THE GOVERNANCE OF PUBLIC TRANSPORT MARKET IN ASIA-PACIFIC
Snapshot of SINGAPORE
UITP Asia-Pacific Centre for Transport Excellence (AP-CTE) was formed in 2012 and launched with joint efforts between the Land Transport Authority of Singapore (LTA) and the International Association of Public Transport (UITP). This joint effort is a step forward to advance sustainable transport in Asia-Pacific region.
INTRODUCTION

The legal framework of public passenger transport services varies significantly across Asia-Pacific. The aim of this study is to provide an overview of the national regulatory framework for urban public transport of selected countries in this region.

This research is presented in a series of reports; each report will focus on one country or a sub-region, highlighting key public transport statistics, summary of national planning strategy and framework, institutional structure, major players and projects in the market.

This report is on SINGAPORE. The compilation of information on public transport organisations, legislation, data and developments are obtained from various public sources.

UITP, the International Association of Public Transport, is internationally recognised for its work in advancing the development of public transport. We have over 1,400 member companies in 96 countries throughout the world and represents the interests of key players in this sector. Our members include transport authorities, operators, both private and public, in all modes of collective passenger transport, and the industry. UITP addresses the economic, technical, organisation and management aspects of passenger transport, as well as the development of policy for mobility and public transport worldwide.

ACKNOWLEDGEMENT

We would like to thank the Land Transport Authority, LTA Academy and Public Transport Council of Singapore for their support and collaboration on this report.
### Key Statistics

#### Basic National Statistics

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area (km²) (2016)</td>
<td>719.1</td>
</tr>
<tr>
<td>Urban Land Area (km²) (2010)*</td>
<td>565.6</td>
</tr>
<tr>
<td>Population (millions) (2016)</td>
<td>5.61</td>
</tr>
<tr>
<td>Urban Population (millions) (2016)</td>
<td>5.61</td>
</tr>
<tr>
<td>Urban Population Growth (2016)</td>
<td>1.3% annually</td>
</tr>
<tr>
<td>GDP at Current Market Prices (SGD) (2016)</td>
<td>410.27 billion</td>
</tr>
<tr>
<td>Real GDP Growth at 2010 market prices (2016)</td>
<td>2.0% annually</td>
</tr>
</tbody>
</table>

*Source: Singapore Department of Statistics; *World Bank*

#### Demand for Public Transport (2015)

<table>
<thead>
<tr>
<th>Mode</th>
<th>Average daily ridership (million people)</th>
<th>Growth in ridership (%)</th>
<th>Annual ridership per capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total mass public transport</td>
<td>6.92</td>
<td>4.1</td>
<td>456.3</td>
</tr>
<tr>
<td>Bus</td>
<td>3.89</td>
<td>3.7</td>
<td>256.6</td>
</tr>
<tr>
<td>MRT</td>
<td>2.88</td>
<td>4.2</td>
<td>199.9</td>
</tr>
<tr>
<td>LRT</td>
<td>0.15</td>
<td>11.7</td>
<td>199.9 (Total Rail)</td>
</tr>
</tbody>
</table>

#### Supply for Public Transport (2015)

<table>
<thead>
<tr>
<th>Service</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of public buses (in operation) in urban area</td>
<td>5120</td>
</tr>
<tr>
<td>Bus fleet per million people</td>
<td>92.5</td>
</tr>
<tr>
<td>Number of bus routes</td>
<td>&gt;300</td>
</tr>
<tr>
<td>Total rail length (KM)</td>
<td>199.6</td>
</tr>
<tr>
<td>Growth in rail length from 2014 (%)</td>
<td>9.1</td>
</tr>
<tr>
<td>Rail length (KM) per million people</td>
<td>361</td>
</tr>
</tbody>
</table>

#### Demand & Supply of Singapore Public Transport (2000-2015)

*Source: UITP*

1 Data for Key Statistics are mainly from Government of Singapore (https://data.gov.sg/group/transport) and Land Transport Authority, unless stated otherwise. Per Capita data are calculated by UITP using data from Government of Singapore.
Modal Share in 2015 (%)

- MRT & Public Bus: 24.8%
- Private Chartered Bus / Van only: 2.7%
- Motorcycle / Scooter only: 34.0%
- Others: 4.8%
- Other combination of MRT or Public Bus: 5.4%
- No transports required: 8.5%
- MRT Only: 12.0%
- Car only: 21.9%
- Public bus only: 16.5%

Public transport modal share: 58.7%

(Source: LTA General Household Survey 2015)

Growth of Private Vehicles

- Motorisation Rate (per 1000 people)
  - Private Car: 94.2 to 93.9
  - Motorcycle & Scooter: 32.5 to 25.9

Year: 2005 to 2015
Average Trip Distance

<table>
<thead>
<tr>
<th>Mode</th>
<th>2004</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRT</td>
<td>13.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Bus</td>
<td>6.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Taxi</td>
<td>8.5</td>
<td>10</td>
</tr>
</tbody>
</table>

Affordability of Public Transport

<table>
<thead>
<tr>
<th></th>
<th>Year 2007/08</th>
<th>Year 2012/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average spending on public transport per month (household expenditure)</td>
<td>$160</td>
<td>$170</td>
</tr>
<tr>
<td>% of household expenditure on goods &amp; services</td>
<td>4.2%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

(Source: Report on Household Expenditure 2012/13)

Customer Satisfaction

(Sources: Public Transport Customer Satisfaction Survey, LTA
* Satisfaction rating on a scale 1 to 10, 10 being Very Satisfied)
Land-use and transport plan with 40 to 50 years horizon. The first Concept Plan formulated in 1971, was reviewed in 1991, 2001 and 2011.

Statutory land use plan with a horizon of 10 to 15 years. It is reviewed every 5 years, translating broad strategies of the Concept Plan into detailed plans of land and transport developments in Singapore.

All evaluation and grant approvals for development projects to ensure they satisfy the Authority's planning strategies and evaluation criteria.

Source: Land Transport Authority
Singapore aims for a People-Centred Land Transport System and by 2030, there will be:

- 8 in 10 households living within a 10-minute walk from a train station.
- 85% of public transport journeys (less than 20km) completed within 60 minutes.
- 75% of all journeys in peak hours undertaken by public transport.

*Source: Urban Redevelopment Authority*

**Broaden the Rail Network**

Approximately one MRT line or extension will be opened between 2013 to 2025, contributing to a total rail network of 360km by 2030.

- More trains for NSEWL and BPLRT
- More trains for NEL and CCL
- More trains for NSEWL and SPLRT Complete NSL resignalling

*Source: Land Transport Authority*
Rail Lines by 2030

LEGEND

- Existing Rail Lines
- Proposed Rail Lines (LTMP2008)
- Proposed Rail Lines (LTMP2013)*

* Proposed rail alignments are conceptual and subject to further studies

Complete EWL resignalling
Opening of TSL (Ph1)
Opening of TSL (Ph2)
Opening of TSL (Ph3)
Opening of ERL
Opening of JRL
Opening of CCL6
Opening of DTL
Opening of CRL
Opening of NELe

GREATER CONNECTIVITY WITH......

Higher Quality of Bus Services

Under Bus Service Enhancement Programme (BSEP), the aim is to deploy the 1,000 new government-funded buses into service between 2012 and 2017.

► New and Enhanced Routes under BSEP

More Integrated Transport Hubs (ITHs)

To increase from 6 ITHs to over 17 ITHs by 2030. The new and upcoming ITHs aim to bring together rail and bus interchanges, combined with commercial developments such as shopping malls.

► Completed and Upcoming ITHs

*Source: Urban Redevelopment Authority
Promote First and Last Mile Connectivity

To increase cycling network from 230 km to 700 km and facilitate a bike-sharing scheme of over 230 stations.

The aim is to provide all 26 towns across Singapore with comprehensive intra-town cycling networks for residents to cycle to and from MRT stations and neighbourhood centres.

*Source: Urban Redevelopment Authority

Introducing Walk2Ride Programme

A S$330 million project in building sheltered pedestrian linkways connecting MRT and LRT stations to nearby amenities.

*Image on Page 11-14 © Urban Redevelopment Authority. All rights reserved.
Singapore adopts the ‘Whole-of-Government’ (WOG) approach with inter-ministerial and inter-agency committees set up to plan, integrate and implement land use and transport strategies.

**MINISTRY OF NATIONAL DEVELOPMENT**

**MINISTRY OF TRANSPORT (MOT)**

Ministry of Transport oversees the development and regulation of land transport, civil aviation and air transport, and maritime transport and ports.

**URBAN REDEVELOPMENT AUTHORITY**

(Statutory Board under Ministry of National Development)

The Urban Redevelopment Authority is Singapore’s land use planning and conservation authority. It strives to create a vibrant and sustainable city of distinction by planning and facilitating Singapore’s physical development.

**LAND TRANSPORT AUTHORITY**

(Statutory Board under MOT since 1995)

Land Transport Authority is responsible for planning, policy and regulation of all urban land transport modes. LTA also constructs and maintains roads and other public transport infrastructure.

**PUBLIC TRANSPORT COUNCIL**

(Statutory Board under MOT since 1987)

Public Transport Council, an independent body consists of 17 members with a diverse representation across the society, including academia, labour union, industry and people sector. They are responsible for:

- Regulating bus and train fares.
- Regulating ticket payment services for bus and trains.
- Regulating penalty fees to deter fare evasion.
- Advising MOT on public transport matters.
AUTHORITIES’ PRIMARY RESPONSIBILITIES

MOT

- Responsible for overall development of Singapore’s transportation.

- Planning for long-term sustainability in accordance with the Concept Plans.

URA

- Integration of land use and land transport planning and policies.

- Responsible in the administration, assessment, collection and enforcement of taxes, fees and charges relating to land transportation.

LTA

- Plan, design, construct public transport infrastructure.

- Regulate public transport fares under the Public Transport Act.

PTC

- Regulate and have authority to amend legislation on Ticket Payment Services.
EVOLUTION OF PUBLIC TRANSPORT REGULATORY FRAMEWORK IN SINGAPORE

1902
A private monopoly market.
No legislation on quality of services or condition of operations.
Establishment of Singapore Electric Tramways Company (London) through Tramways Ordinance, 1902.
- In 1909, the system carried 32,000 passengers a day.
- Tram system deteriorated after WWI causing rising public dissatisfaction.

1925
Shifted to a public monopoly market.
Establishment of government-owned Singapore Traction Company (STC) to operate trolley buses.
STC operated under conditions specified under Singapore Traction Ordinance of 1925 and was given 30-year monopoly to operate trolley buses and omnibuses.

1930
Public monopoly and emergence of passive franchises.
Bottom-up approach with no formal planning or enforcement on service quality.
Rise of “mosquito buses” due to weak regulations.
Under a relatively free market, privately-owned bused bus companies provided services outside of STC routes.
Registrar of Vehicles (ROV) consolidated “mosquito bus” operators into 10 companies (aka Chinese bus companies) with 144 buses.
- Co-existence of a government-owned bus company and 10 privately-owned bus companies was problematic.
- Lack of transport planning encouraged bus companies to cherry-picked routes of high demand area, leaving rural areas underserviced.

1935
Gradual shift from market-driven initiatives to authority-driven initiatives.
Set up of Commission of Inquiry to review passenger transport system.
Formation of Omnibus Services Licensing Authority (OSLA).
The first single authority to govern bus service licensing.
Establishment of 15-member Transport Advisory Board (TAB).
- Under the White Paper (1970) from TAB, Singapore transformed the laissez-faire bus market to a centrally-planned approach with a restricted number of operators.
- 10 Chinese bus companies amalgamated into 3.

1955
1956
1968
1971
Bus Service Licensing Authority (BSLA) replaced OSLA.
- BSLA was introduced to have greater power in regulating bus industry, such as coordination and rationalisation of bus routes, and responsible for approving requests for fare adjustments from bus operators.
- BSLA introduced the common fare structure.
A government-granted monopoly market.
Formation of Singapore Bus Service (SBS).

STC went into bankruptcy and Government intervened to merge 3 remaining bus companies to form SBS, a privately owned company.

Establishment of a government team of officials (GTO) and introduced dedicated bus lanes.

GTO was government’s hands-on and direct intervention to prevent SBS from deteriorating.

Increase competition in the market by licensing more operators.
Formation of Trans-Island Bus Services (TIBS).

Government gave a second bus operator license to Singapore Shuttle Bus (Pte) Ltd, which formed TIBS, to encourage competition and improve the overall bus services in the market.

Formation of Mass Rapid Transit Corporation (MRTC).
• Government planned the MRT to form the backbone of a hub-and-spoke system while buses were to play the role in providing trunk services.
• MRT started operation in 1987 under SMRT Ltd.

Transit from being Licensing Authority (with little enforcement) to Regulatory Authority.
Formation of Public Transport Council (PTC) to replace BSLA.
• Operated as non-profit making statutory board, funded by government grant.
• Comprised by members from wide cross-section of society.
• Responsible for determining bus routes and regulating public transport fares.

Establishment of Transit Link Pte Ltd, consisting SBS, TIBS and SMRT Ltd.
• Responsible for central planning and coordination of bus network.
• Singapore’s first effort in carried out an extensive public engagement programme on bus route rationalisation after MRT in operations.
• PTC reviewed and approved the study conducted by Transit Link.

PTC stipulated bus service specifications.

Formation of Land Transport Authority (LTA).
Merger of 4 government agencies:
• Roads and Transportation Division of Public Works Department
• Registry of Vehicles
• Mass Rapid Transit Corporation (MRTC)
• Land Division of Ministry of Communications
Establishment of License and Operating Agreement (LOA) and Lease and Maintenance Agreement (LMA) for SMRT.
- Assets ownership passed over to SMRT, where SMRT’s role was to own, operate and maintain the operating assets.
- LTA’s role was to build the MRT system, regulate the operation and maintenance, administer the replacement grants, set the service and safety standards, and own fare system infrastructure and software.

Singapore’s first competitive tendering.
SBS Transit became the 2nd Rapid Transit System (RTS) operator.

2001

Introduction of competition and transformed into a private duopoly market.
SMRT became the 2nd multi-modal operator by acquiring TIBS (including the operation of Taxis).

Tightened of regulation.
Introduced RTS (Amendment) Bill.
- LTA had new powers to grant RTS licenses, impose license conditions, modify or amend license terms, issue and modify code of practices and give directions for compliance by the licensees.

Issuance of 10-year Bus Service Operator Licenses (BSOLs).
- Under amended PTC Act, all public bus services must be licensed.
- Bus operators with 10 or more bus services must have BSOL – which were SMRT Buses Ltd and SBS Transit Ltd.
- New Quality of Service (QoS) Standards were incorporated, containing Operating Performance Standards (OPS) and Service Provision Standards (SPS).
- PTC reviewed PTOs’ monthly performance reports and regular audit reporting process.

Shift to centralized bus network planning by LTA.
- LTA played the role of central transport network planner and was responsible for rail, bus, road networks and commuter facilities such as bus stops, pedestrian walkways and integrated transport hubs.
2010

A competitive regulative market. Transition from privatised model using competitive tendering process.

Announcement of the New Rail Financing Framework.
New framework brought greater contestability with shorter license period and LTA would have the flexibility to refresh license conditions at the end of each term.

Implemented Distance Fares Scheme.
The distance-based through-fare structure which removed the transfer penalty on fares to encourage seamless transfers between different modes and operators.

Launch of Bus Service Enhancement Programme (BSEP) & City Direct Bus Service scheme.
- The programme was financed through S$1.1 billion Bus Service Enhancement Fund (BSEF) to increase bus fleet by 35% (to 1000 buses) in five years.
- City Direct bus services were tendered to private bus operators. The aim was to implement 14 parallel services, with limited stops and use of expressways, for faster commute during peak hours.

2012

Announcement of Government Contracting Model (GCM) for bus services.
To lower barriers of entry and attract more bus operators through competitive tendering process. Operators bid for the right to operate the services with fare revenue retained by government.

2014

Introduced two-year trial of Bus Service Reliability Framework.
The carrot-and-stick approach where operators would be rewarded or penalised based on how regularity of the bus arrival intervals are at bus stops measured by Excess Wait Time (EWT) and the percentage of on-time arrivals at selected bus stops in comparison with the operator’s published schedule (an indicator known as On-Time Adherence (OTA)).

2015

Award of Bus Packages.
The first bus package of 26 routes was awarded to Tower Transit in May 2015. The second package of 25 routes was awarded to Go-Ahead in November 2015. Both are foreign bus operators.

Implementation of the New Rail Financing Framework.
The new rail financing framework was first implemented in 2011 for the Downtown Line operated by SBS Transit. Its next major implementation was in September 2016 with SMRT, where LTA purchased back from SMRT rail assets worth approximately S$1 billion.

2016
Singapore is increasing market contestability by removing barriers of entry with the new framework of management contracting model.

**New Rail Financing Framework (NRFF)**

### Old Model

- **License Period**: 30-40 years
- **License Charge**: No Fee
- **Rail Infrastructure**: LTA owns rail infrastructure (including viaducts, tunnels, tracks). Operators responsible for maintenance.
- **Operating Assets**: Operators own, maintain, and autonomy management in building-up, upgrading and replacement.
- **Regulatory Regime**: Regulated based on operational performance.
- **Regulatory Risk**: All regulatory risk borne by operators.
- **Profit Margin**: No cap on earning before interest and taxes (EBIT) margin.
- **Revenue Risk**: All fare and non-fare revenue risk are borne by SMRT trains and SMRT Light Rail.
- **Fares**: No change. Fares regulated by PTC. Public transport rail operators will be invited to submit fare applications to PTC on the adjustment of fares.

### New Model

- **License Period**: 15 years and possibly a five year extension.
- **License Charge**: Operators pay annual License Charge into Railway Sinking Fund.
- **Rail Infrastructure**: Operators responsible for maintenance.
- **Operating Assets**: LTA owns and makes decisions on building-up, upgrading and replacement.
- **Regulatory Risk**: LTA shares the risks with Operators.
- **Profit Margin**: EBIT margin is managed through License Charge framework. License Charge increases as profit increases.
- **Revenue Risk**: LTA shares in fare revenue risk with SMRT Trains.
- **Fares**: No change. Fares regulated by PTC. Public transport rail operators will be invited to submit fare applications to PTC on the adjustment of fares.

Government Contracting Model (GCM)

<table>
<thead>
<tr>
<th>Route Planning &amp; Tendering Process</th>
<th>Bus Service License (BSOLs)</th>
<th>Government Contracting Model (GCM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Governed by LTA and individual routes were tendered existing Bus Operators License holders (SMRT and SBST).</td>
<td>• Bus services in Singapore will be bundled into twelve bus packages with about 300-500 buses each.</td>
<td></td>
</tr>
<tr>
<td>• Bus License renewed upon application submission.</td>
<td>• Competitive tendering is required for each bus package.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>License Period</th>
<th>10 years</th>
<th>Range from 2 to 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fare Revenue</td>
<td>Operators keep fare revenue.</td>
<td>Singapore Government keeps fare revenue.</td>
</tr>
<tr>
<td>Fees to operate</td>
<td>Operators pay a license fee to PTC.</td>
<td>LTA pays a service fee to operator for operations.</td>
</tr>
<tr>
<td>Operating Assets</td>
<td>Operators own, maintain, and autonomy in management to upgrade and replacement of assets.</td>
<td>• Operators responsible for maintenance. • LTA purchases buses, owns and makes decisions on upgrading and replacement operating infrastructure.</td>
</tr>
<tr>
<td>Performance Standards</td>
<td>PTC to manage bus services using Quality of Service (QoS) Standards.</td>
<td>LTA to specify specific performance standards into contract.</td>
</tr>
<tr>
<td>Revenue Risk</td>
<td>Borne by Operators.</td>
<td>Borne by LTA.</td>
</tr>
<tr>
<td>Fares Review Process</td>
<td>Operators will be invited to submit fare applications to PTC on the adjustment of fares.</td>
<td>LTA to provide information to PTC to support the decision on fare adjustment.</td>
</tr>
</tbody>
</table>

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Bus Service Reliability Framework (BSRF)

Bus operators will be rewarded or penalised based on Excess Wait Time (EWT), which is a measure of commuters’ waiting time.

For each 0.1 minute outperformance or underperformance in EWT score when compared to the baseline, the following monthly incentive and penalty quantum will apply:

<table>
<thead>
<tr>
<th>Fleet Size category</th>
<th>&lt;10 buses</th>
<th>10 to 20</th>
<th>≥ 20 buses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incentive Amount</td>
<td>$2,000</td>
<td>$4,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>Penalty Amount</td>
<td>$1,300</td>
<td>$2,600</td>
<td>$4,000</td>
</tr>
</tbody>
</table>
## Primary Responsibilities of Service Management: Authorities vs Public Transport Operators

<table>
<thead>
<tr>
<th>Areas of Service Contract</th>
<th>Authorities</th>
<th>Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fare policies and structure</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Fare Collection</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Infrastructure construction and ownership (interchanges, stations, shelters, etc)</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Infrastructure maintenance</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Promotion &amp; Marketing of public transport developments and service (Communications to users)</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Service operation design</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Service planning</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Ownership of operating assets</td>
<td>✔️</td>
<td>(Under NRFF and GCM)</td>
</tr>
<tr>
<td>Vehicles and maintenance facilities</td>
<td></td>
<td>✔️</td>
</tr>
<tr>
<td>Rolling stock maintenance</td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>
STANDARDISING AND REGULATING THE TAXI INDUSTRY

1998

**Deregulation of taxi fares**
Taxi operators to set their own fares, providing more flexibility in price setting according to the cost of service provision and responding to changes in market conditions.

2013

**Launch of Taxi Availability Framework**
Encourage to have more taxis on the road to deter use of private cars.
- Key Standards:
  - 80% of taxi fleet on the road during peak hours.
  - 80% of taxi fleet achieve minimum of daily mileage of 250KM.

2015

**Establishment of Third-Party Taxi Booking Service Providers Act**
Service providers can only operate with licensed taxis and drivers with vocational licenses, and must obtain the certification of registration with Land Transport Authority (LTA).

2016

**Issuance of Public Transport Council (Taxi Fare Pricing Policy) Order 2016**
A step in standardising the taxi fare structure. For example, the unit distance travelled and the unit waiting time must be the same across all taxi companies.

2017

**Introduction of Private Hire Car Driver’s Vocational Licence (PDVL)**
Drivers who wish to provide chauffeured services must obtain PDVL and their cars must be registered with LTA, and display their PDVLs and tamper-evident decal during service. PDVL drivers must also undergo training, pass tests on road and passenger safety, and undergo medical tests and background screening.
LEGISLATION

Land Acquisitions Act

An Act to provide for the acquisition of land for public and certain other specified purposes, the assessment of compensation to be made on account of such acquisition and for purposes connected therewith.

This Act allows the Government to acquire land for any use deemed to be in the public benefit.

Land Transport Authority of Singapore Act
Enacted in 1995 and revised in 1996.

An Act to establish and incorporate the Land Transport Authority of Singapore, to provide for its functions and powers, and for matters connected therewith.

Railway Act
Enacted in 1905 and revised in 1985.

An Act relating to all railways of Singapore, covering construction and works, opening of railway, returns, property tax, responsibility of railway administration as carriers, accidents and railway administration.

Bus Services Industry Act 2015
An Act to regulate the provision of bus services, the operation of bus depots and bus interchanges in Singapore, and to make consequential amendments to certain other Acts.

This act is to be administered by LTA with the respect to the provision in Singapore of bus services and the operation of bus depots and bus interchanges.

Road Traffic Act
Enacted in 1961 and revised in 2004.

An Act for the regulation of road traffic and the use of vehicles and the user of roads and the operation of bus interchanges and for other purposes connected therewith.

Public Transport Council Act
Enacted in 1987 and revised in 2012.

An Act to provide for the establishment of the Public Transport Council to provide for the licensing of ticket payment services, to regulate bus fares, taxi fares and train fares and for matters connected therewith.
Funding of Singapore Public Transport Projects

In FY2016, Ministry of Transport allocated $1.26 billion to LTA mainly in the form of its management fee. This fee represented LTA’s 80% of operating income (a total of $785.8 million) for the services in collecting taxes, fees and charges from related land transport.

Fare Regulation

Singapore adopts a pure distance-based fare policy based on the shortest travel path. The fare review mechanism has been reviewed several times over the years to better ensure the appropriate price index and level of productivity extraction to share the productivity gains with commuters.

Annual Fare Review Process

In 2013, PTC adopted a fare review mechanism recommended by Fare Review Mechanism Committee (FRMC).

Fare Formula = Price Index - 0.5%

Price Index = 0.4cCPI + 0.4WI + 0.2EI
- cCPI: Change in core Consumer Price Index over preceding year
- Wage Index (WI): Change in Average Monthly Earnings (Annual National Average) over the preceding year, adjusted to account for any change in the employer’s CPF contribution rate
- Energy Index (EI): Change in Energy Index which is a composite of cost changes in electricity and diesel
  0.5% = Productivity extraction

The 2013 Fare Review Mechanism adopts a rollover system, where PTC can vary the fare adjustment quantum granted or defer to the next fare review exercise, depending on economic conditions.

The weightage of fare adjustments, in terms of fare allocation at back-end, for bus and train modes also varied, ensuring bus services are benefited under Distance Fares and fostering long-term sustainability of bus services.

Types of Subsidies & Funds

Public Transport Fund

Under Bus Service Operating License (BSOL), operators are required to make an one-off contribution from a portion of the increased fare revenue to the Public Transport Fund. The 2014 Fare Review Exercise, based on operators’ financial situation, required SMRT and SBST to contribute 30% and 25% (approximately $13.5M), respectively, of the increased fare revenue to help needy commuters to cope with the fare increase.

Railway Sinking Fund

Income from the RTS License Charge is paid into RSF to act as asset replacement reserve.

Bus Service Enhancement Fund (BSEF)

Government has set $1.1 billion, over 10 years to finance the Bus Service Enhancement Programme.

Public Transport Manpower Development Fund (PTMDF)

LTA is investing $12.5 million for developing more industry-relevant programmes, sponsorship of study awards and training grants, a skills-based progression framework, as well as an industry-wide branding of the public transport sector.
## MAJOR PLAYERS

### Major Players Active in the Country

<table>
<thead>
<tr>
<th>Name of Operator</th>
<th>SMRT Corporation Ltd</th>
<th>SBS Transit Ltd</th>
<th>Comfort and CityCab</th>
<th>Tower Transit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Head Office, Subsidiaries and Joint Ventures</strong></td>
<td>SMRT Corporation Ltd (Head Office)</td>
<td>SBS Transit Ltd (Head Office)</td>
<td>ComfortDelGro Corporation (Head Office)</td>
<td>Tower Transit Group (Head Office in London)</td>
</tr>
<tr>
<td></td>
<td>SMRT Heng Kong Limited</td>
<td></td>
<td>China (Beijing, Shenyang, UK (London, Glasgow, Liverpool, Aberdeen, Edinburgh), Australia (Sydney, Melbourne, Perth), Malaysia (Kuala Lumpur), Ireland (Galway), Vietnam (Ho Chi Minh)</td>
<td>Tower Transit Singapore</td>
</tr>
<tr>
<td></td>
<td>SMRT Engineering (Middle East) FZE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shenzhen ZONA Transportation Group Co. Ltd (holding 49% equity interest)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Public or Private</strong></td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td><strong>Transport mode covered in Singapore</strong></td>
<td>Train, Bus and Taxi</td>
<td>Bus, Train</td>
<td>Taxi</td>
<td>Bus</td>
</tr>
<tr>
<td><strong>Financials</strong></td>
<td></td>
<td></td>
<td></td>
<td>Under Government Contracting Model, Tower Transit will receive an estimate of $556 million over a 5-Year Contract.</td>
</tr>
<tr>
<td></td>
<td>Rail Operation Profit</td>
<td>Bus Operation Profit</td>
<td>Group Profit after Tax</td>
<td>Operating Profit in Singapore Taxi Industry, 2015</td>
</tr>
<tr>
<td></td>
<td>FY 2016 $7.4M</td>
<td>FY 2016 $5.9M</td>
<td>FY 2015 $19.6M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY 2015 $9.6M</td>
<td>FY 2015 $6.5M</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bus Operation Profit</td>
<td>Group Profit after Tax</td>
<td>FY 2015 $13.7M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY 2016 $17.0M</td>
<td>FY 2015 $108.3M</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Taxicab Operation Profit</td>
<td>Group Profit after Tax</td>
<td>FY 2015 $90.5M</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FY 2016 $11.2M</td>
<td>FY 2015 $90.5M</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Operating Data

| | FY 2016 | 2015 | 2015 | 2016 (Commence operation in May 2016) |
| | | | | |
| **Bus** | | | | |
| Bus Fleet | >1500 | 3656 | N.A. | 380 |
| Bus Routes | 106 | 261 | N.A. | 26 |
| **Rail** | | | | |
| Total Route Length (KM) | 129.8 | 131.2 | N.A. | N.A. |
| Total Car-Kilometres Operated (to nearest million) | 131.2 | 8,322 | N.A. | N.A. |
| **Taxi** | | | | |
| Taxi Fleet | 3550 | N.A. | N.A. | N.A. |
| **Number of employees in Singapore in 2015** | >9500 | 7965 (Bus Division) 1774 (Rail Division) | 12,494 | Approximately 900 |
| **Number of passengers (daily) in 2015** | | | | |
| Bus: Average daily ridership of about 1 million passenger trips | | | | N.A. |
| Rail: Average daily ridership 1.825 million passenger trips. | | | | |
| Bus: Average daily ridership of about 2.83 million passenger trips | | | | |
| Rail: Average daily ridership 710,000 passenger trips. | | | | |
| Estimate of 633,000 passenger trips in 2014 | | | | |
| *Estimation based on market share and total taxi ridership in 2014 |

MAJOR PUBLIC TRANSPORT PROJECTS

Tendered in 2015-2016

In FY2015/16, S$6.6 billion rail projects and S$2.8 billion road projects were commissioned by LTA.

<table>
<thead>
<tr>
<th>Bus Projects</th>
<th>Awarded</th>
<th>Value (S$)</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bulim Bus Package</strong></td>
<td>Tower Transit Singapore</td>
<td>556.0 million</td>
<td>5-year and can extend by 2 years upon completion</td>
</tr>
<tr>
<td>Operate 26 bus services &amp; manage 3 bus interchanges and Bulim Bus Depot</td>
<td>Go-Ahead Group Plc</td>
<td>497.7 million</td>
<td></td>
</tr>
<tr>
<td><strong>Loyang Bus Package</strong></td>
<td>SBS Transit Ltd (SBST)</td>
<td>480.3 million</td>
<td></td>
</tr>
<tr>
<td>Operate 25 bus services &amp; manage 2 bus interchanges and Loyang Bus Depot</td>
<td>Bus Hub Service Pte. Ltd., for route 2&amp;3 - Marsiling/Woodlands &amp; Yishun</td>
<td>3.1 million</td>
<td>2-year contract</td>
</tr>
<tr>
<td><strong>Seletar Bus Package</strong></td>
<td>Aedge Holdings Pte Ltd, for Route 1,4&amp;5 - Yew Tee, Pasir Ris, Tampines East/Simei</td>
<td>5.4 million</td>
<td></td>
</tr>
<tr>
<td>Operate 24 bus services with approximately 420 buses</td>
<td>Details for more City Direct Bus Services tenders, please visit Tender Information on LTA website</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Rail Projects**

Thomas-East Coast Line (TEC Line)
Over 23 tenders were awarded for various aspects of TEC Line, from consultancy work on site investigation to construction of tunnels and stations.

Details for each tender are in LTA Annual Report 2015 or on LTA website

Joint Development Partner for Singapore-Kuala Lumpur HSR
Provide project management support, technical advice and procurement advice relating to high speed railway systems and operations.

The consortium of WSP Engineering Malaysia Sdn Bhd, Matt MacDonald Malaysia Sdn Bhd, and Ernst & Young Advisory Services Sdn Bhd.

34.8 million
2017 to project completion (targeted by end-2026)

**Other Projects**

Satellite-based ERP
Developing the new system, maintenance and hosting services.

The consortium of NCS and Mitsubishi Heavy Industries Engine System Asia (MHI)

556 million
To be implemented by 2020
### UPCOMING PROJECTS

#### Rail Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Tender</th>
<th>Expected Project Period / Commence Date</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thomson-East Coast Line (TEL) Operator License</strong></td>
<td>Limited tender to SMRT and SBS Transit at Q1 2017.</td>
<td>Starting in 2019 with a 9-year contract and possible extension of two years.</td>
</tr>
<tr>
<td><strong>Jurong Region Line (JRL)</strong></td>
<td>Mechanical and Electrical Engineering Services JRL Depot – Awarded to Parsons Brinckerhoff Pte. Ltd. for $77.9M on 27 May 2016.</td>
<td>To be completed by 2025</td>
</tr>
<tr>
<td>20km to connect areas such as Jurong West, Jurong Industrial Estate, West Coast, Choa Chu Kang, Tengah and the main activity hubs at Boon Lay and Jurong Gateway.</td>
<td>Mechanical and Electrical Engineering Services for JRL Mainline – Awarded to Parsons Brinckerhoff Pte. Ltd. for approximately $19.0M on 6 June 2016.</td>
<td>To be completed by 2030</td>
</tr>
<tr>
<td><strong>Cross Island Line</strong></td>
<td>Security Design Study for the Proposed CRL. Closing date 3 March 2017.</td>
<td>For the latest tenders on CRL, please visit Tender Information on LTA website.</td>
</tr>
<tr>
<td>Expected to be 50km linking Singapore’s eastern and western areas.</td>
<td></td>
<td>To be completed by 2030</td>
</tr>
<tr>
<td><strong>Circle Line 6 (CCL6)</strong></td>
<td>Construction of Kim Chuan Depot Extension for CCL6 (For PRE-QUALIFIED TENDERS only). Closing date on 2 May 2017.</td>
<td>To be completed by 2025</td>
</tr>
<tr>
<td>The 4-km CCL6 will close the loop allowing CCL to have a total of 33 stations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For the latest tenders on new and replacement of trains, please visit Tender Information on LTA website.</td>
<td></td>
</tr>
</tbody>
</table>

#### Bus Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Tender</th>
<th>TBC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Network Scheduling &amp; Management System</strong></td>
<td>To be tendered in FY16/17</td>
<td>A three-and-a-half year project to develop two 40-seater electric buses and be tested in various environments.</td>
</tr>
<tr>
<td><strong>Partnership agreement to develop and trial autonomous buses</strong></td>
<td>ST Kinetics was shortlisted under LTA’s Request for Information on June 2015</td>
<td></td>
</tr>
</tbody>
</table>

#### Road Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Tender</th>
<th>2017 - 2026</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>North-South Corridor</strong></td>
<td>Pre-tender commenced and Selective Tendering Procedure for Design and Construction on various sections are underway.</td>
<td>For the latest tenders on North South Corridor, please visit Tender Information on LTA website.</td>
</tr>
<tr>
<td>21.5 km of 1st integrated transport corridor featuring cycling trunk routes and continuous bus lanes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: LTA Press releases and Tender Information on LTA Website. Retrieved on April 20, 2017
USEFUL LINKS

Public Transport Tenders & Projects

Land Transport Authority
https://www.lta.gov.sg/apps/tender/

SMRT Corporation Ltd

SBS Transit Ltd

Data & Statistics

Land Transport Authority

My Transport SG
https://www.mytransport.sg/content/mytransport/home/dataMall.html

Government of Singapore
https://data.gov.sg/