The Evolution of Singapore’s Private Vehicle Policies

Presentation by Dr Waiyan LEONG
Chief Transport Economist
Land Transport Authority of Singapore

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**Singapore: Densely Populated, Highly Urbanized City-State, Limited Land Space**

Population: 5.64 million  
Land Area: 734.3 km²

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Proportion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>15%</td>
</tr>
<tr>
<td>Industry &amp; Commerce</td>
<td>13%</td>
</tr>
<tr>
<td>Roads</td>
<td>12%</td>
</tr>
<tr>
<td>Others</td>
<td>60%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Ministry of National Development, Singapore

Disclaimer: These are my personal reflections, and do not necessarily reflect that of Singapore’s Land Transport Authority
Challenge: Limited Scope to Increase Road Capacity Without Compromising Security, Liveability and Economic Development

We cannot expand our road network indefinitely given our land constraints.

We also need to restrict access to and usage of private cars.

Excerpts from speech by Founding Prime Minister Lee Kuan Yew at the Official Opening of the Singapore MRT System, 12 Mar 1988 (credit: National Archives, Singapore)
Managing Private Transport Demand: Combination of Hard Ownership & Usage Measures

<table>
<thead>
<tr>
<th>% of Car Owning Households</th>
<th>US</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>92%</td>
<td>35%</td>
</tr>
<tr>
<td>Source: Forbes, ChannelNewsAsia</td>
<td></td>
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</tr>
</tbody>
</table>

Allowing more Singapore households to own a car is a luxury we can ill afford.

With radial land use patterns and tidal nature of traffic flows between the CBD and suburbs, congestion hotspots will emerge if nothing is done.

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Vehicle Usage Measures – Congestion Pricing via Area Licensing Scheme (ALS)

- **ALS implemented in 1975 as price mechanism to discourage car usage into congested parts of CBD, designated as “Restricted Zone” (RZ).**

- **Immediate 44% decrease in no. of motor vehicles entering RZ during restricted hours.**

- **Shortcomings include inflexibility to respond to time-varying demand and labour-intensive enforcement.**

Source: Land Transport Authority, Singapore

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Vehicle Usage Measures – Congestion Pricing via Electronic Road Pricing (ERP): Current & Future

Current ERP Gantry

- Allow variable and per-entry charges to better reflect marginal external costs of each car trip, and encourage motorists to choose the most optimal time, route and transport mode for their journeys.

- ERP rates are reviewed quarterly and changes published ahead of implementation to allow motorists to make informed trip decisions.

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Next-Generation ERP System

- Transiting to “infrastructure-lite” Next Generation (nexgen) ERP system in future.

- Provides value-added services beyond congestion charging, such as real-time traffic information.

Source: Ministry of Transport, Singapore
What Lies Ahead for Nexgen ERP to Support the Future Evolution of Road Pricing Policy?

Our congestion pricing framework is not likely to change in the near future…

Fewer than 1 in 4 ERP gantries in use today, even as rates at some locations go up

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… but there are structural shifts beyond congestion pricing

80% reduction in peak land transport carbon emissions by or around 2050
Personal Reflections on Possible Pricing Policy Frameworks in Future

• Distance-based charging not just for congestion management, but also to help meet climate targets?

• Differentially charging vehicles according to their emissions intensity?

• As a form of “shoulder pricing” in anticipation of road reclamation?

• Tradeable driving credits?

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Vehicle Ownership Measures

They complement vehicle usage measures in controlling vehicle population in Singapore.

**Taxes and Import Duties**

- Introduced in 1950s as an ad valorem duty on vehicle's open market value.
- Import duties on cars and stiff road taxes were also introduced.

**Vehicle Quota System:**

**Certificate of Entitlement (COE)**

- Introduced in 1990 to limit number of vehicles at a level "below that a free market in vehicles would create". (Excerpts from Singapore Centre for Liveable Cities publication – Transport: Overcoming Constraints, Sustaining Mobility, 2021)
- Control vehicle growth rate that could be sustained by our road network. Annual growth rate for cars and motorcycles has been 0% since 2018.
- COEs are allocated through an auction mechanism.

Source: Centre for Liveable Cities, Singapore

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Principles of the Vehicle Quota System (VQS)

Five Principles of VQS

- Equity
- Stability
- Responsiveness
- Efficiency
- Effectiveness

Different Categories of VQS

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Category A</td>
<td>Mass-Market Cars(^1)</td>
</tr>
<tr>
<td>Category B</td>
<td>Luxury Cars(^2)</td>
</tr>
<tr>
<td>Category C</td>
<td>Buses and Goods Vehicles</td>
</tr>
<tr>
<td>Category D</td>
<td>Motorcycles</td>
</tr>
<tr>
<td>Category E</td>
<td>Any type of vehicle except motorcycles</td>
</tr>
</tbody>
</table>

\(^1\) Non-fully electric cars with engines up to 1,600 cc and Maximum Power Output up to 97 kW (130 bhp); and fully electric cars with Maximum Power Output up to 110kW (147 bhp)\(^9\)

\(^2\) Cars with engine capacity above 1,600cc or maximum power output above 97kW

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Source: Land Transport Authority, Singapore
Multi-Pronged Approach for a Resilient and Sustainable Land Transport System

1. Transform Singapore into a car lite society

   **Target 1**
   **20-Minute Towns**
   All journeys to the nearest neighbourhood centre using public, active and shared modes of transport are completed in less than 20 minutes.

   **Target 2**
   **45-Minute City**
   9 in 10 peak-period journeys using public, active and shared modes of transport are completed in less than 45 minutes. This will help the average peak-period commuter to save about 15 minutes every weekday.

2. Polycentricity to bring jobs closer to homes

3. Facilitate sustainable transport and green commutes

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Source: Land Transport Authority, Singapore
Thank You!
Leong_wai_yan@lta.gov.sg

Reference materials are available on request