CENTRE for LiveableCities SINGAPORE

SG UN Habitat iLUGP (Transport)

Early Days

From 1950s to mid-1970s, Singapore faced the following issues and challenges:

- *Growing population*
- *Limited land*
- *Severe traffic congestion in city*
- *Poor bus services*
- *Poor infrastructure maintenance*
- *Lack of long term plans*

Bus rides could be an acrobatic act for only the brave at heart.

The State and City Planning (SCP) Project (1968 – 1972)

Concept Plan for 4 Million

Blueprint to guide physical development

Developments in ring pattern around Central

Road and rail network connects developments around the island Catchment

Transportation Plan

Road network

Mass Transit System

Vehicle Ownership and Use Policy

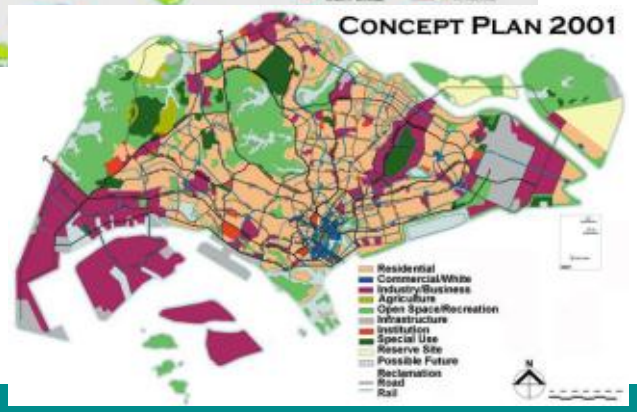
Public Transport

Integrated Master Planning & Development

Concept Plans

- Ring Plan structure
- High-density satellite towns built around central water catchment area
- Shaped the key transport developments – Changi Airport, MRT, expressways network

- Decentralisation strategy
- Commercial centres to be developed in different parts of Singapore
- Bring jobs closer to homes and alleviate congestion in the city centre



- Focused on providing a high quality living environment
- More housing options in the city to inject vibrancy into central area
- Set aside land in CBD for development of global financial hub

Integrated Planning in collaboration with land-use agencies

Ministry of Transport

Ministry of National Development

Ministry of Trade and Industry

Land Transport Authority (LTA)

Land transport planning & development

Housing & Development Board (HDB)

Public housing provider

Urban Redevelopment Authority (URA)

Overall urban planning

National Parks Board (NParks)

Park development & management

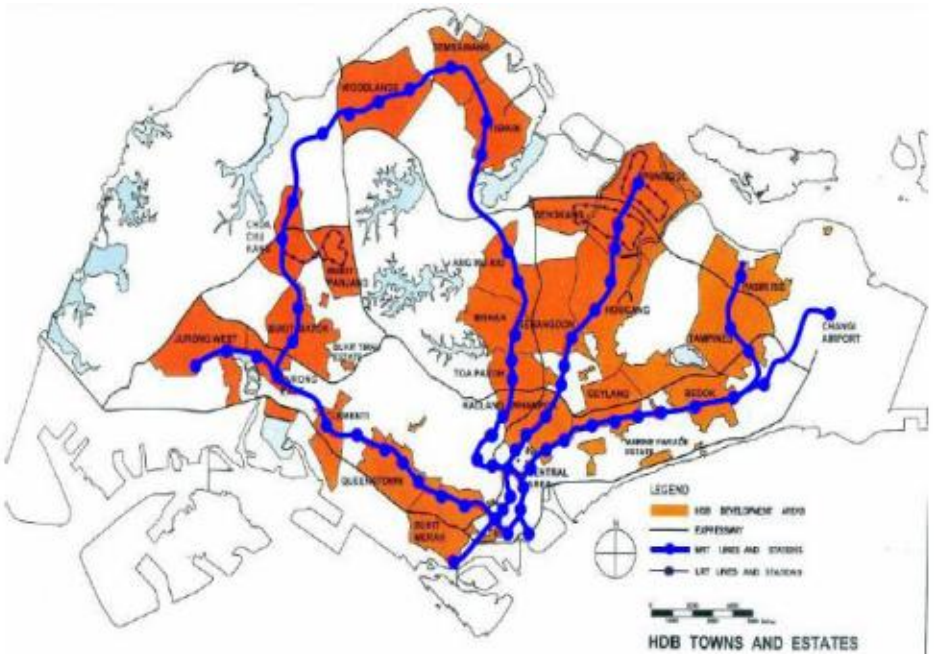
Jurong Town Corporation (JTC)

Industrial infrastructure developer

Integrated Master Planning & Development

- Increase accessibility to public transport
- Reduce car dependency
- Promote high density, compact public transport-centric urban fabric
- Safeguard future transport corridors

Integration of Transport and Housing estates



Integrating Transit with Developments

A mix of high density uses

Good Connectivity

Range of Transport Options

High Quality Design

Integrated Transport Hub at Sengkang New Town

High Labor Unrest and Poor Service in the bus industry

The Early Days – Bus Operations

- In Singapore's early years, public transport was trolley buses with wires above it to supply electricity.
  - One main bus operator plying routes in the city area, and many small, individual private bus companies, each plying a small part of the rural and fringe areas.
  - Services were fragmented across the island and most commuters had to make several changes of bus to get to their destination.

Photo credit: Asiaone website

- In the early 1970s, the government stepped in to re-organise the bus system
  - The small bus companies were amalgamated into larger bus companies grouped into regional sectors but bus services did not improve much
  - In 1973, the bus companies were merged into a single organisation – Singapore Bus Service(SBS).

Photo credit: The Journey, Singapore's land transport story

The Early Days – Genesis of the Rapid Transit System (RTS)

- The origin of the Mass Rapid Transit (MRT) was from a forecast by city planners in 1967 which stated the need for a rail-based urban transport system by 1992.
- "Great MRT Debate" - Between 1972 to 1980, 3 phases of study were carried out to assess the relative benefits between a bus-rail system and an all-bus system. Teams of foreign consultants were also later appointed to review the study recommendations.
- The MRT project was given approval by the government in 1982.
- SMRT, the private operator of the MRT system was incorporated in 1987, and the first section of the MRT system was opened for revenue service.
- The North-East Line (NEL) operating licence was awarded to the 2nd rail operator, SBS in 1999. NEL began revenue service in 2003.

Opening of MRT in 1988

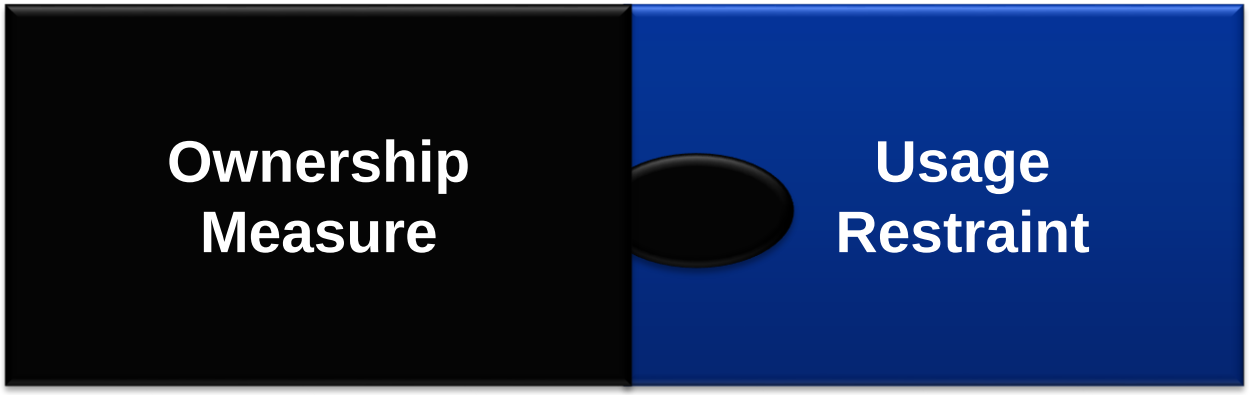
Prime Minister Lee Kuan Yew
12 Mar 1988, Official Opening of MRT

"We have only a **limited amount of land** on which to house our people, build factories, hospitals, roads and schools, and train the SAF.

Therefore, we decided to give **top priority to investments in public transport,** and to put private transport in second place. "

Reducing Reliance on Private Transport

Transport Policy: Demand Management

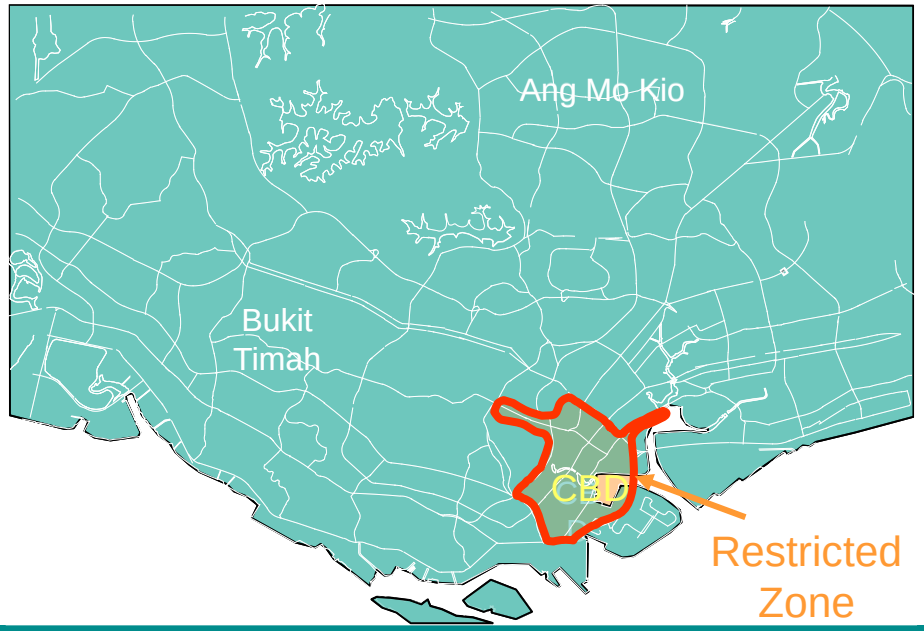


1. Limit ownership
2. Increase ownership cost:
   - Additional Registration Fee (ARF)
   - Excise duty
   - Road tax

1. Electronic Road Pricing (ERP) (Formerly known as Area Licensing Scheme)
2. Petrol duty
3. High cost of parking

Area Licensing System (ALS)

- **Implemented in 1975**
- **Reduced traffic entering the Restricted Zone (RZ)**

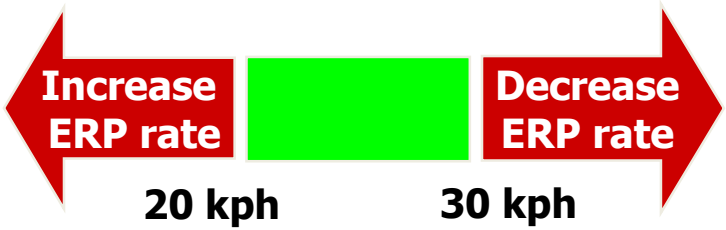


Road Transport Management through market forces

Usage Restraint: Electronic Road Pricing

- **ERP implemented in 1998, is a congestion management tool which optimises the use of road capacity through the pricing of roads**
- **Flexible – rates vary by location/time, based on local traffic conditions**
- **Equitable – motorists pay for congestion costs imposed on others or choose to travel at different time/route/use public transport**

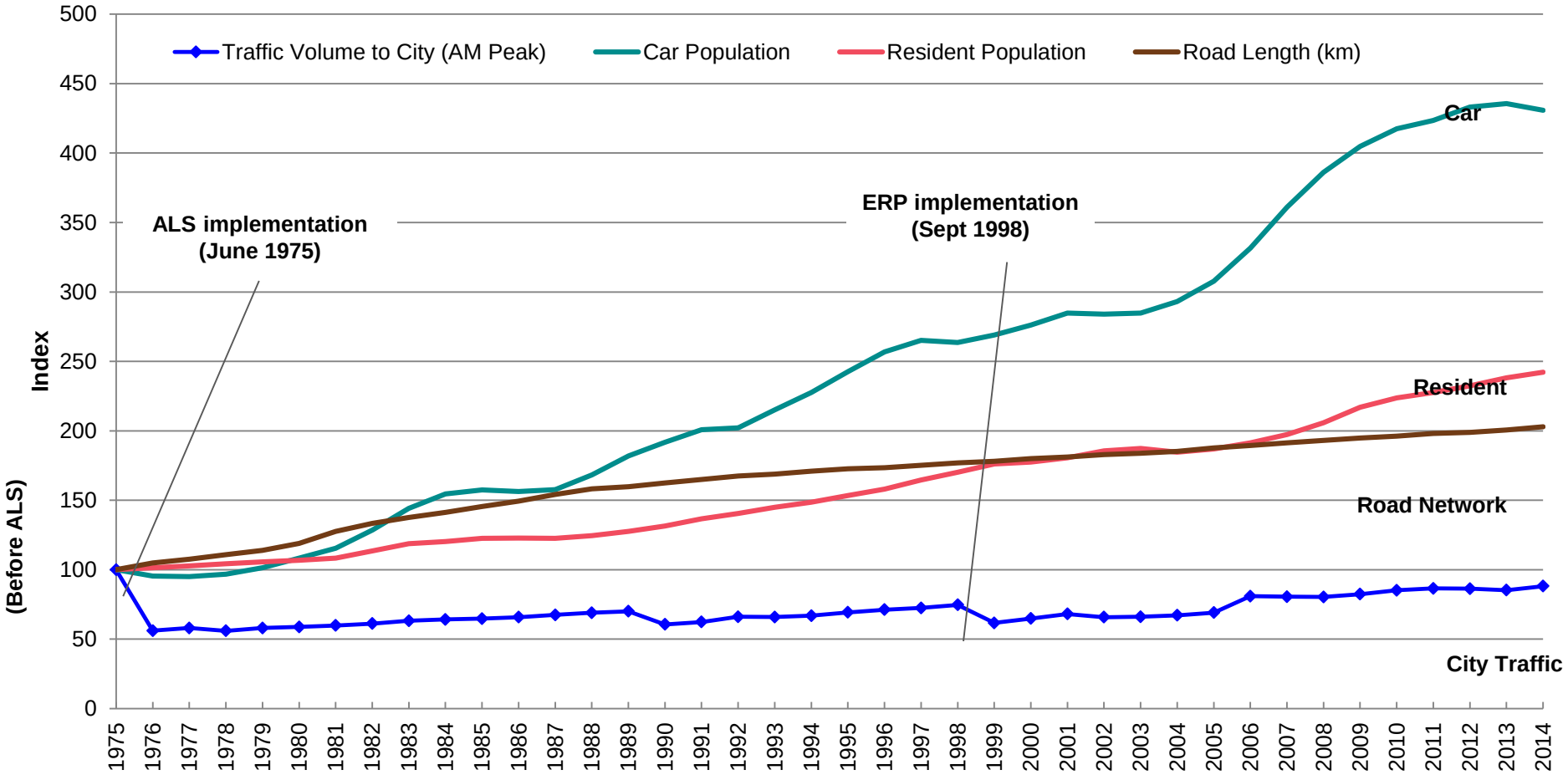
Arterial Roads



Expressways

- ERP Rates reviewed every 3 months
- To ensure optimal use of road space

Effectiveness of Congestion Pricing



Land Transport Authority

– Formation of a unified land transport agency

Mass Rapid Transit Corporation	• Planned and built the MRT • Regulated the operator (SMRT)
Public Works Department (PWD)	• Planned, built and managed roads and pedestrian infrastructure and commuter facilities
Registry of Vehicles	• Administered, regulated and enforced land transport; as well as vehicle polices
Ministry of Communications	• Developed land transport strategies and policies

Merged to form an integrated land transport authority (LTA) in September 1995

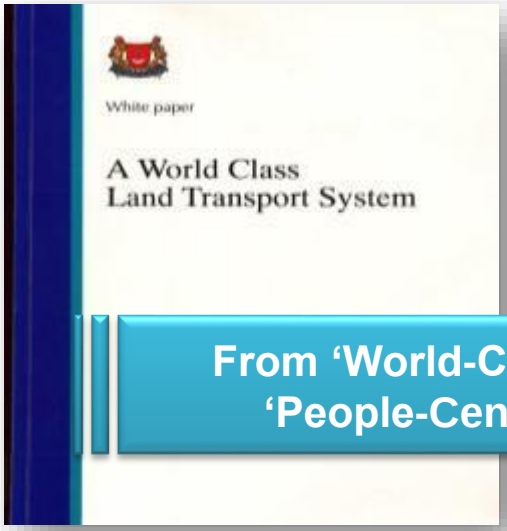
LTA's Functions

Policy | Planning | Development | Management | Regulation | Enforcement

- Formulation of land transport policies
- Integrate transport planning with land use
- Central bus network planning
- Plan, design and develop RTS, Road infrastructure
- **Plan, design & develop Active Mobility (Walking/Cycling/PMDs)**
- **Ownership/management of Bus & RTS assets**
- Manage road traffic and maintain road infrastructure
- Promote public transport
- **Bus Services Provider/Contractor**
- Regulate public transport services
- Regulate private transport ownership and usage
- **Illegal parking**

Our land transport master plans

Broad conceptual plans
10 – 15 year horizon



1996

2008

2013

From 'World-Class' to 'People-Centred'

From 'Meeting diverse needs' to 'Liveable & Inclusive Community'

Maps out new initiatives to realize transport vision

LTMP 2013 – Key Targets by 2030

75%

63% in 2012 (HITS)
66% in 2014 (ATS)

Of all journeys in peak hours undertaken on public transport

85%<60mins

76% < 60min (2012)
77% < 60min (2014)

85% of public transport journeys of less than 20km completed with 60minutes

8 in 10 HOUSEHOLDS

5.7 in 10hh (2012)
5.85 in 10hh (2014)

Within **10 mins** walk from a train station

We will aim for a 'Car-Lite Singapore' by promoting and developing other modes of transport, making them convenient. We have to rely less on cars on the roads because we cannot keep building roads – more roads for more cars. So we will provide more options for Singaporeans that are better than cars…

Prime Minister Lee Hsien Loong
Launch of the Singapore Sustainable Blueprint 2015,
8 November 2014

A LIVEABLE CITY

SUSTAINABLE MOBILITY

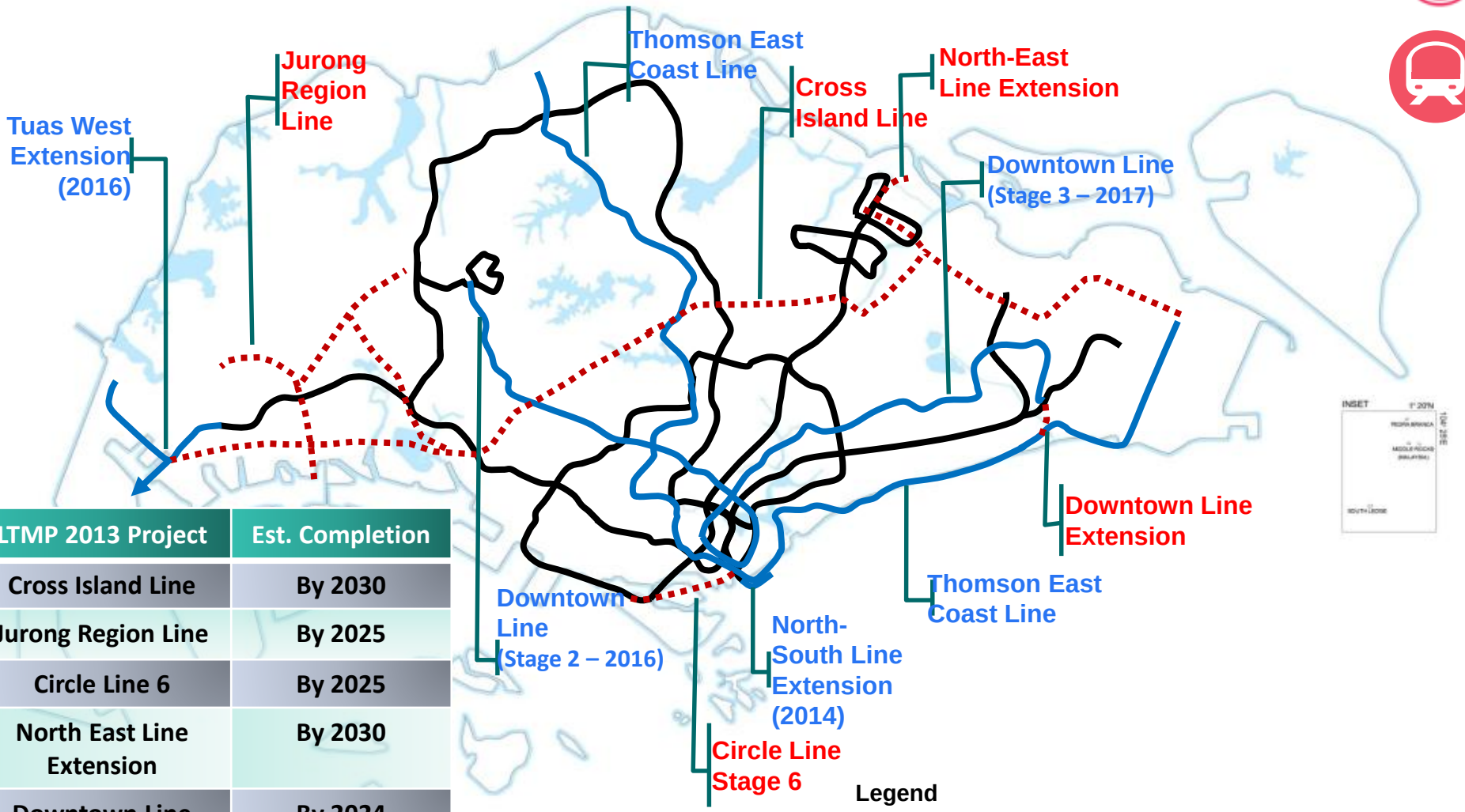
Commuters enjoy taking the public transport

Streets play different functions according to community needs

Innovative ways of getting around, beyond PT and private vehicles

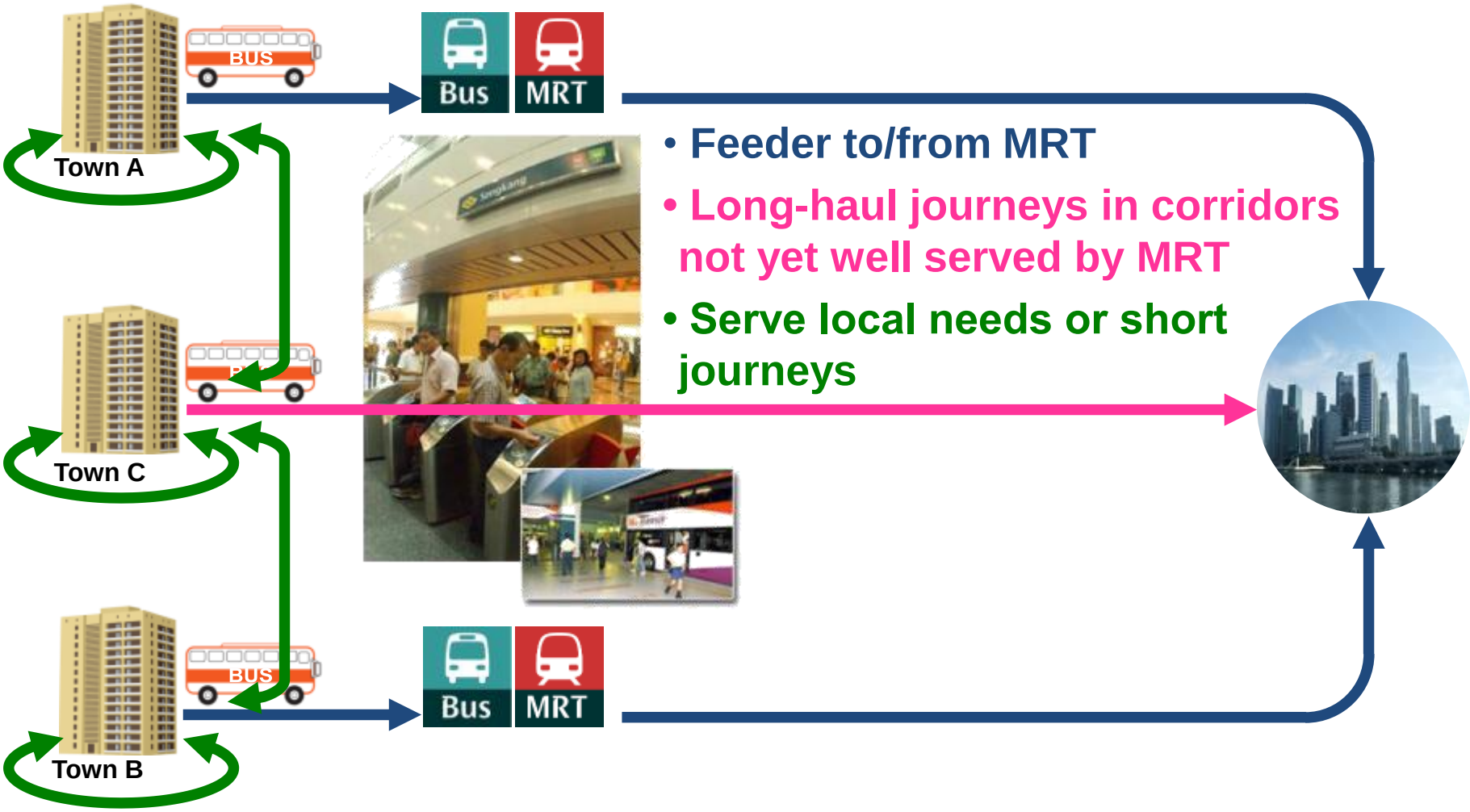
Our people and partners have right environment, resources and tools to thrive in our eco-system

Plans for Rail System



LTMP 2013 Project	Est. Completion
Cross Island Line	By 2030
Jurong Region Line	By 2025
Circle Line 6	By 2025
North East Line Extension	By 2030
Downtown Line Extension	By 2024
Thomson East Coast Line	By 2024

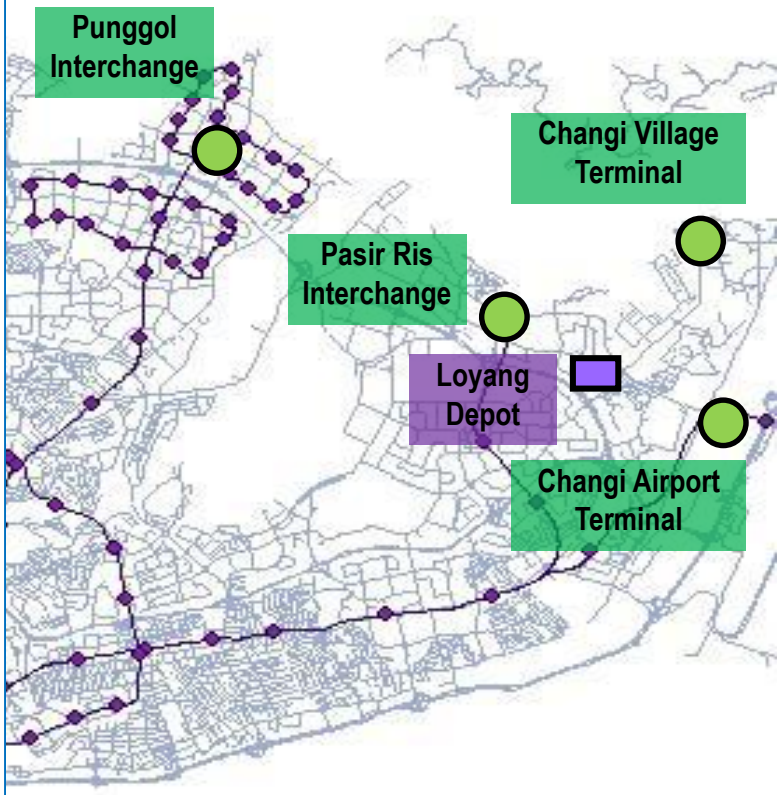
Buses – Hub and Spoke System



Transiting to Bus Contracting Model

- Contract operators to run public bus services through competitive tendering
- Government owns bus assets and retains fare revenue
- More responsive to commuters' needs
- More competition promotes cost-effectiveness
- Commuters enjoy higher service standards

- 1st Bus Package (Bulim) awarded to Tower Transit
- 2nd Bus Package (Loyang) awarded to Go-Ahead



Key Operational Objectives

	Regulatory Standards Today	BSEP Standards	Bus Contracting Model Standards
Availability (Peak)	**80%** **Basic Services** Arriving Within **10** Minutes **90%** **Feeder Services** Arriving Within **10** Minutes	**90%** **Basic Services** Arriving Within **12** Minutes **100%** **Feeder Services** Arriving Within **8** Minutes	**100%** **Basic Services** Arriving Within **15** Minutes **≥ 50%** **Basic Services** Arriving Within **10** Minutes **100%** **Feeder Services** Arriving Within **8** Minutes
Availability (Non-Peak)	**85%** **All Services** Arriving Within 20 Minutes **100%** **All Services** Arriving Within 30 Minutes	**100%** **All Services** Arriving Within **20** Minutes	**100%** **All Services** Arriving Within **20** Minutes
Loading	95% of licensed capacity	85% of licensed capacity	Monitored internally

Transforming Public Transport

Transforming our relationship with commuters, shifting social norms

Connecting with Commuters

Football themed cabin

Public Transport as a Destination & Community Hub

Rethinking Our Stations And Bus-stops

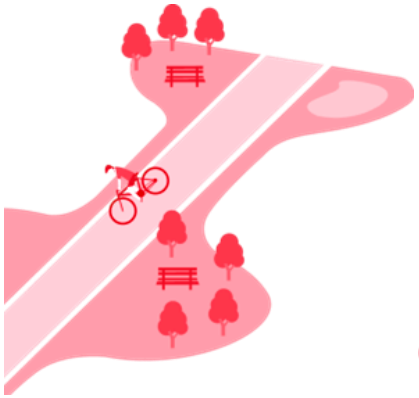
Orchestra Performance

Ramp Up Active Mobility Infrastructure By 2020

Length of Cycling Network

33.2km (2015) → 442.4km (2020)

2.3km Inter-town routes



Park Connector Network & Round Island Route

272 km (2015) → 400km (2020)

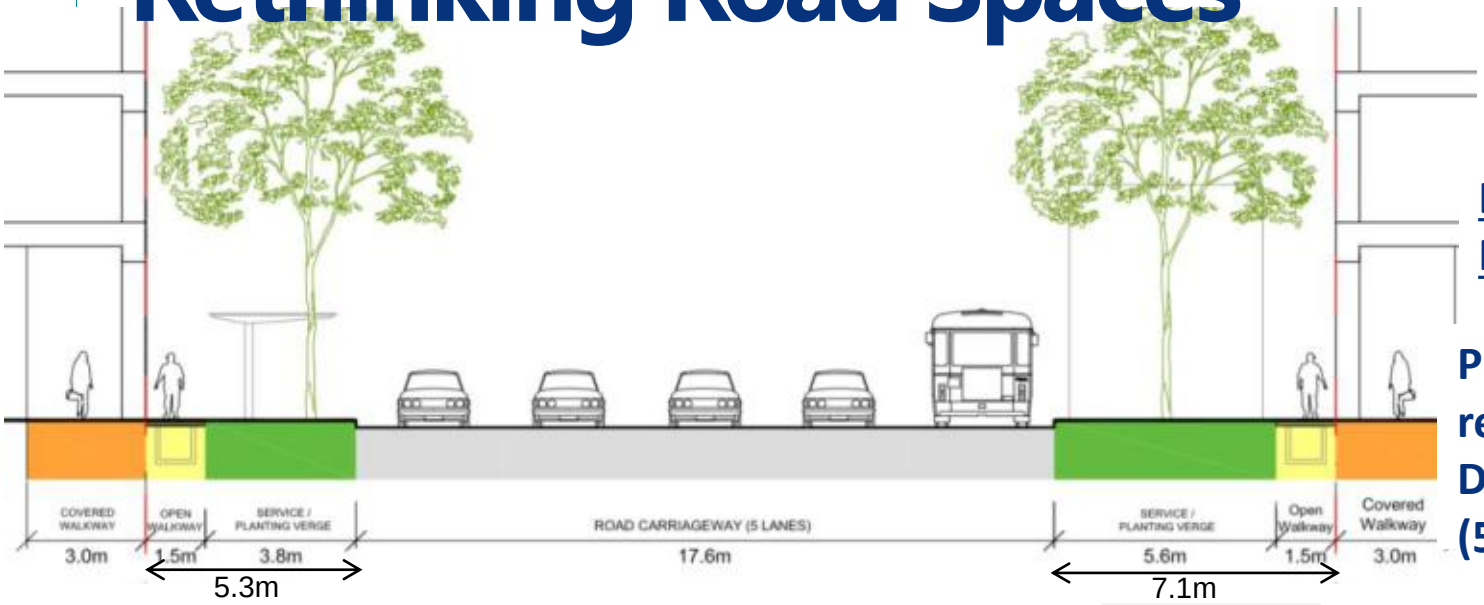
3 Bike Share Towns

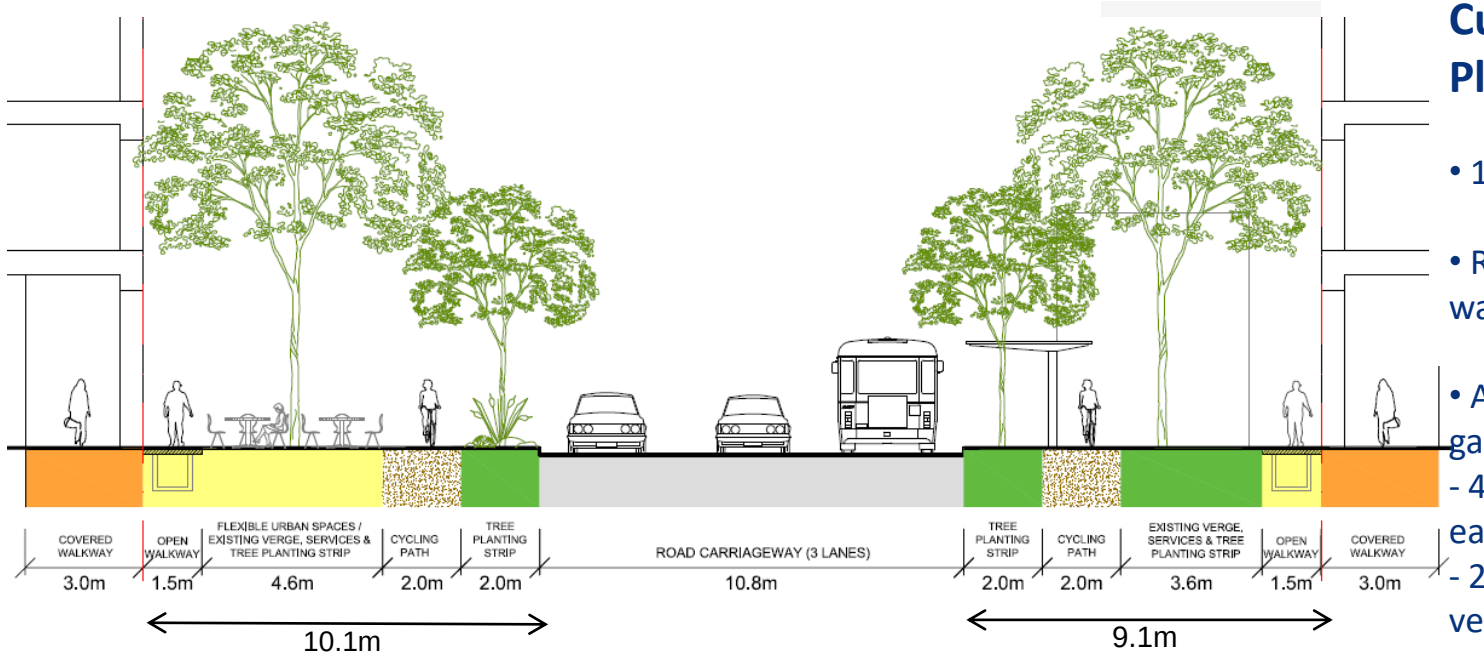
Walk2Ride Coverage

50km (2015) → 200km (2020)

2 Model Cycling Towns

Rethinking Road Spaces





Bencoolen Street Reinstatement

Planned reinstatement after DTL3 construction (5-lane Road)

Current Reinstatement Plan – 3 lanes

- 1 lane for buses only
- Reallocating 2 road lanes for walking and cycling
- Additional sidetable width gained: 6.8m , consisting of:-
  - 4 m cycling path (2m on each side)
  - 2.8 m planting / service verge

Ageing Masterplan

Wheelchair-Accessible Buses

84% of buses (2015)

100% of buses (2020)

Number of Green Man Plus crossings

500 (2015)

1008 (2018)

Installation of Lifts at Pedestrian Overhead Bridges

41 more by 2018

Other Key Initiatives

- Installation of railings at selected sheltered linkways
- Extension of train dwell time by 2-6 seconds during off-peak hours.
- Installation of platform gap fillers on NEL trains to enable seniors to board more safely.
- More bus services to enhance connectivity within mature estates
- Priority queue initiative at Yishun temporary bus interchange, which features a dedicated area for seniors and persons with disabilities to sit while waiting for their buses.
- Increase of font size for words on bus information posters at all bus stops to make them more prominent.
- Replacement of existing bumrests at bus and taxi shelters with proper seats that come with armrests.

Silver Zones

7 by end 2015

35 by 2020

Facilitate innovative ways of getting around

through the use of Autonomous vehicles, Electric vehicles, Information and Communications Technology (ICT), bike sharing systems, and bus-on-demand services

Principles of Governance

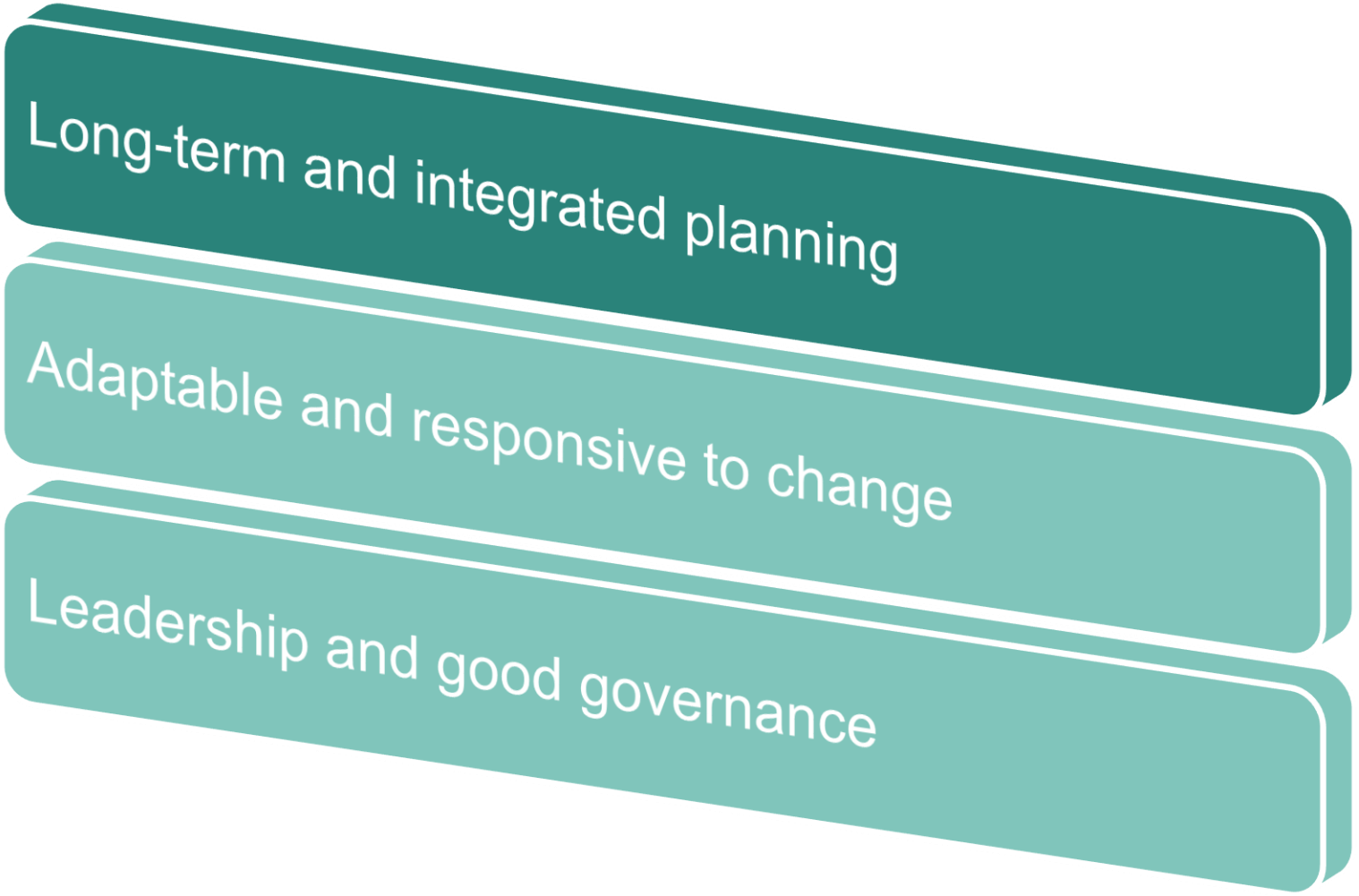
Core principles adopted by Spore's transport planners:

- **Long-term vision** – long range planning is key
- **Sound economic sense** – aligned with sound, market-oriented solutions
- **Adaptability & responsiveness** – constant innovations in anticipation of & in response to changing situations
- **Sustainability** – economically, socially & environmentally sustainable.

Institutional capabilities

- **Good leadership & political will**
  - Persuade the public when implementing unpopular but necessary policies
- **Sound institutions, robust processes & systems**
  - Transparent and consistent application of rules & processes, leading to confidence & stable expectations
  - Regular engagement and consultation with stakeholders

In summary…



CONVERSATION ……

Transiting to New Rail Financing Framework

- **Shortcomings of the Current Rail Financing Framework (CRFF)**:
  - Does not recognise network benefits in assessing financial viability of new lines
  - PTOs responsible for adding trains as ridership increases. They tend to be less responsive in doing so.
  - Longer licence duration limits contestability in rail industry

- **Key features of the New Rail Financing Framework (NRFF):**
  - LTA owns operating assets
  - PTO pays a license charge for the right to operate the RTS network and the lease of Government-owned operating assets
  - Shorter licence duration (15 years)

- Currently, only Downtown Line (operated by SBST) is on the New Rail Financing Framework