

Shaping Urban Journeys

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Abstract

Land transport affects everyone. Besides supporting economic growth, land transport plays an important social role in providing access to amenities and opportunities for the community. This paper highlights the key strategic thrusts that will shape Singapore's land transport policies and development over the next 10-15 years. Our goal is to build a people-centred land transport system—one that puts the needs of the commuters at the forefront, while protecting the environment to ensure that Singapore becomes an even more vibrant and liveable city.

Introduction

Like many major cities around the world, Singapore faces the challenge of meeting the increasing mobility needs of its people, while at the same time enhancing the liveability of its urban environment.

Daily travel demand in Singapore is projected to increase by 60%, from the current 8.9 million journeys a day to 14.3 million by 2020. This is due to an increase in population and tourist arrivals, as well as increased economic activities generated by a buoyant economy. Being a small and densely built-up city-state with limited land, it is not sustainable for us to build more roads indefinitely to cater to the increased travel demand. At the moment, roads already take up 12% of our land, compared with 15% for housing. Hence, our transport policies have to make the best use of limited resources to meet the additional demand.

Besides meeting the travel demand of the masses, our land transport system must cater to the diverse needs of our people. Transport is a basic need and we must ensure that everyone has access to it—the lower income groups, the

elderly, wheelchair users, families with young children and pedestrians. At the same time, we must take care of the environment for our future generations.

In the light of these challenges, a high reliance on public transport is fundamental to a sustainable land transport system in a liveable city. As Mrs Anna Tibaijuka, UN-HABITAT's Executive Director, said, "Sustainable urbanization cannot even begin to occur without taking into account the role public transport plays in securing quality of life in our cities and towns."

As the result of a year-long comprehensive review, the Land Transport Authority (LTA) released the Land Transport Masterplan: A People-Centred Land Transport System¹ earlier this year. The Masterplan spells out 3 strategic thrusts which will shape the land transport development and policies over the next 10 to 15 years. These are: Making Public Transport A Choice Mode; Managing Road Usage; and Meeting the Diverse Needs of the People. The end in mind is a more people-centred land transport system that supports a liveable and vibrant global city.

Making Public Transport A Choice Mode

Public transport is the most efficient people-mover. A mass rapid transit (MRT) train carries an average of 1,100 passengers at any one time during the peak period while a single deck bus can carry about 80 passengers. Contrast this with the average occupancy of about 1.5 persons per car. This means that it will take more than 50 cars to move 1 bus-load of passengers, and more than 700 cars to move 1 train-load of passengers. Imagine the tremendous strain on the road network if everyone were to choose to travel by car.

Therefore promoting public transport is our key strategy to meet the 60% increase in travel demand between now and 2020. In the Land Transport Masterplan, we have set a target to increase the public transport modal share during the morning peak hours from 63% today to 70% by 2020.

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To achieve this, we must plan and build the public transport system from our commuters' point of view. This means catering to our people's needs from the time they leave their homes to the time they arrive at their destinations. Besides expanding the system capacity, we will invest in the quality of the public transport system and services to enhance the total journey experience of commuters and make public transport a more attractive option.

Enhancing the integration of the public transport network

Today, the bus routes are planned by the public bus operators based largely on commercial considerations. As a result, we often receive feedback on circuitous routes and long waiting times. By 2009, LTA will take over the central planning of the bus network. We will adopt a more commuter-centric approach in planning the bus routes, taking into account the rail and road infrastructure to improve the integration of the overall transport system. Feeder bus services will run more direct routes and operate more frequently to bring commuters quickly to the major transfer hubs—the bus interchanges and MRT stations.

To complement this, more integrated transport hubs, like the ones at Ang Mo Kio or Toa Payoh (*Figure 1*), where bus interchanges are co-located with MRT stations and commercial development, will be created. These integrated hubs provide greater convenience



Figure 1: Ang Mo Kio Hub

for commuters making transfers between the bus and train. Commuters can also shop or pick up a drink while waiting for their buses or trains, all in air-conditioned comfort. The aim is to transform these transport nodes into fun and exciting places, create more buzz and provide greater comfort and convenience for the commuters.

Expanding the rail network

Given its high carrying capacity, speed and reliability, a comprehensive rail network is crucial to our efforts to make public transport a mode of choice for our commuters.

Currently, we have about 138km of rail network. By 2020, we will have completed three projects now under construction—the Boon Lay Extension, the Circle Line and Downtown Line. We will also embark on another 4 new rail projects—the Thomson Line, Eastern Region Line, the Tuas Extension and the North South Line Extension (Figure 2). This will double the rail network to 278km by 2020, achieving a rail density of 51km per million persons. This exceeds today's rail density in Hong Kong and Tokyo and is comparable to that in New York and London. What does this mean for our people? There will be greater connectivity by train and travel times will be reduced. Within the central area, they will be able to access an MRT station within a short 5-minute walk on average.



Figure 2: Existing and future rail lines

Managing Road Usage

Our second key strategy is to manage the demand for road usage so that traffic on our roads remains smooth flowing. Congestion results in economic loss as

well as externalities such as noise and air pollution. Our quality of life will be affected if daily commute turns into long, arduous journeys with constant gridlock amidst noise and air pollution.

Congestion needs to be managed in a holistic manner. While improving public transport is key to managing demand on our roads, this alone is not sufficient. Over the next 15 years, LTA will also continue to build new roads to serve new developments. We have recently opened the new Kallang-Paya Lebar Expressway to traffic. At 12km with 9km underground, it is the longest underground expressway in Southeast Asia. It provides an alternative route for residents in the northeast to reach the city centre. By 2013, we will also complete the 5km Marina Coastal Expressway and by 2020, the 21km North South Expressway (Figure 3).



Figure 3: Expressway network

However building new roads alone will not keep our roads smooth flowing. Additional lanes and new roads inevitably attract more traffic which eventually leads to congestion.

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Hence, we rely on policy tools such as the Vehicle Quota System to control the growth in vehicle population, and the Electronic Road Pricing (ERP) system to manage demand on congested roads.

ERP is by far the most effective and direct means of managing congestion. It causes motorists to be more aware of the cost of congestion to others as a result of their driving. The aim is to influence the motorist's decision, so that he may consider driving during off-peak hours or use alternative modes of transport. As part of the year-long land transport review, LTA has enhanced the ERP system to make it more effective and responsive

to changing traffic conditions. New gantries have also been introduced to manage the rising congestion in the city area.

Meeting the Diverse Needs of the People

Our third key strategy is to make sure that as our society evolves, our policies continue to keep in tune with the changing and diverse needs of our people.

Improving accessibility for all

Singapore's population is ageing. We will improve the accessibility of our transport system to enable the elderly to remain connected to the community. At the same time, less mobile groups such as wheelchair users, the visually impaired as well as the lower income groups, should have access to our land transport system. This is part of our aim of building a more inclusive society in Singapore.

Currently, wheelchair-accessible buses and barrier-free facilities in MRT stations are already available, but more will be done to improve accessibility. By 2010, pedestrian walkways, access to MRT stations, taxi and bus shelters, and public roads across the island will be barrier-free. By 2020, the public bus fleet will be fully wheelchair-accessible. Additional lifts will also be installed at MRT stations so that commuters need not make long detours to look for an entrance with lift (*Figure 4*).

As we enhance the quality of our public transport services, we also need to make sure that public transport remain affordable to the masses, especially the



Figure 4: Accessibility for all

lower income groups. The Government's policy is to regulate fares to ensure that public transport remains affordable to the majority. Instead of keeping fares at artificially low levels, they are allowed to go up in small regular steps to keep pace with inflation. However, for the lower-income groups who need more help with their transport costs, more targeted help is available through various government assistance schemes or community schemes such as the public transport vouchers that have been given out yearly.

Protecting the environment

Land transport plays a significant role in contributing to a high quality and sustainable living environment, given its wide-ranging impact on air quality, energy consumption, noise pollution and our urban landscape. Hence we must consciously design our practices and policies to support environmental objectives. In addition, LTA works closely with other agencies to encourage motorists to choose cleaner and more energy-efficient vehicles, such as hybrid cars.

We recognize that cycling is an environmentally friendly transport mode that can link commuters to our public transport network. With the growing popularity of cycling in Singapore, we will be building more and better bicycle parking facilities at MRT stations and bus interchanges. A trial will also be conducted to allow foldable bicycles onboard trains and buses.

A People-Centred System

Transport affects people in different ways. To have a people-centred land transport system, public feedback must play an important role as we formulate and fine-tune our policies.

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LTA regularly engages the public to understand their needs and expectations. For example, the year-long land transport review has benefited from an extensive public consultation exercise conducted through various channels—focus group discussions, online feedback portal and an e-game called the Great Transport

Challenge 2020. In all, more than 4500 people contributed their time, energy and ideas to this review.

Besides involving our people in shaping our transport policies, their support is equally important during the implementation stage. This is especially so given the major infrastructure works that LTA will be undertaking in the next 10 to 15 years and the resulting inconvenience to residents and communities affected by our works. To this end, we have been actively engaging all stakeholders through community events, publications, exhibitions, site visits and road shows to keep them updated of the progress of our projects and seek their feedback.

Our Art in Transit programme provides another channel for LTA to engage the community in producing customised artworks to showcase the unique culture and history associated with each MRT station. This integration of artwork and culture with the station design helps to foster greater ownership among the community and add colour and vibrancy to their daily commute. Examples include the football imagery on the wall of Stadium Station of the Circle Line and the flowing Chinese calligraphy built into the platform floor in Chinatown Station of the North East Line (Figure 5). The Mural Design Competition for the new Kallang-Paya Lebar Expressway, where winning mural designs will be installed on KPE structures, is yet another way to involve the community and build greater ownership and support for our initiatives.

A Land Transport Community Partnership Division has been established within LTA where dedicated teams are assigned to each constituency to handle the day-to-day road and traffic management issues more effectively, and foster a closer relationship with the community. A Community Outreach Programme was



Figure 5: Art in Transit in MRT stations

also launched to periodically share and discuss land transport policies and plans with grassroots leaders.

In January this year, LTA opened the Land Transport Gallery which showcases the development of the Singapore land transport system since 1945. The Gallery strives to engage our different stakeholders, promote greater awareness of the intricacies and challenges of land transport policies and encourage an open exchange of ideas to improve the land transport system.

Through the various engagement efforts, we hope that there will be greater ownership of the land transport system.

Conclusion

The Land Transport Masterplan has laid out ambitious goals and the years ahead will be challenging. Within less than a year from the launch of the Masterplan, LTA has completed several initiatives to improve public transport services. These include working with the rail operators to increase the frequency of rail services to reduce passenger loading and provide commuters with a more comfortable ride; extension of more Full Day Bus Lanes in the city to give buses greater priority on the roads; expansion of the Premium Bus Service scheme—which provides better comfort and a more direct journey at higher fares—from about 42 services last year to more than 70 services now; and introduction of a common call booking telephone service for taxi services which makes it more convenient for the public to call for a taxi.

Work on the longer term measures such as taking on the role of central bus planning and expansion of the rail network is also progressing smoothly. For example, LTA has recently completed the advanced engineering studies and finalised the alignment of Downtown Line Stage 2, bringing residents in the north-western area of Singapore one step closer to long-awaited access to the rail network.

By 2020, Singaporeans will have a more advanced public transport system that enables them to get to their destination efficiently and safely. Our end in mind is a land transport system that places the needs of our people firmly in the centre, and makes it possible for them to enjoy the activities in our vibrant global city.

Notes

1. The full report may be viewed online at <http://app.lta.gov.sg/ltmp/index.asp>

References

Vuchic, V. R. 1999. *Transportation in Livable Cities*. Center for Urban Policy Research, New Jersey.



Yam Ah Mee is Chief Executive of the Land Transport Authority (LTA), Singapore. He led the LTA in the Land Transport Review which unveiled major initiatives to enhance the land transport system in Singapore over the next 10 to 15 years. Under his leadership, LTA has embarked on many initiatives to improve public transport, such as the expansion of the rail network, the introduction of wheelchair-accessible buses, barrier-free accessibility around train stations and

bus interchanges, and the implementation of real-time bus arrival information. Mr Yam was previously Deputy Secretary (Sea & Air) in the Ministry of Transport. He is also the Director of EZ-Link Pte Ltd and Chairman of MSI Global Pte Ltd, both subsidiary companies of LTA.