A World Class Land Transport System

By Singapore Government

Introduction

The Government set up the Land Transport Authority (LTA) in September 1995 to spearhead improvements to our land transport system. The LTA's mission is to provide Singaporeans with a world class transport system. This White Paper sets out how the Authority intends to achieve its mission, its transport vision for Singapore, its operating philosophy, and the initiatives it will undertake in the short and long term.

A world class transport system will not come easy. But achieving it is not impossible if we get our basics right, dare to try out bold and imaginative solutions and have the political will to carry them out. It is important that we succeed because a high standard of transport enhances the quality of life, is good for economic growth and helps us maintain our competitive edge.

Our vision is a system that meets the needs and demands of a dynamic and growing city with a population that will increasingly expect high standards in service and infrastructure. Whatever the individual preferences of commuters and the various transport choices Singapore offers, the overall system must provide high quality service, is convenient, accessible, comfortable, safe, speedy, and affordable to the majority of Singaporeans. We must also continue to get good value for what we spend.

This means providing commuters with a wide spectrum of transport choices, while ensuring that they are effectively integrated. The range of services must be broad enough with sufficient differentiation in service standards and cost to suit each individual's preference and pocket. The cost to users of these services will depend on the cost of providing the services.

The task before the LTA is hence a challenging one.

Fortunately, for Singapore, our basic policies and infrastructure are sound and have been tested over the years. Indeed in many areas we are at the forefront, being acknowledged widely for our achievements, for example, in managing traffic in the city using the world's first ever Area Licensing Scheme (ALS), in having a Mass Rapid Transit (MRT) system which has won international acclaim and in operating one of the few commercially viable bus services in the world.

But we can do much better. The formation of the LTA will allow us to better integrate the functions of planning, development, implementation and management of all transport infrastructure and policies. We are now well poised to tackle this important challenge.

A World Class Transport System

A world class transport system must provide commuters with highly efficient, comfortable and convenient rides in free-flowing traffic. Having a world class public transport system is a key component of this system. There is no running away from this; public transport is and will always be the major mode of transport.
The system we aim to provide will offer convenience, reliability, ease of use, comfort, affordability and competitive travel times. Improving public transport means not only improving bus or train travel. It means improving all the intermediate and end-point facilities that make for a complete door-to-door journey: linkways, service information and provision, even customer service, are vital, components of a world class transport system.

To achieve this, we will need a major change of mindset among the operators and the providers of infrastructure. We must find ways to give incentives, so that operators will continually improve their services and be more responsive to the changing needs and demands of their customers. This way, services can be pegged at the highest sensible levels while providing good value for money.

The key is in providing a comprehensive range of public transport services, each being developed to the highest quality commensurate with the fares charged, and all well integrated to provide a seamless journey. The choices include:

- MRT to serve heavy transit corridors;
- Light Rail Transit (LRT) systems to serve as feeders to the MRT network;
- Buses to continue serving the less heavy corridors to complement MRT-LRT network;
- Premier bus services like BusPlus to provide higher grade of bus service;
- Taxis to provide car-like services.

We will expand our rail network so that it is as comprehensive in coverage as the London Tube or Paris Metro which started in 1863 and 1900 respectively. We must progressively build up our network so that access to one of these services is within walking distance and sized to match our city. Our target should be a high percentage of trips on quality public transport as in Zurich, where 75% of trips into the city centre are by public transport.

As for private transport, we will use road pricing to optimise road space and keep key roads and expressways free flowing. Once the cost of congestion becomes more transparent, motorists will be better able to make more informed transport decisions.

Achieving our vision of a world class transport system will depend on our success in tackling the following key areas:

- Integrating transport and land use planning;
- Expanding the road network and maximising its capacity;
- Managing demand of road usage;
- Providing quality public transport choices

**Initiatives To Improve The Transport System**

It will take 10 to 15 years to attain our vision of a world class transport system. In the short and medium term, LTA will undertake various initiatives to improve our transport system.

**Integrating land use, town and transport planning**

LTA will integrate urban development with transport planning. Having a proper mix of developments and the highest building densities concentrated at and around MRT stations will ensure maximum accessibility for commuters to key nodes of
employment, housing, leisure and other social activities. Commuter facilities and building developments will be fully integrated.

We should target for more high rise developments near MRT stations. Where appropriate, LTA should develop sites on top of or adjacent to MRT stations when constructing new rail lines. LTA must demonstrate the feasibility and benefits of building developments over new and existing stations.

**Developing a comprehensive road network**

Our goal is to build a more comprehensive road network. The Government will spend $11 billion to expand our road network by another 225 lane km over the next five years. The immediate improvements to speed up traffic flows include:

- The Seletar Expressway (SLE), Tampines Expressway (TPE) and Nicoll Highway extensions;
- The upgrading of Jalan Ahmad Ibrahim into an expressway and Telok Blangah Road into a semi-expressway;
- The transformation of 7 major junctions into 2- to 4-tier interchanges

LTA is seriously studying the feasibility of the Singapore Underground Road System (SURS). While SURS promises the equivalent of 40% more road capacity within the city center, it is extremely costly to build and to operate. Capital cost is estimated at $4.8 billion and operating cost is about $80 million a year.

**Harnessing technology to maximize network capacity**

LTA will use technology to maximize the capacity of our roads by upgrading and installing intelligent traffic management systems. Many promising improvements may be realized over the next few years if computer, telecommunications and information technologies continue to advance rapidly and become more affordable:

- Creating more green waves. LTA will extend the Green Link Determining (GLIDE) intelligent traffic light system to cover the whole island. This will increase the capacity of junctions and smoother traffic flow;
- Creating "virtual slip roads" by allowing motorists to turn left at selected traffic light junctions even though the red signal is on, similar to the American right-turn-on-red system; and
- Adopting traffic monitoring systems like the Automatic Network Travel Time System (ANTTS) and close circuit televisions to monitor traffic conditions in real-time. LTA will further develop these systems to provide navigational and traffic information to commuters through the radio, telephone hotlines or variable message signs.

**Demand management**

We need a judicious mix of ownership and usage measures. The Vehicle Quota System (VQS) has worked well. We need to retain the scheme even after we introduce more extensive usage measures like Electronic Road Pricing (ERP). With VQS, the car to population ratio will be 1:7 by year 2010, compared to 1:10 now. However we will continue to refine VQS further in the light of experience, try new ideas and close off loopholes.
Usage measures like road pricing are also needed. If they are effective, we can release more Certificates of Entitlement (C0Es) to enable more Singaporeans to own cars. ERP will start in 1997. It will automate the existing manual road pricing schemes, and can be progressively extended to other congested roads. ERP will allow us to shift from ownership towards usage-based charges.

We will also rationalize the road tax structure and apply a more uniform basis to it, taking into account social and equity considerations. The tax adjustments will be significant. For scheduled buses, they will fully offset the impact of ERR.

We will also give rebates to help motorists adjust to the ERR ERP charges for taxis will be phased-in over several years.

**Improving public transport**

Providing an attractive public transport system is the cornerstone of our land transport strategy. We will make public transport a more competitive transport mode. Bus operators must be more customer oriented. LTA will work with the operators to make the following improvements in the next 2 years:

- Improving travel times through more bus priority schemes like priority at traffic light junctions and bus lanes;
- Introducing more choices like BusPlus services, air-conditioned express services, supplementary services and intra-town services;
- Improving commuter facilities by providing bus arrival times at bus stops, over the phone, Teleview or Internet. Commuters can therefore plan the timing of their trips from home;
- Providing better bus services by refurbishing bus stops, providing more covered linkways and overhead pedestrian bridges and comprehensive display of service information; and
- Encouraging higher operational efficiency. With the Global Positioning System (GPS) technology which uses satellites to pinpoint the location of buses, bus operators will be able to significantly improve their scheduling and introduce mid-way services to relieve overcrowded spots.

We will expand our MRT network. We envisage a 160 km network including:

* The Woodlands line - 16 km - to open in February 1996;
* The North-East line (NEL) - 20 km;
* The Kallang line - 16 km;
* The Northshore line - 20 km.

The MRT network will serve heavy traffic corridors. LRTs will serve as feeders to the MRT network, mainly lighter corridors and in areas where there is sufficient ridership. We are studying the feasibility of running LRTs in Orchard Road/Marina South and some housing estates.

Taxis play an important role in offering personalized service at the high end of public transport. As long as the cost of operating taxis is correctly priced relative to private cars, we should allow market forces to determine the supply and demand of taxis. This is the key to providing a service that meets the demand of commuters. Other measures to improve the service include.
• Periodic evaluation and publication of the performance of taxi operators and incentives for the best performing fleet operator;
• Differential pricing to address the acute shortage of taxis during peak periods;
• Flexibility for operators to offer a wider variety of services; and
• Using GPS technology to improve the radiophone service to better match demand and supply.

Supporting Measures

We should not discount the contributions of other transport-related measures. These would include better pedestrianisation, good cycle facilities at MRT and bus interchanges away from the city, and parking policies such as more park and ride schemes.

Road safety and air quality

LTA will continue to work with the Ministry of the Environment (ENV) and the Traffic Police (TP) to keep our roads safe and the air clean. This will be done through regular reviews of vehicle standards, public education and enforcement programmes. In addition, we will pay more attention to noise alleviating measures.

Financing Framework

Our financing framework must continue to be based on the concept of partnership. The Government provides for transport infrastructure, commuters pay for operating cost and operators operate efficiently under the scrutiny of the Public Transport Council (PTC).

Our vision of a world class transport system calls for a comprehensive rail network. However, such a system is very costly to build and also costly to operate. This White Paper sets out the framework which will serve as a social contract between the Government, the operators and commuters on how we want to grow our future rail network.

Our financing system must be based on 3 sound principles:
• Fares have to be realistic and revised periodically to adjust for justifiable cost increases;
• We must recover operating cost; and
• We need a sustainable policy on asset replacement.

First, fares have to be realistic and revised periodically. This is because manpower and other operating costs will rise with time, and the possible major gains in productivity improvement from the reorganization of our public transport system have already been reaped. Commuters will be assured of affordable fares, but they must be prepared to pay for inevitable cost increases and higher service levels. Fare increases will be scrutinized by PTC and approved only if they are fully justified. Future adjustments will be in small regular steps, rather than large irregular jumps.

Second, we must recover operating cost by charging correct fares. This is the condition which must apply to all projects if we want a robust network and avoid
cross-subsidizing loss-making operations.

Third, we need a sustainable policy on replacing operating assets like trains and signaling equipment. Each generation should pay for its own consumption of services and assets.

The current policy calls for Government to provide transport infrastructure, including the first set of operating assets; commuters to share financial responsibility through fares covering both operating cost and the cost of second set of operating assets; and operators to extract efficiency dividends within the fare structure and service standards approved by PTC.

This is a prudent but conservative policy. However, the current arrangement is financially burdensome and exerts upward pressure on fares. It also stifles the extension of the rail network.

We will revise the requirement for asset replacement: Government to continue funding infrastructure and the first set of operating assets, and commuters to continue paying fares which cover operating costs including depreciation. However, the second set of operating assets will be financed by fare revenue covering only the historical cost of the first set of operating assets, while Government co-finances the balance.

The revision will help us to develop a comprehensive rail network to support our vision of a world class transport system. The rail operators will not have to worry about future rises in the cost of operating assets and can then focus on improving customer service and operational efficiency. The new formula will balance the responsibilities and interest of the 3 main stakeholders commuters, operators and the Government.

TA can now review all rail projects and implement those which are considered viable in terms of financing, rider ship and realistic and affordable fares. Even with this change, some projects may still not be viable. For marginal projects, we can consider implementing them if commuters find the projects worthwhile to them, as evidenced by their willingness to cover operating costs.

This financing framework reflects the Government’s commitment to providing Singaporeans with a quality rail network charging affordable fares. The Government will continue to invest in rail extensions that are justified. The North-South/East-West line and the Woodlands line already cost $6.3 bn. The NEL will cost $5 bn. LRT projects now under evaluation could cost another $1 bn.

Conclusion

If we can achieve all that is set out in this White Paper, Singapore will have a transport system that will be as widely acknowledged as its port and airport as among the best in the world.

But LTA cannot do this alone. We will have to work with many other agencies which share the objective of improving the infrastructure and quality of life in Singapore. More importantly, we will need the co-operation, understanding and support of the people.

Singaporeans must understand the challenges ahead, and be prepared for the changes to come. We must start solving tomorrow’s transport problems today.
Otherwise the problem will only grow and we would have condemned future
generations to even greater difficulties. We must act quickly lest we end up besieged
by the many painful dilemmas which face so many congested cities. We therefore
seek both understanding and co-operation from the people as we embark on this
exciting enterprise. Their feedback and suggestions will be most welcome.

Many of the improvements we have outlined will take several years to complete,
and for the effort to bear fruit. This is the nature of the problem. Indeed the exercise is
not one in which the problem can be tackled once and for all. It will have to be
managed all the time, and the improvements made continually. But if we stay true to
the philosophy and approach of this White Paper, we should be able to have the world
class transport system that Singaporeans deserve.

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