwealth Games and KL took pride in the smooth transport services provided by the STAR LRT and KTM Komuter to thousands of spectators. The northern extension was completed in December 1998, increasing the total route length to 27 km.

Originally, each STAR LRT train consisted of three single-articulated, two-section carriages with a motorized bogie at each end and a trailer bogie under the

articulation. The two end carriages each had a driver's cab and were semi-permanently coupled back-to-back to the intermediate carriage to form a three-car set. The trains are now configured with four and six cars.

The STAR LRT uses a 750-Vdc third rail electrification system. The signalling is based on trackside signalling backed up by an ATP system. The AFC system uses magnetic-stripe technology with station gates. Passengers can buy tickets either from TVMs or at ticket counters. The STAR LRT trains start at 06:00 and stop at 24:00. The service frequency ranges from one train every 3 minutes during peak hours to one train every 10 minutes at other times. The capacity is 33,200 passengers in each direction per hour. Currently, the STAR LRT carries about 92,000 passenger each day. The PUTRA LRT was established on 15 February 1994 with a 60-year concession to design construct and operate a 29-km LRT from Subang Depot via KL Sentral to PUTRA terminal at Taman Melati. The mostly elevated route runs through many high-density residential and commercial areas on a dual-track guideway. It includes a 4.4-km tunnel and 2.2 km at grade. There are 18 elevated stations, five underground stations and one station at grade. It is considered to be the world's largest, fully automatic driverless system using linear induction motors.

Revenue operation began on 1 September 1998 with a headway of 5

minutes during peak hours. Services run between 06:00 to 24:00. The morning peak is between 07:00 and 09:00 and the evening peak is between 16:00 and 18:00. Initially, the capacity was 10,000 passengers in each direction per hour using 35 two-car trains. Today, the service frequency is between 2.9 and 3.3 minutes during peak hours and between 5 and 10 minutes at other times.

The system is fully automatic with driverless trains supervised by the control centre in Lembah Subang Depot. This is achieved by using an automatic train control (ATC) system. The electric power is supplied from the national grid to substations providing 750 Vdc for traction and 240/415 Vac to station facilities. The power supply and distribution system is remotely controlled and monitored by the Supervisory Control And Data Acquisition System (SCADA).

Since the PUTRA LRT is fully automated, it has various safety systems. The ATC system uses fail-safe and redundant computers, and incorporates ATP subsystems in software.

The PUTRA LRT's AFC system uses magnetic-stripe tickets as well as contactless *Touch'n Go* smart cards. A monthly season ticket costs MYR70.00 and allows the holder 1 month of unlimited travel on the network. Magnetic stored-fare (SF) cards can be purchased from TVMs or at ticket

counters but monthly season tickets can only be purchased from ticket counters. Today, the PUTRA LRT carries about 150,000 passengers each day but the steadily increasing passenger volume requires more frequent or longer trains. Stations on the PUTRA LRT are serviced by PUTRALine flat fare (MYR0.50) feeder buses. The first operations began with a fleet of 90 buses providing services in a 3-km radius at intervals of 15 minutes during peak hours and 20 minutes at other times.

After some years of operation, both the STAR LRT and the PUTRA LRT faced serious financial difficulties in servicing loans related to construction of infrastructure and purchase of rolling stock. The government restructured both companies in September 2002. They now operate as the STARline and PUTRALine under a company responsible for managing critical public infrastructure.

Express Rail Link

Kuala Lumpur International Airport (KLIA) was built as a major hub airport for SE Asia like the airports in Singapore and Bangkok. Since it is about 57 km south of KL, a rail link to the city centre was seen as essential for getting people to and from the airport quickly and the easy access was expected to enhance KL's reputation as an efficient commercial and financial hub.

The 57-km long ERL runs over double tracks electrified to 25 kVac along the entire alignment. There are passing tracks at intermediate stations to allow *KLIA Express* trains to pass *KLIA Transit* trains standing at stations. Since trains run at speeds up to 160 km/h, the track is standard gauge (1435 mm) instead of the meter gauge used elsewhere on the KTMB network.

The ERL was constructed under a 30-year

design, finance, construct, manage, operate and maintain concession. The engineering, procurement and construction contract was awarded to the SYZ Consortium—a joint venture between Siemens AG of Germany, Siemens Electrical Engineering Sdn. Bhd. and Syarikat Pembinaan Yeoh Tiong Lay Sdn. Bhd. The total project cost MYR2.4 billion, financed by a combination of equity holdings and loans from a local financial institution as well as export credits from Germany.

Revenue service started on 14 April 2002 with *KLIA Express* non-stop high-speed services between Kuala Lumpur City Air Terminal (KL CAT) and KLIA. Trains depart from both terminals every 15 minutes from 05:00 to 01:00 with a journey time of 28 minutes. They have a seating capacity of 156 passengers per four-car train, and offer an ambience similar to business class on an airplane. Reservations are not required because the service is operated as a shuttle and the single fare is MYR35.00.

The *KLIA Transit* is a fast commuter service operating between both terminals with additional stops at Bandar Tasik Selatan, Putrajaya and Salak Tinggi. It runs every 30 minutes during peak hours and the journey time is 35 minutes. The trains can carry 540 people including standing passengers.

The train were built at the Siemens SGP plant in Vienna, Austria; eight sets are dedicated for the *KLIA Express*, while four sets are for the *KLIA Transit*.

The ERL uses automatic signalling and traffic management system with ATP. The *KLIA Express* has a semi-open ticketing system with gates at KL Sentral Station but not at KLIA. There is also a plan to install the contactless *Touch'n Go* smart card system too.

The *KLIA Express* offers baggage check-in for Malaysia Airlines, Cathay Pacific Airways and Royal Brunei Airlines at KL CAT in KL Sentral Station. Since sufficient

time is required to carry the baggage by train to the airport baggage handling system, *KLIA Express* operator insists that passengers must check-in at least 2 hours before their flight departure. The International Air Transport Association (IATA) has assigned the XKL code to KL CAT so baggage can be tagged to XKL from any disembarkation point if a passenger chooses to collect his or her bags at KL CAT. The checkout facility at KL CAT has yet to be implemented.

Today, the *KLIA Express* and *KLIA Transit* carry about 7000 passengers each day.

Monorail

The 8.6-km long KL Monorail links the recently opened KL Sentral Station (where it connects with the KTM Komuter and Intercity services, the PUTRA LRT, and the ERL), with Titiwangsa (where it connects with the STAR LRT). It also connects with the STAR and PUTRA LRTs at two intermediate stations en route. There are 9 stations between KL Sentral and Titiwangsa spaced at about 800 m in the central business district. The monorail is seen by many to be KL's missing transport link because it will connect with and complement the other urban transportation systems. Construction has been completed and the system is now being tested and commissioned with revenue service anticipated in August 2003.

The KL Monorail is a straddle system and the guideway runs mainly above the median of main roads in KL's central business district. Initially, the services will use 12 sets of two-car trains but each set can be increased to four or six cars by inclusion of intermediate cars. The maximum speed is 80 km/h with an acceleration rate of 1.1 m/s². The round trip time is 39 minutes assuming station standing times of 20 s and a 30-s turnaround at the terminus. Therefore,

the system can operate at a headway of 2.5 minutes. Each car has 24 seats and each two-car train can carry 107 people. To assure absolute safety, the driver-only trains are supervised by an ATP system at all times.

The stations are constructed mostly from lightweight materials making maximum use of precast concrete components and fabricated steel assembled off-site. With a platform length of 40 m, each station can accommodate trains of up to four cars in length. The 750-Vdc power for traction is drawn from the national power grid, transformed, rectified and supplied to power rails.

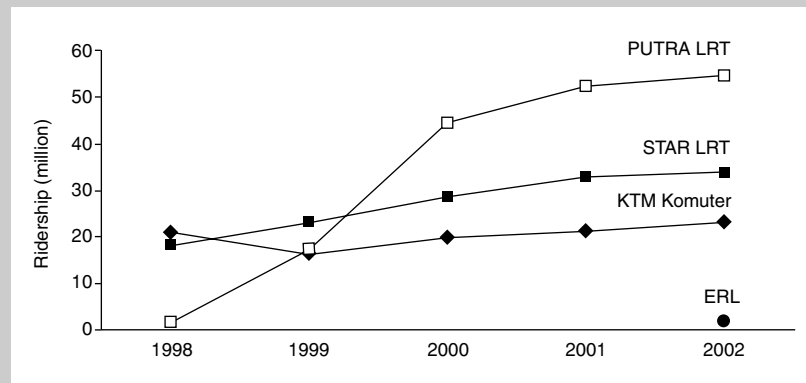
The signalling system uses bi-directional fixed blocks with both trackside and cab signals for extra safety. Like traditional LRT systems, the SCADA and associated systems are managed from an operation control room in an operations control centre.

The monorail route mainly serves major commercial areas such as Jalan Tuanku Abdul Rahman and Chow Kit as well as tourist areas like Bukit Bintang and main interchanges like KL Sentral. Since it has to pass through very developed and expensive areas, a monorail running over the median of public main roads was the most cost-effective construction choice. Another monorail is presently being designed for Putrajaya, the new government administration centre.

Integration

The opening of the KL Monorail in August 2003 will complete the first phase of the Integrated Kuala Lumpur Transit System (IKLTS) with a total of 98 stations, covering most of KL and its suburbs. Although some areas, like Bandar Damansara and major areas of Cheras and Bukit Jalil, are not covered, the network will form the basis for future extensions and station additions. Figure 2 shows the number of

Figure 2 Ridership of Kuala Lumpur Rail Transit Systems



passengers using the services during the past 5 years. Ridership seems likely to grow as standards of service and accessibility improve.

Since KL's rail networks are operated by different operators, integration is an important issue. Physical integration with good station transfers are very important for efficiency. Five stations in KL meet these requirements—KL Sentral, Masjid Jamek, Titiwangsa, Hang Tuah and Bandar Tasik Selatan. Other stations like Kuala Lumpur, Bank Negara and Dang Wangi are within walking distance of Pasar Seni, Bandaraya and Bukit Nenas stations, respectively.

KL Sentral is an excellent example of an integrated transport terminal. The station and facilities were developed based on a concession agreement between the government and concessionaire controlled by Malaysia Resources Corporation Berhad (MRCB). The station was designed as part of the overall KL Sentral master plan for redevelopment of the old KTMB marshalling yard at Brickfields—a 72-acre site running from Travers Bridge in the west to Istana Bridge in the east. The requirements of both individual rail operators and passengers was considered in the design. All three operators—KTMB, the PUTRA LRT and the ERL had specific passenger requirements. For example, KTMB's intercity travellers needed large waiting areas and sufficient space for luggage while PUTRA LRT's passengers needed

short and quick entries and exits whereas the ERL had to ensure that its passengers could enjoy facilities like those at an airport. The design solution was to give each operator its own concourse in order to assure enhanced passenger services. Apart from the station facilities, the station also houses the KTMB Railway Maintenance Depot for rolling stock cleaning, maintenance, and overhaul. Ultimately, the station will form part of the integrated KL Sentral development that will include offices, shops, hotels and condominiums. The station came into operation on 16 April 2001 and the whole development, especially the commercial component, is expected to be completed in 2012. The station has 12 platforms and 14 tracks (Table 1).

The Railway Maintenance Depot is located at ground level under the station building and has five tracks for marshalling carriages, five tracks for maintaining carriages, four tracks for maintaining locomotives, plus other infrastructure like a locomotive load test facility, administration building, etc. The station is managed under a 15-year concession agreement between the government and Semasa Sentral Sdn. Bhd., a subsidiary of MRCB. The main intent is to ensure that the integrity of the station and the Kuala Lumpur Sentral development is maintained.

Like KL Sentral, Bandar Tasek Selatan Station connects four railway services—KTM Komuter, *KLIA Express*, *KLIA Transit*

Table 1 Platforms and Tracks at KL Sentral Station

Operators		Platforms	Tracks
KTMB	Intercity	2	2
	Commuter	4	4
	Through tracks	-	2
PUTRA	LRT (elevated)	2	2
ERL	KLIA Express	2	2
	KLIA Transit	2	2

and the STAR LRT. It will also connect with a new interstate bus terminal that is to be built nearby. Although the connections are not in the same building, they are quite close to each. During the Commonwealth Games in 1998, Bandar Tasek Selatan was a very effective and busy transfer between KTM Komuter and STAR LRT services, connecting directly to the National Sport Complex. This phenomenon still continues during major events at the National Sport Complex like soccer matches and concerts. Completion of the Southern Sector Interstate Bus Complex will make the station even busier.

Masjid Jamek Station is an important interchange between the PUTRA and STAR LRTs, which are now under the same management and have introduced a monthly season ticket allowing the holder unlimited travel on both systems. However, good integration is not limited only to rail. KTM Komuter's Putra Station is a popular transfer between KTM Komuter and interstate express buses bound for the east coast departing from the Putra Bus Terminal.

KTM Komuter's Nilai Station has become a popular interchange for budget travellers going to or coming from KLIA who catch a bus from Nilai Station to KLIA or vice versa. Although the total train and bus fare is just MYR7.20, the trip takes about 1 hour 30 minutes. Nilai Station is also very busy during the Formula One racing season when it becomes an interchange point to the race track at Sepang International Circuit.

Since physical integration between various transport mode is important, all future construction of transport terminals

should give priority to easy transfers. In this regard, the government is planning to construct interstate bus terminals close to PUTRA LRT stations for east-coast buses and close to KTM Komuter stations for northbound buses.

But physical integration alone is not sufficient to make public transport an attractive choice for the public—passengers are now demanding seamless travel between different operators. Unfortunately, all bus and rail operators have adopted different ticketing systems, making it very expensive to modify the systems to create a fully integrated AFC system. To resolve this impasse, the government had decided to adopt a common ticketing system using the contactless *Touch'n Go* smart card system for KTM Komuter, STAR LRT, PUTRA LRT, ERL, KL Monorail, Park May Bus and Intrakota Bus. This contactless technology is also available in the new Malaysian Identity Card known as *Mykad*. A passenger with either a *Touch'n Go* card or *Mykad* will be able to transfer without having to buy different tickets for each operator. The PUTRA LRT and Park May buses have already installed the *Touch'n Go* infrastructure and the system is expected to be ready for the other operators in late 2003.

Even before implementation of common ticketing, the rail operators have been cooperating to come up with package tickets, especially for events. For example, KTM Komuter and STAR LRT introduced package tickets for people travelling to the National Sport Complex. KTM Komuter also worked with PUTRA LRT and Park May Bus on a monthly *Karib Card* season ticket priced at

MYR100 and offering unlimited use within certain zones. These integration concepts were further reinforced by advertising and promotion with a joint opening ceremony, press releases, pamphlets, newspaper advertisements, etc.

Feeder Buses

Since KL's integrated urban transit system covers a limited number of routes, it cannot be 100% effective without feeder buses. KL has a tropical climate and most people are not willing to walk more than 600 m in the heat and humidity. Therefore, people who use public transport either live very close to the railway stations or travel by car to the station. Unfortunately, the limited space at stations restricts the available parking and demand always outstrips supply. As a consequence, good feeder bus services are required to increase the catchment area and improve station accessibility. The STAR LRT used to contract feeder bus services to private minibus companies while PUTRA LRT had their own feeder bus services. Since their integration, the services are being reorganized. KTM Komuter used to cooperate with the Park May and Intrakota bus companies to provide services at popular stations. Most feeder bus services must be improved in terms of service standards, reliability, frequency and punctuality. The government has conducted a study on feeder bus requirements, and will soon propose a new policy to address this issue. In the meantime, the Triton Bus Company has been given a feeder bus licence and is serving some PUTRA LRT stations. Triton is also working with KTM Komuter to serve KTM Komuter stations. When the feeder bus services become more widespread and efficient, more people will be attracted to KL's public transport.

Impacts of Rail Services

Although there has been no specific study on the impact of rail services in KL, general observations indicate positive results. Since the introduction of KTM Komuter 1995, followed by the two LRTs and the ERL, KL's road congestion has not worsened significantly, suggesting that rail-based transit systems have contributed towards helping more people use public transport. Without urban rail services, KL's traffic congestion would be much worse.

The urban rail services have also created a new image for public transport. The earlier perception of public transport based on minibus services has now changed. The inherent safety, punctuality, comfort and cleanliness of rail services have won over many city dwellers as evidenced by the increasing numbers of white-collar workers using them. Passenger demand for quality is also compelling operators to improve.

For example, passengers on the PUTRA LRT and KTM Komuter are now demanding more frequent services during morning peak hours. The operators are studying these demands because new train sets are very expensive and they do not want their investment to be idle during off-peak hours.

The urban rail transit system also has changed passenger culture by educating people to be more time conscious as well as courteous and caring by giving up their seats to pregnant women, pensioners and disabled people. However, there are new problems like vandalism, graffiti, night security, etc., so more education programmes will be required involving cooperation by the general public.

Rail has created a new concept of living in spacious country homes and commuting more than 30 km to and from work. Many property developers have realized this and are building housing

and commercial estates along railway lines. Another new business potential is transit advertising. Due to the high visibility of trains and large number of passengers at some stations, many companies now prefer in-train, on-train and station advertising. The KL Monorail went even further by using exclusive advertising to associate certain brand names with certain stations.

Another benefit of railways is technology transfer leading to local job creation in both hardware and software. This is important because it stems the outflow of foreign currency to purchase technology from overseas.

Future Developments

Since rail-based transit is a necessity for modern cities, KL's urban rail network will be expanded. The KTM Komuter services will be enhanced by the completion of its 62.2 km expansion plan.

The recently published Draft Structure Plan Kuala Lumpur 2020 envisions turning KL into a world-class city and emphasizes the role of rail. The government will examine the feasibility of a new LRT line linking the Damansara and Cheras growth areas in the east and west. The STAR LRT will probably be extended north towards Taman Wahyu and west towards Kepong, while another line will be extended from Sri Petaling west to the area around Bukit Jalil. The KL Monorail may also be extended to the proposed district centre at Bukit Indah, adding a further 21.8 km to the network.

This KL City Hall also plans to establish a Transit Planning Zone to facilitate transit-oriented residential, commercial and mixed-use development around railway stations.

Conclusion

The last decade has witnessed rapid development of rail-based public transportation systems in KL. The opening of the KL Monorail later this year will be a cornerstone in KL's rail infrastructure. Future development will concentrate on expanding the network, adding stations and facilities, improving standards, and improving feeder access. There are many challenges in integrating the diversity of services into a system that satisfies passengers' requirements for efficient, seamless, flexible and inexpensive public transport. Hopefully the new Draft Structure Plan Kuala Lumpur 2020 will be a step in the right direction towards making KL a world-class city. ■

Further Reading

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