

# Cheat Sheet

# Traffic Congestion

## Causes : Effects : Solutions



### Do you know?

#### Land Usage in Singapore

12% of land for road network  
14% of land for housing

Source : Land Transport Authority (2013)



#### Worst City for Traffic Congestion

"Jakarta ranked top among 78 cities for traffic stops and starts in a study published this year by motor oil firm Castrol"

Source : Greenfield, Charlotte (17 April 2015)

#### Land Scarce Cities

Many cities like Hong Kong, London and New York rely on space-efficient and environmentally-sustainable public transportation systems

### Causes and Effects



#### Some effects caused by traffic congestion:

- Economy : loss of productive hours and business opportunities and wasted fuel
- Environment : pollution (air and noise)
- Health : stress-related and respiratory health problems

Traffic congestion is a common occurrence in major cities. Some of the **possible causes** are:

- Rapid economic growth
- Employment opportunities in cities
- High fuel subsidies
- Preference for car ownership
- Barriers and obstacles on roads
- Environmental factors e.g. flash floods
- Intricate road networks
- Lack of alternative public transport options
- Poor land use and transport planning

\$124 billion  
in losses in the  
United States



# Possible Solutions



## Road system

- Barrier-free highways
- High Occupancy Vehicle lanes
- Integrated transport and land use



## Restraint measures

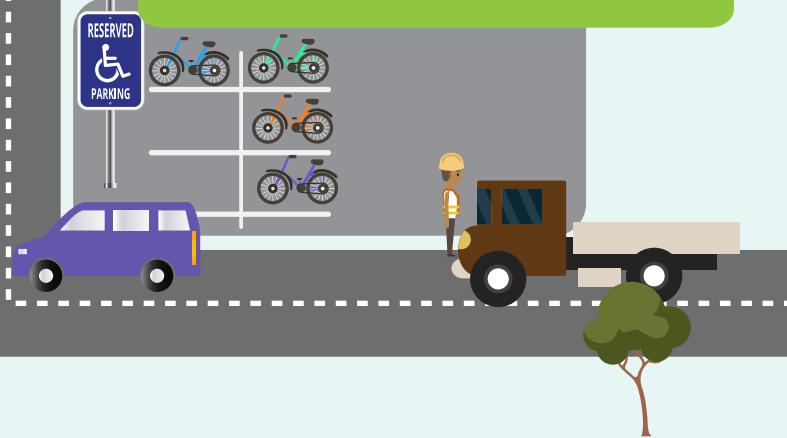
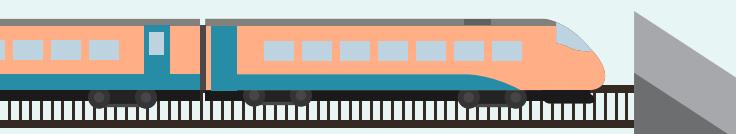
- Expressway Monitoring Advisory System
- Parking Guidance System
- High parking charges in Central Business District (CBD) areas
- Vehicle Quota System such as Certificate of Entitlement (COE)

## Managing demands

- Park and Ride scheme
- Dedicated bicycle lanes
- Public transport usage rebates
- Car-pool
- Low emission zones

## Public transport

- Incentives e.g. free train rides during off-peak periods
- More efficient and reliable mass rapid transport system
- Extensive network that promotes cycling and walking as alternative options to commuting



## Do you know?

Singapore was the first city in the world to manage road congestion by implementing an Electronic Road Pricing system. ERP has since been used as a reference by other cities like London.

Source : Land Transport Authority website. Retrieved on 8 May 2015 from <http://www.lta.gov.sg/content/ltaweb/en/roads-and-motoring/managing-traffic-and-congestion/electronic-road-pricing-erp.html>



E|R|P  
In Operation



# S.U.R.E. steps

## How is Singapore managing its traffic congestion situation?

Source

① Current discussions on this topic

Scenario:

- Current and future
- What are the causes and effects?

Understand

Research

Evaluate

② Solutions

Possible solutions:

- Short term
- Long term
- Include pros and cons

③ Conclusions

- Consider all arguments and viewpoints
- Use facts to support your final views

### Source

- A possible first step to starting your research is to get access to a variety of sources such as official websites, newspaper articles, discussion forums, online blogs, documentary programmes and news broadcasts, as these will help you to define the scope of coverage
- By reading through these resources, you will get some ideas on the issues and concerns surrounding the research topic

### Brief Explanation

### Understand

- Draw up a list of guiding questions and list the research areas which you want to cover
- Define the research scope
- Seek clarity on what you are reading by looking at the key areas associated with the topic



### Research

- Now think deeper for possible answers to some of the un-answered questions
- Conduct in-depth research on the specific areas by looking for other sources of information such as master plans, surveys and findings and journal articles
- What are the causes and effects of traffic congestion?
- Think of possible scenarios
- What are the keywords associated with traffic congestion?

### Evaluate

- Analyse and consider every single argument and viewpoint  
Is traffic congestion a major problem in Singapore? Which other countries are also facing it?



## Research Guiding Questions

### Introduction

1. What is traffic congestion?
2. Describe the traffic situation in Singapore



### Problems

1. List some of the major causes of traffic congestions in Singapore
2. Identify the major effects of traffic congestion
3. Identify one city in Asia that is facing traffic congestion problem



### Solutions

1. List some of the urgent practical solutions that are required now to address the problem
2. What are the measures taken by the respective government agencies to counter the traffic congestion problem?
3. Identify the short and long term strategies
4. What roles can the road users and the public play to solve the problem?

You are encouraged to develop your own list of research questions

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