

High-level Dialogue on Implementing  
Rio+20 Decisions on Sustainable Cities and Transport  
Berlin, Germany. 19-21 June 2013

# **Sustainable Land Transport System**

**— Singapore's experience**

**Dr. George Sun**  
**Land Transport Authority (LTA)**  
**Singapore**





# Outline

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- **Introduction**
- **Singapore's experience**
  - **Integrated Planning & Development**
  - **Land Transport Strategies**
  - **Demand Management**
- **Summary**





# Introduction

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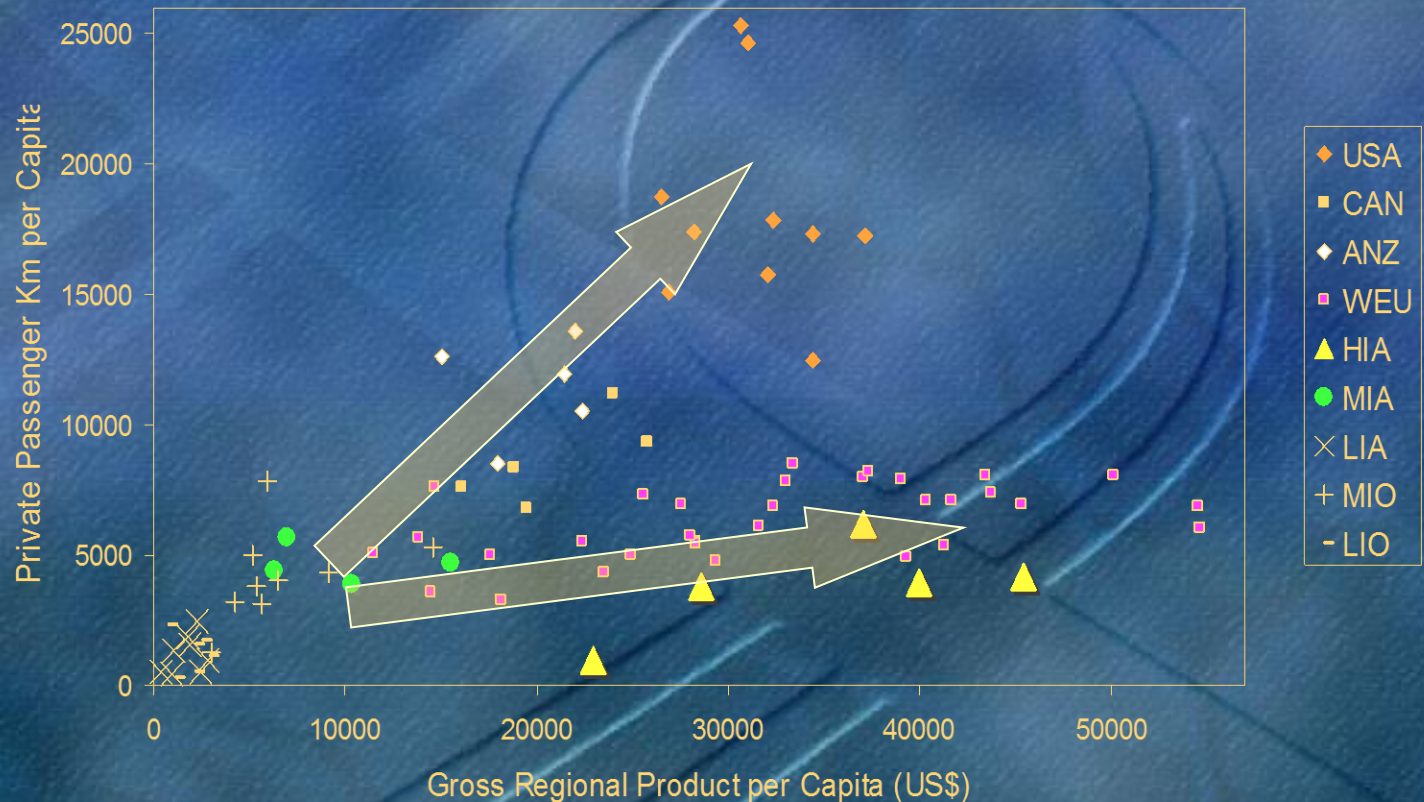
Cities and Transport  
Sustainable Development





# Cities and Transport

- Automobile dependent cities
- Cities with “balanced” transport



Source:  
Barter et al. (2003)



# Automobile Dependent Cities

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Adjust cities to cars:

- Extensive construction of freeways → fast travel by car
- Transit services neglected → auto dependency: traffic congestion ↑
- Pedestrians neglected
- Retail and many other activities relocated from central cities to suburban malls





# Cities with “Balanced” Transport

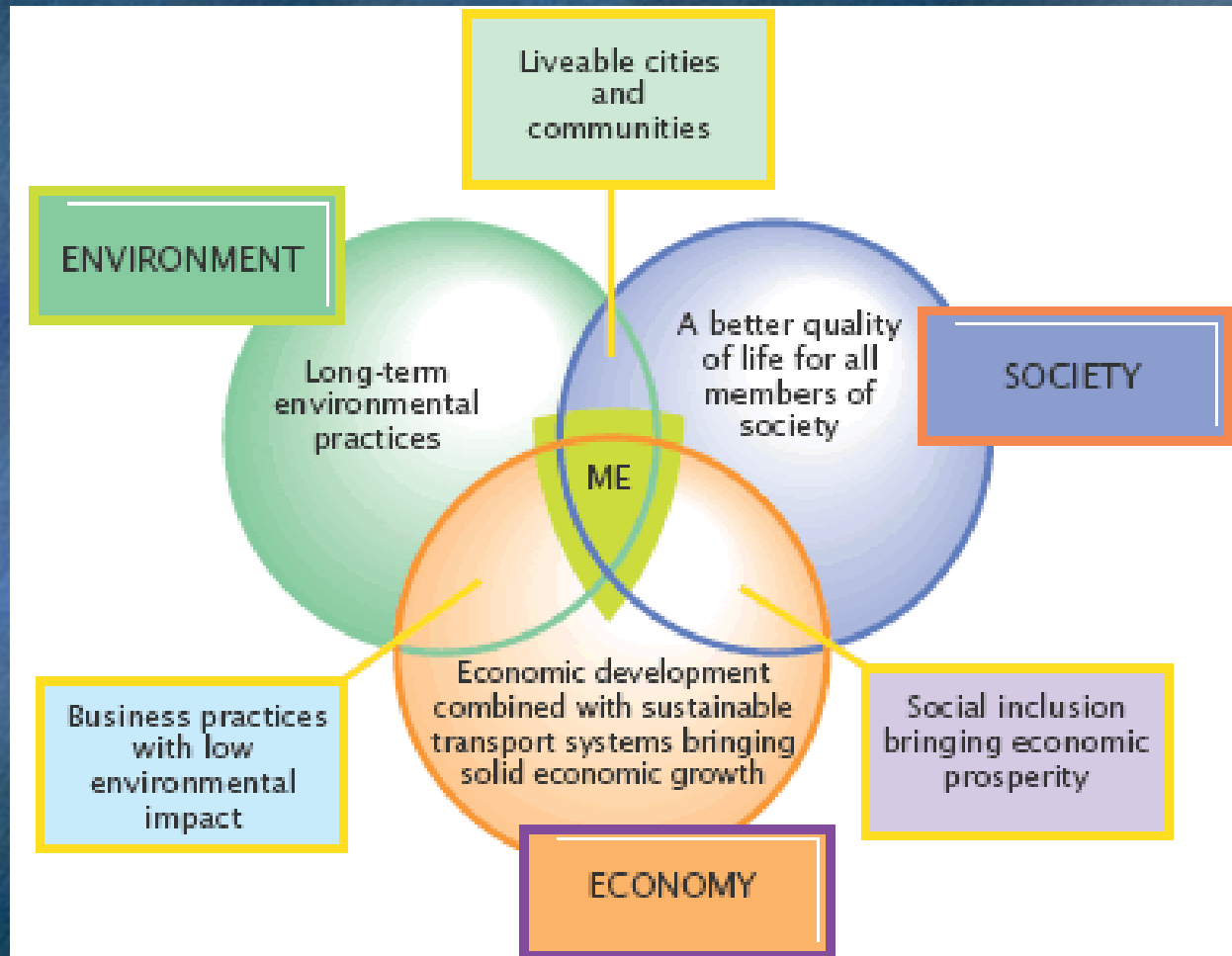
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Develop integrated transport systems:

- Improve public transport services parallel with highway/ street growth
- Develop coordinated modes
- Encourage pedestrians
- Enhance cities' liveability → ***sustainability***



# Sustainable Development



Source:  
UITP – International Association of Public Transport



# Integrated Planning and Development

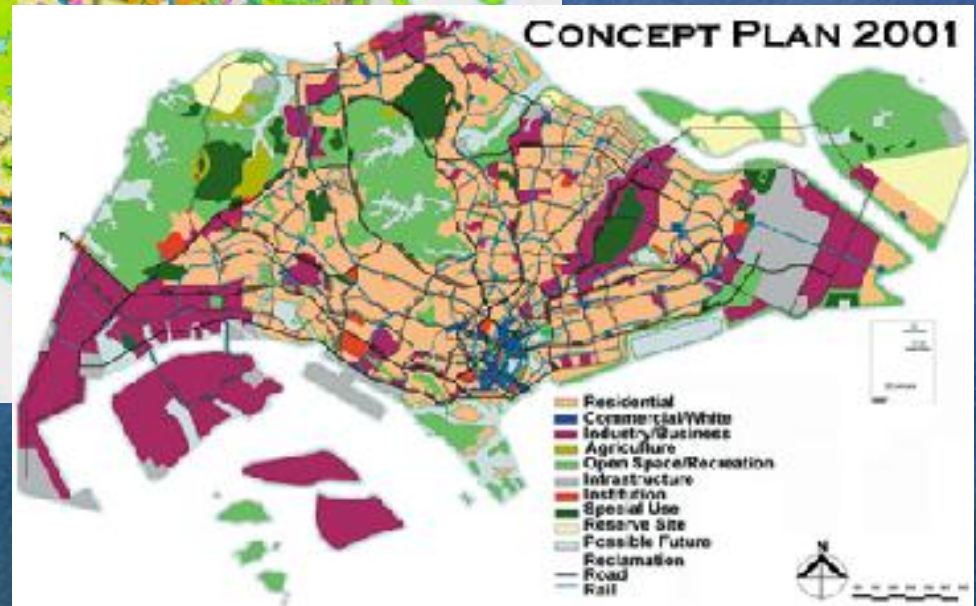
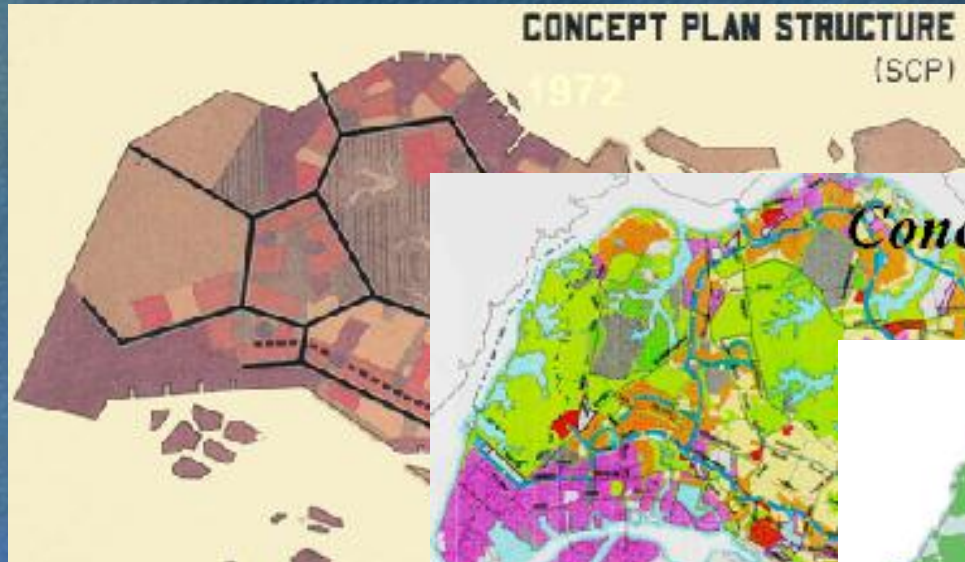
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Long-term Planning  
Whole of Government Approach  
Land Use Plan 2013





# Long Term Planning



- **Concept Plan 2011** maps out directions into the 2050s



# Whole of Government Approach

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**Land Transport Authority (LTA)**  
land transport planning and development



**Housing & Development Board (HDB)**  
provide public housing for the population



**Urban Redevelopment Authority (URA)**  
overall urban planning



**National Parks Board (NPB)**  
manage parks and greenery



**Jurong Town Corporation (JTC)**  
industrial developer



# Land Use Plan 2013

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- To ensure Singaporeans continue to enjoy a high quality living environment



Building good affordable homes



Becoming a city in a garden



Greater mobility with enhanced transport connectivity



Sustaining a vibrant economy with good jobs



Ensuring room for growth and a good living environment in the future



# Land Transport Strategies

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More connections  
Better services  
Inclusive, liveable environment





# 3 Key Strategies

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## A People-Centred Land Transport System



More  
Connections



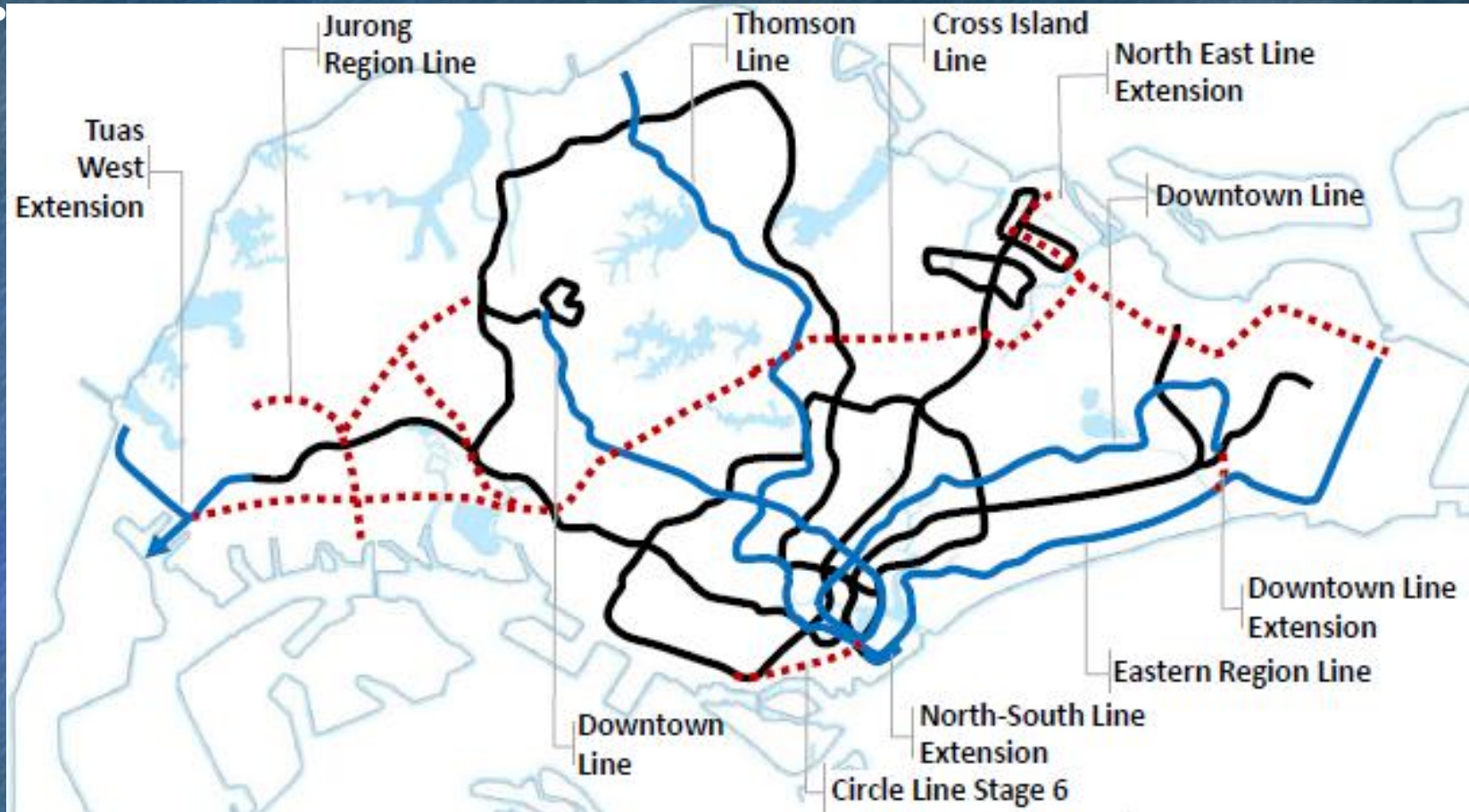
Better  
Services



Inclusive,  
Liveable  
Environment



# More Connections



**178km ➡ 360km by 2030**

**8 in 10 households within 10-minute walk of a rail station**

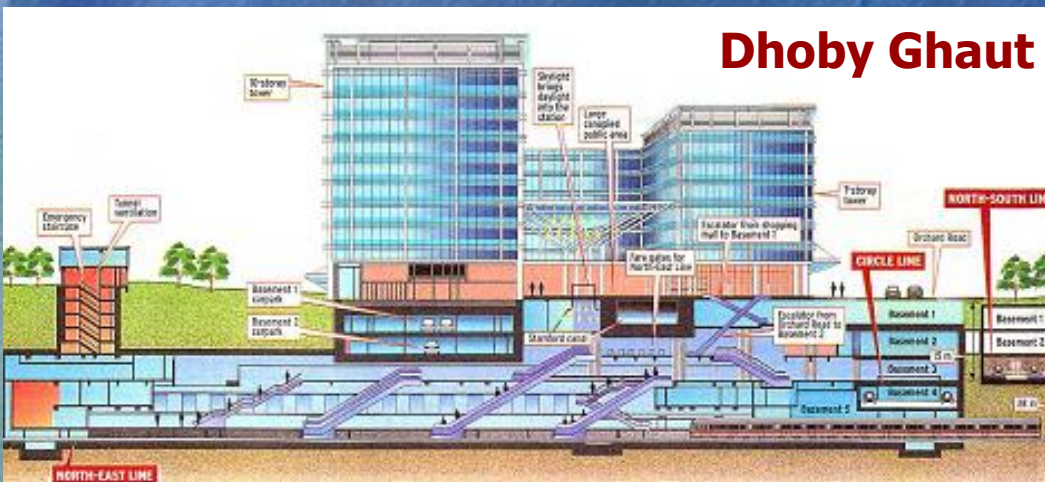
## Legend

- Existing Rail Lines
- Land Transport Masterplan 2008 Rail Lines
- ... Land Transport Masterplan 2013 Rail Lines



# More Connections

- Integrate land use/ transport planning with other agencies
- Integrated transport facilities with mixed use building developments





# More Connections

- Integrated Public Transport Hubs

- Existing
- Upcoming



Ang Mo Kio Hub



Upcoming Bt Panjang Hub



Toa Payoh Hub





# Better Services

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## Increasing Capacity of Existing MRT Lines

- Re-signalling of North-South Corridor to increase 20 per cent capacity during peak hours
- New trains added on North-East Line

## Bus Services Enhancement Programme

### More Buses, Better Rides



**800 more buses**

**20% bigger bus fleet**  
by 2016

- New bus routes to improve connectivity, some will run parallel to existing MRT lines to offer more choices



# Better Services

- More Priority for Buses

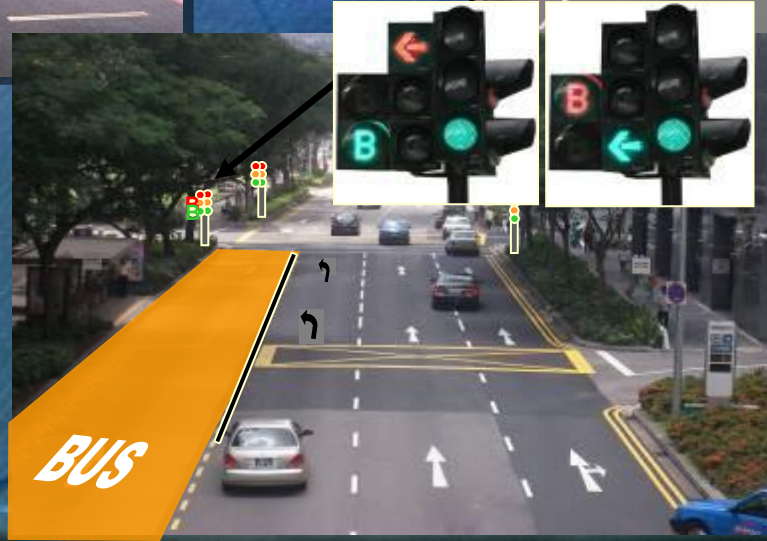
Full day bus lanes



Mandatory give-way at bus bays



Signal priority  
at junctions  
for buses





# Better Services

- Enhance commuter experience

## Premium bus services



## Upgraded Bus Stops



## Upgraded Bus Poles



## CEPAS Smartcard



## Bus services map



## Real-time bus arrival info



## Travel Information System



- SMS
- internet
- hotline

## MyTransport.SG





# Inclusive, Liveable Environment

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## Walk2Ride

- Sheltered linkways
- Lifts at pedestrian overhead bridges
- Enhancing overall walking experience



## Noise Abatement Measures

- 20 km of noise barriers along elevated tracks



# Inclusive, Liveable Environment

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## Facilitate Cycling

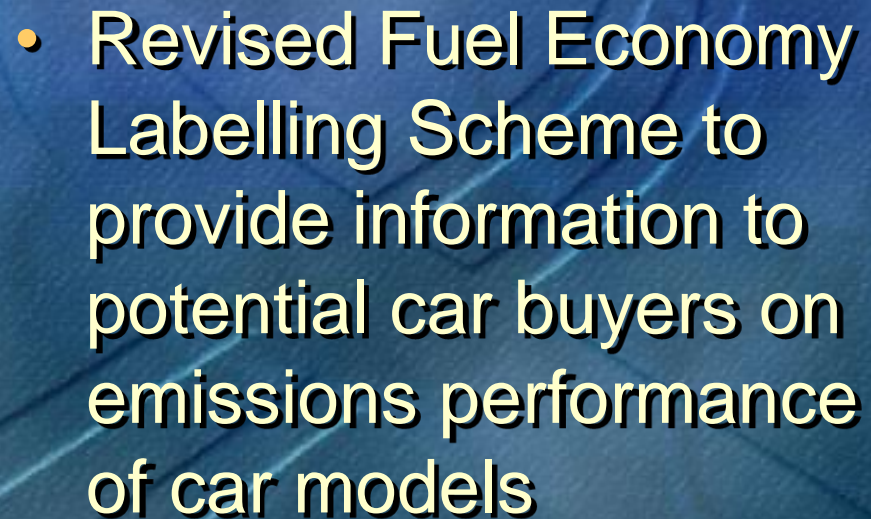
- Develop cycling paths to transport nodes
- Assist in implementation of shared footways
- Provide better bicycle parking facilities at public transport nodes
- Allow foldable bicycles on trains & buses
- Safety signs along cycling routes







- Low carbon emission car models enjoy rebates between \$5,000 and \$20,000
- Surcharges will be levied for high carbon emission models with effect from 1 July 2013





# Inclusive, Liveable Environment

- EMA & LTA co-lead multi-agency EV Taskforce
- EV Test-bed from June 2011 to Dec 2013

Mitsubishi iMiEV



Daimler Smart Ed



Renault Fluence



Nissan Leaf



• Quick charging  
• station @ Braddell

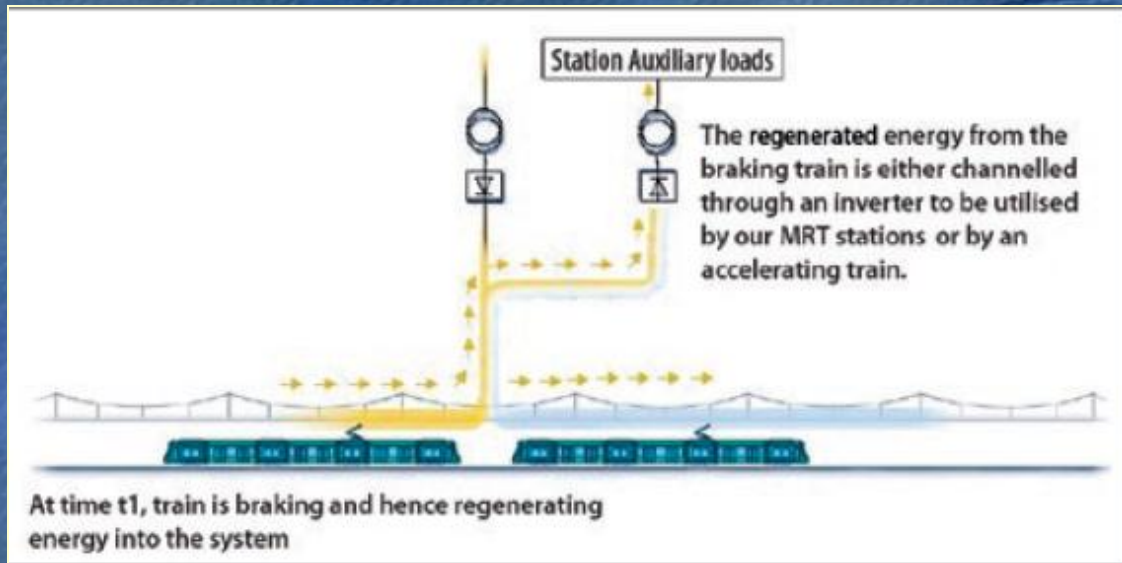
Robert Bosch to develop and deploy up to 60 normal and 3 quick charging stations, operate until end of 2016





# Inclusive, Liveable Environment

- Green Mark for RTS system
  - Energy saving measures in MRT system



- Trial on Diesel Hybrid Bus technology



- LED traffic lights and pedestrian overhead bridges



# Demand Management

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## Ownership Control

- Vehicle Quota System (i.e. COE)
- Other ownership costs
  - Additional Registration Fee (ARF)
  - Excise duty
  - Road tax

## Usage Restraint

- Electronic Road Pricing (ERP)
- Petrol duty



# Vehicle Quota System (VQS)

- Introduced in 1990
- Mechanism to control vehicle growth
- Certificate of Entitlement (COE)
  - valid for 10 years
- Open bidding on the Internet
- Twice a month

## June 2013 1<sup>st</sup> Bidding Exercise for COE

	Quota	Quota Premium	Bids Received
<b>NON-TRANSFERABLE CATEGORIES</b>			
Category A (Cars <= 1,600cc)	341	\$67,301	855
Category B (Cars >=1,601cc)	302	\$75,000	732
Category D (Motorcycles)	511	\$1,701	616
<b>TRANSFERABLE CATEGORIES</b>			
Category C (Goods veh & buses)	227	\$57,989	292
Category E (Open)	239	\$76,000	534



# Electronic Road Pricing (ERP)

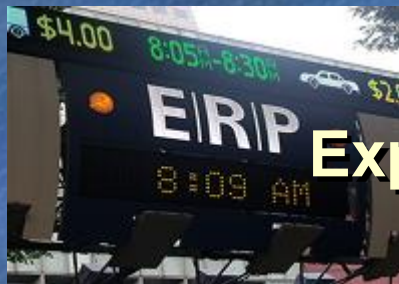
- Implemented in 1998
- Replaced the manual Area Licensing Scheme (ALS) since 1975





# Electronic Road Pricing (ERP)

- ERP is a congestion management tool
- Review speed range at 3-month interval, adjust ERP charge rate (in half-hour slots)



Expressways

45 kph

65 kph

Increase

Decrease

Increase

Decrease

20 kph

30 kph

City & Other Roads



# Travel Smart



for commuters

**insinc**



*SMRT's Early  
Travel Discount*

Travel Early,  
Travel Free



for employers

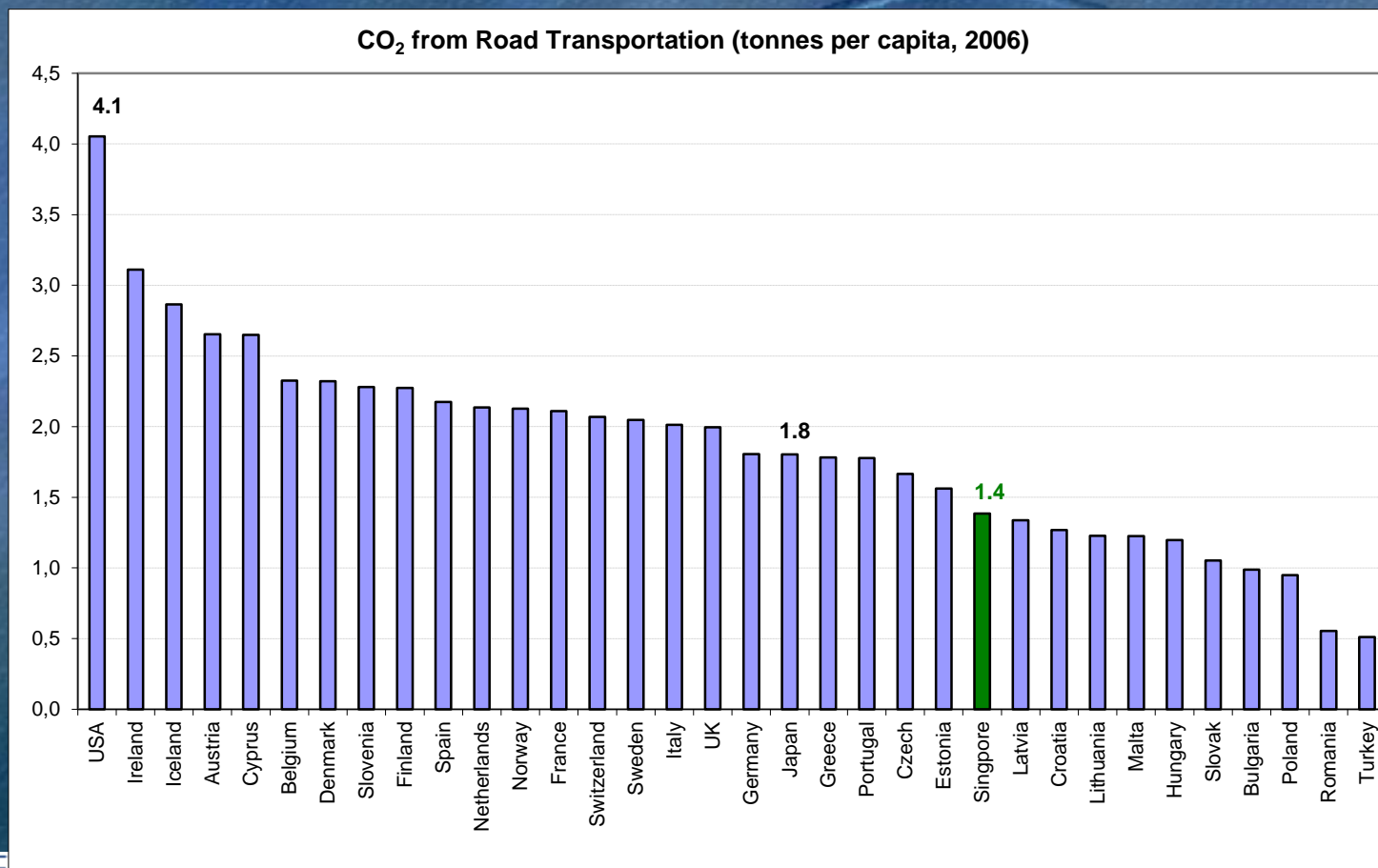
Workplace-based  
Travel Planning





# Summary

- Cities with a “balanced” transport approach result in lower carbon emissions





# Summary

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- ✓ Sustainable Development
  - Social inclusiveness
  - Economic development
  - Environment protection
- ✓ Singapore's people-centred land transport system is delivered through
  - Integrated planning and development
  - Commuter-centric land transport strategies
  - Demand Management
- ✓ Sustainable transport is a key element in the development of sustainable cities



# Thank You



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LTA-UITP Singapore International Transport  
Congress and Exhibition (SITCE) 2013



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