

# 4th IRF Regional Conference on Road Safety

## Advanced Traffic Management System

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We would not have needed a traffic management system if this was the condition of traffic



But times have changed and hence the traffic conditions

# How important is traffic management in India?



Total number of motor vehicles on Indian Roads– 72.7 million.\*

3 km of road available per 1000 population.\*

# Is the traffic condition in India different



Heterogeneous traffic in India



Multimodal vehicular traffic sharing the same road space.



# Fatalities and accidents on Indian Roads

Every year road accidents cost India around 3% of its GDP.\*

India has highest number of deaths from road accidents with 1.3 lakhs road accidents

Roads carry 90% passenger traffic \*

Mortality rate per 10,000 vehicles is 14 compared to less than 2 for developed countries\*

\* – World Bank





Percentage

77.91%

# Cause of accidents



Efforts can also be taken to avoid accidents due to drivers fault.

Improvement on this front can help reducing accidents

17.40%



1.36%

2.01%

1.32%

Drivers Fault

Pedestrian/  
Passengers  
fault

Mechanical  
defect in  
vehicles

Bad Roads

Other factors

- *Poor road signage*
- *Non-Functioning road sign*
- *Absence of rear reflectors*
- *Bad weather etc.*

*Organizations responsible for ensuring road safety*



National Road Safety Council

National Highways Authority of India

Transport, Police, Health & Road agencies at state level

Department of Road Transport and Highways



# Advanced Traffic Management System



To install a 24\*7 incident detection system for-

Monitoring congestion,

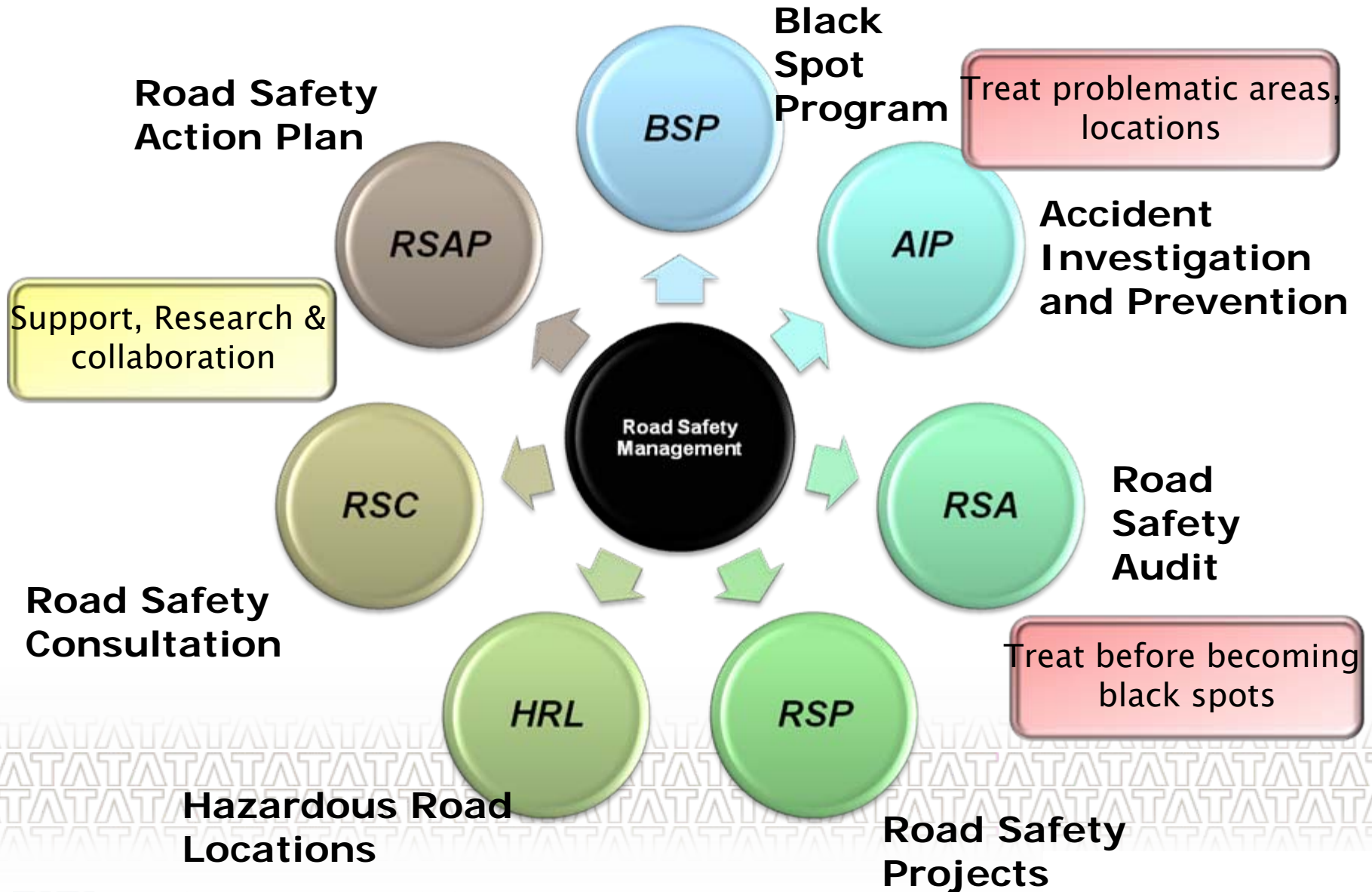
Monitoring route diversion

Provide real time recording  
at major traffic  
points, highways

A grid of numerous light bulbs is shown against a dark background. One bulb in the center is brightly lit, while all other bulbs are dim and unlit. A pink rounded rectangle is positioned at the top center of the image, containing the text.

*Best practices around the world*

# Singapore- A road safety management model





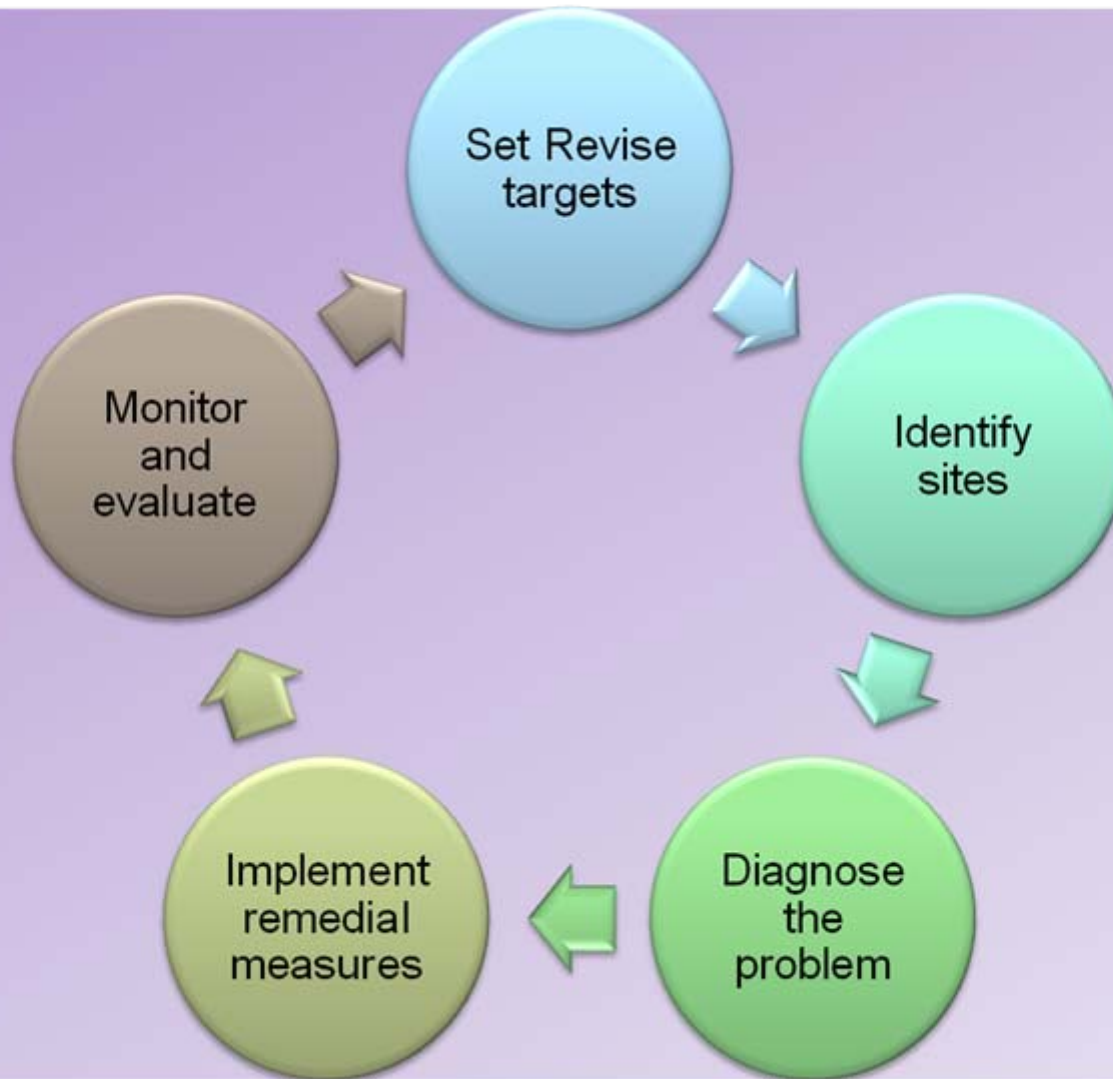
Black Spot Program



Implement necessary counter measures

To identify problematic locations with frequent accidents

Systematic way to tackle accident prone locations



*The Black Spot Program Cycle*

# Hazardous Road Locations Program



A proactive & preventive measure to treat accident prone sites

Usually based on feedbacks and suggestions from citizens

Provide Remedial measures such as Traffic signs etc.



## Road Safety Action Plan

### **Encouragement**

- Coordination and management of road safety
- Road safety funding and role of insurance industry

### **Education**

- Road Safety Publicity Campaign
- Road Safety education of children
- Driver training and testing

### **Enforcement**

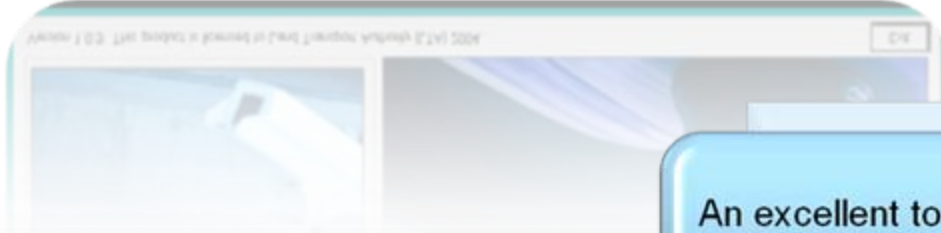
- Enforcement
- Legislation

### **Emergency Preparedness**

- Emergency assistance to accident victims



Traffic Accident Analysis Module



An excellent tool for improving road safety

Accident database manager and analyzer

Accident history along all Singapore Roads



# Advanced Traffic Management Systems implemented



Cooperative  
Intersection  
Collision  
Avoidance  
Systems

Electronic  
Freight  
Management

Emergency  
Transportation  
Operations

Integrated  
Corridor  
Management  
Systems

Integrated  
Vehicle Based  
Safety  
Systems

## Some of the automated and intelligent traffic management initiatives in US

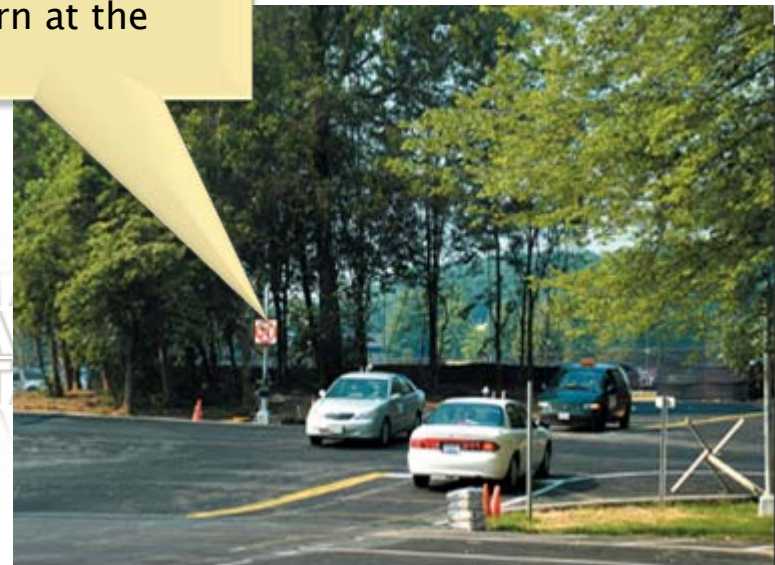
### Forward collision warning system

- Radar Sensors
- Camera
- Ultra sonic sensors

LED panels on either side of front windshield for collision warning

Illuminated display warns Drivers that it is unsafe to make a left turn at the intersection

The electronic stop sign illuminates during red light phase



# Takeaways from the best practices



A proactive and preventive initiative on the similar lines Of Black spot program and Hazardous Road Location.

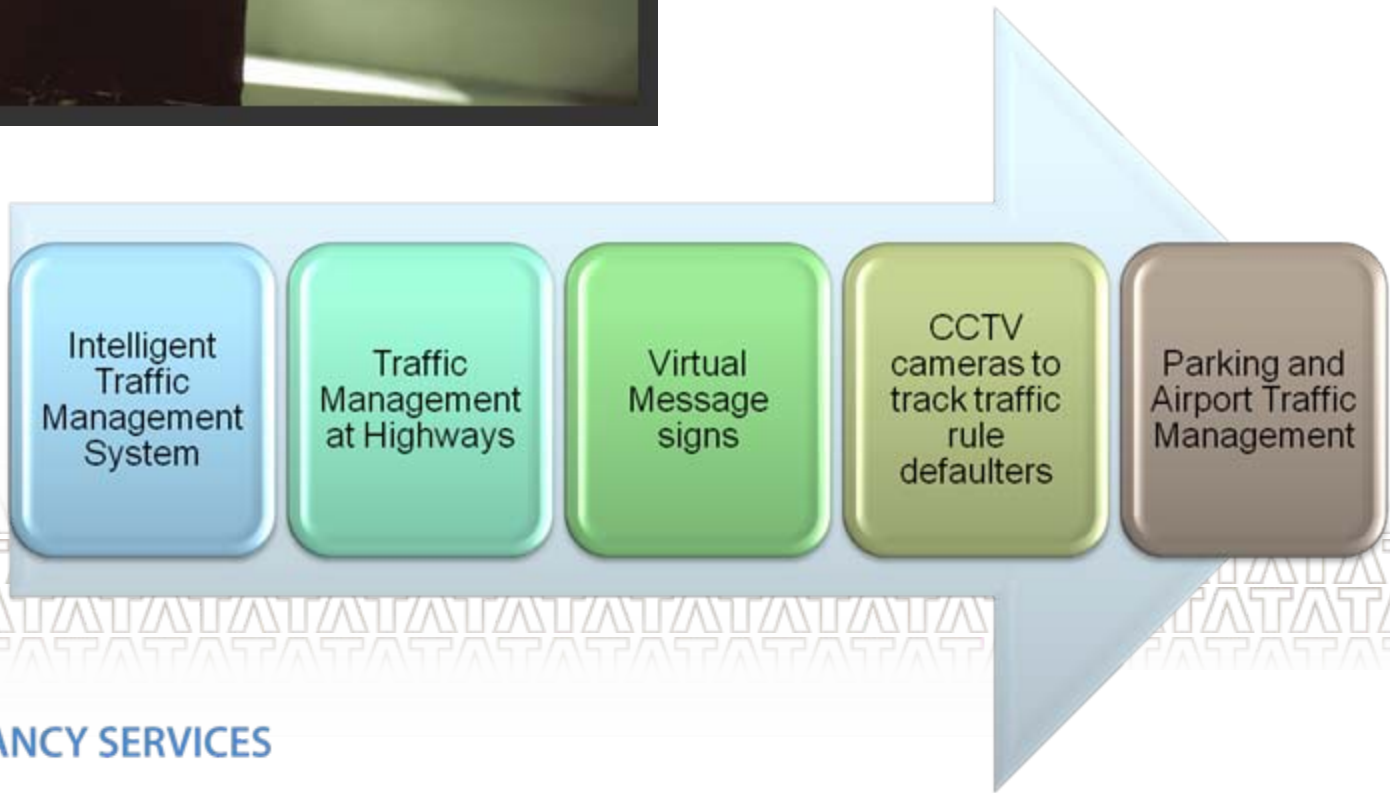
An automated traffic management module for centralized and efficient traffic management.

Intelligent traffic management initiatives to lower down the fatalities and number of accidents

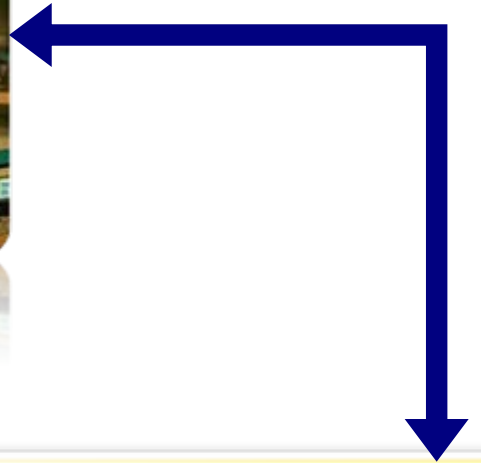
A clearly defined roadmap for restructuring the traffic management system in the country



*A solution for traffic management system in India*



# Intelligent Traffic Control System– a solution to prevent congestion and traffic accidents



Speed and red light surveillance

Junction Control System

Traffic Surveillance camera

Internet and SMS Service

Enhancement of Incident management Simulation Statistics

# 24/7 Monitoring through Control Rooms



24/7 Traffic Monitoring

Surveillance through CCTVs

Strictly enforced traffic rules



**TRAFFIC ISSUE**

# How do we take measures to avoid accidents on highways?

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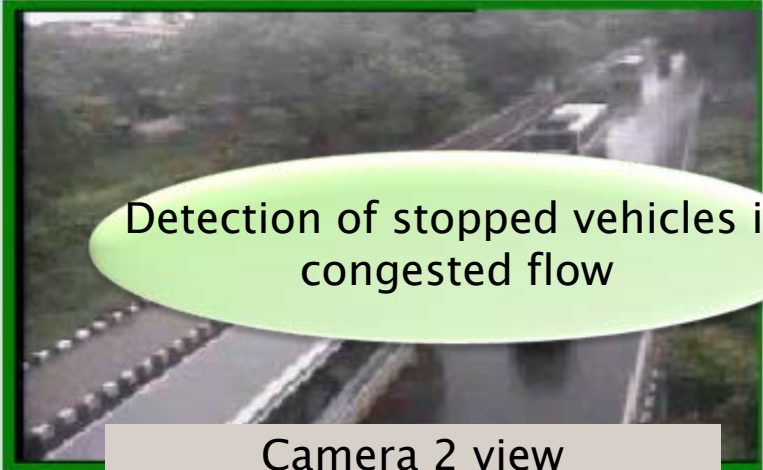
# Traffic Management at highways



Camera 1 view

Le  
Ri

1-FIX N H-2 Ashram dir



Detection of stopped vehicles in congested flow

Camera 2 view

2-PLZ NH2 Ashram dir



Camera 3 view

3-Fix NH2 Mathura dir



Detection of vehicles in wrong Direction.

Camera 4 view

4-Fix NH-2 Mathura dir

Efficient traffic monitoring



# Variable Message Signs



**Benefits Available**

*Reduces traffic accidents*

*Better traffic management*

*Reduces traffic congestion*



**DO NOT OVERTAKE WITH CAUTION  
DELHI TRAFFIC POLICE**

**OBEY SIGNS PAY NO FINE  
DELHI TRAFFIC POLICE**

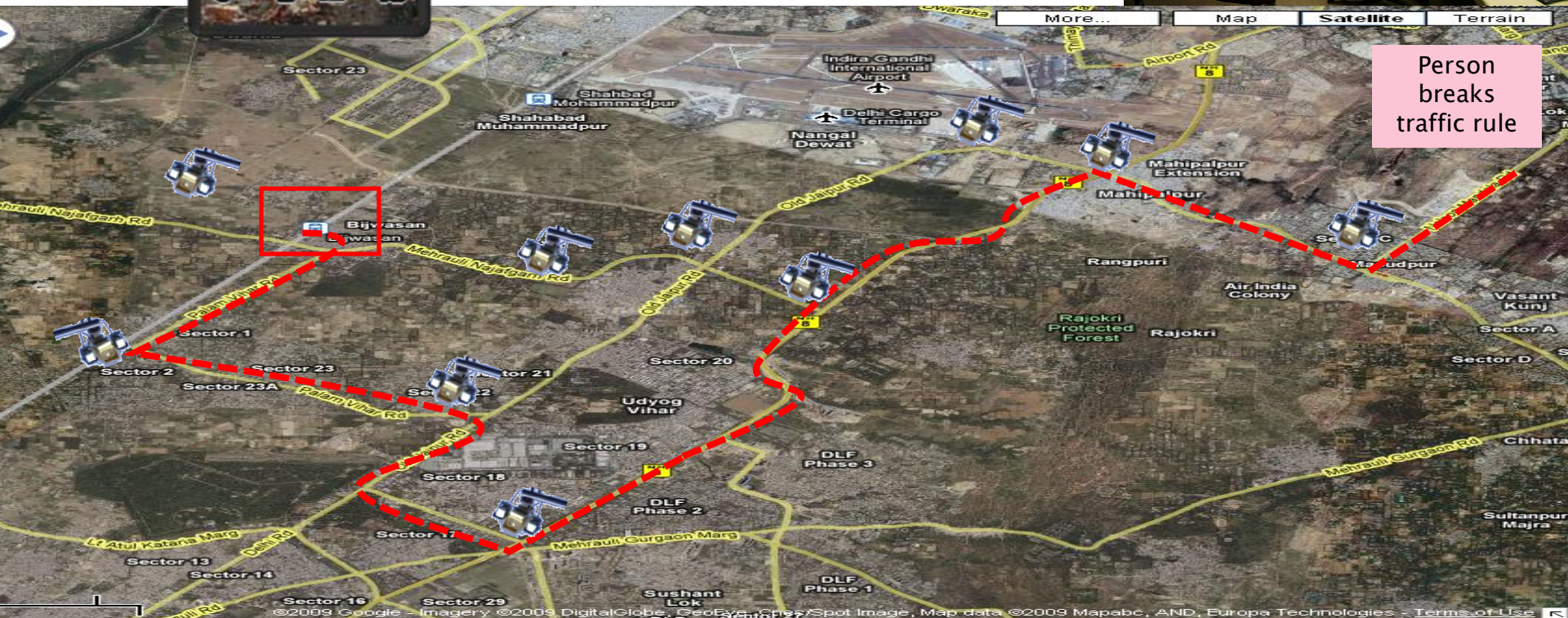
# How many times do we risk our lives by violating traffic signals?



# Vehicle Tracking



Number Plate



Person breaks traffic rule

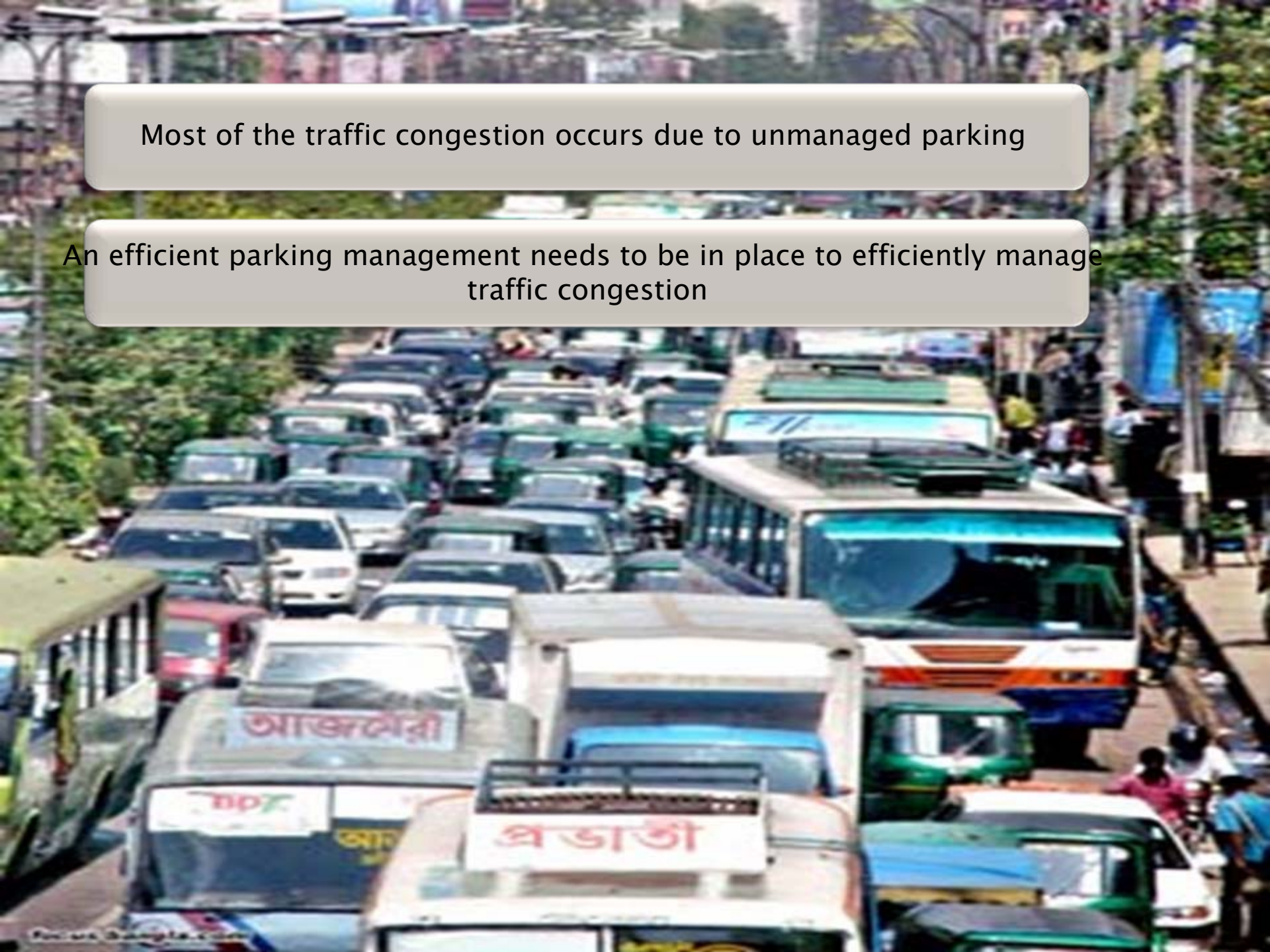
A person breaks the Traffic rule.

Defaulters' vehicle description/number plate is captured

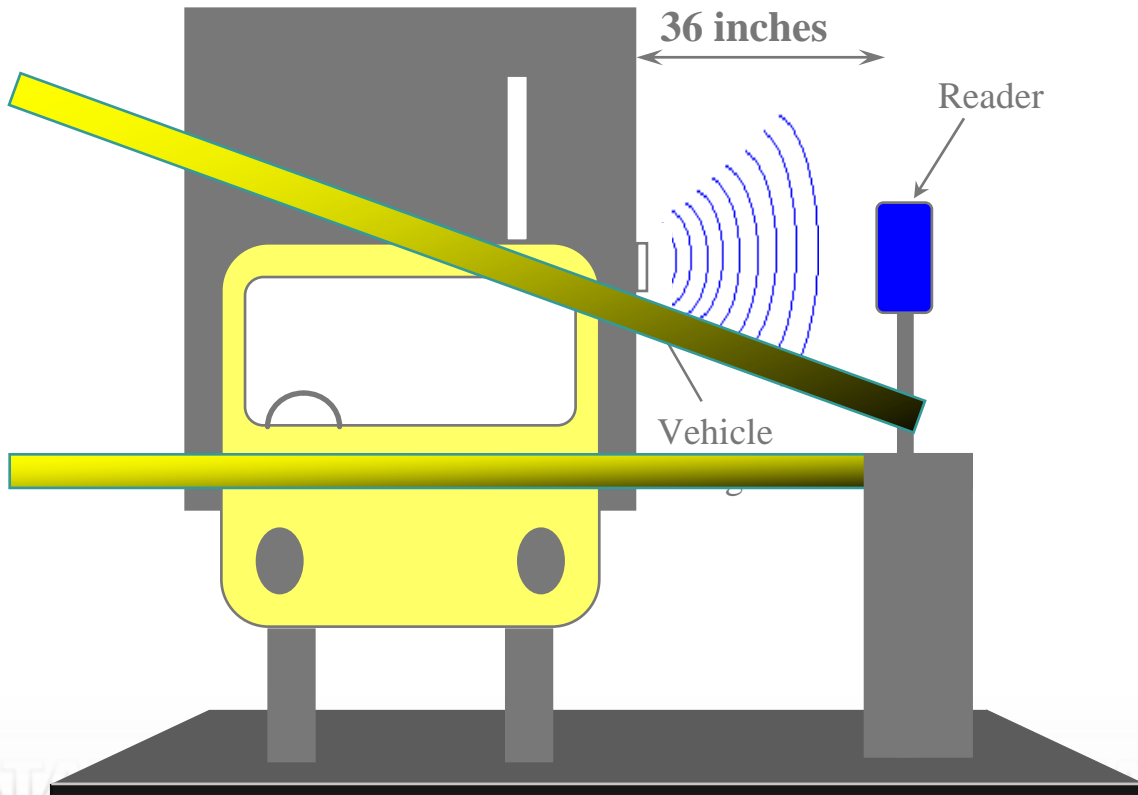
The surveillance cameras can help retrace the path of the vehicle

Most of the traffic congestion occurs due to unmanaged parking

An efficient parking management needs to be in place to efficiently manage traffic congestion



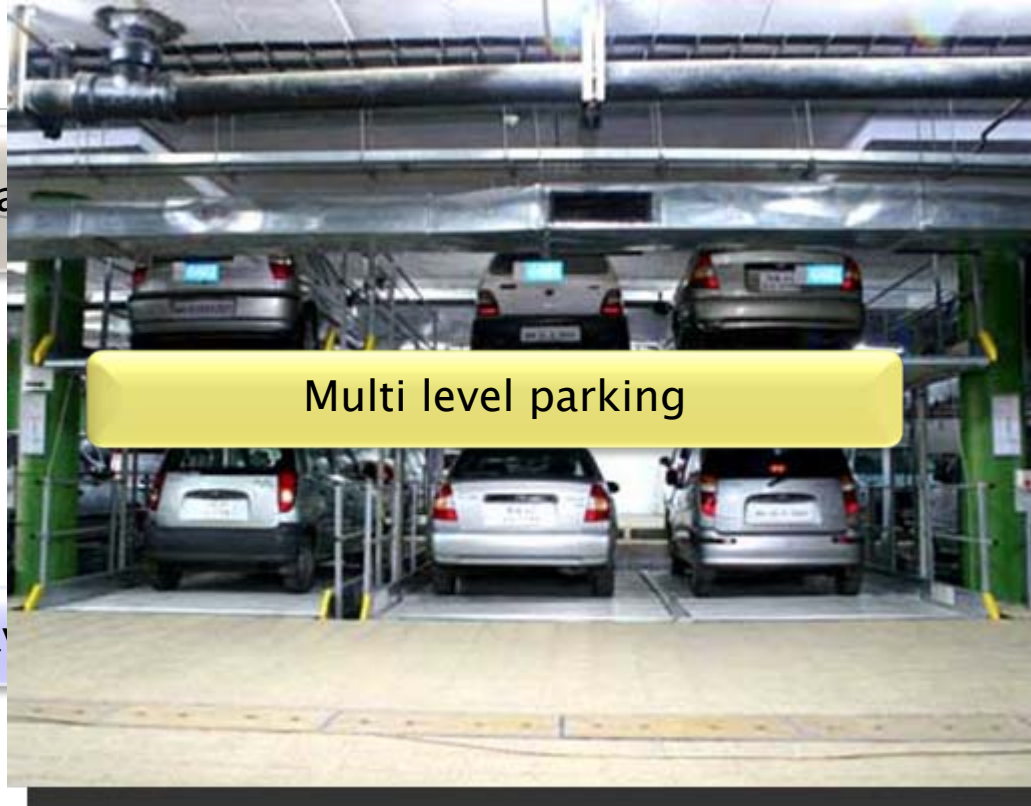
# Gate Management with Access Control- A parking management solution



- **Long Range Readers Provided for Parking Levels**
- **Counter is Used for knowing the number of cars in the parking level.**

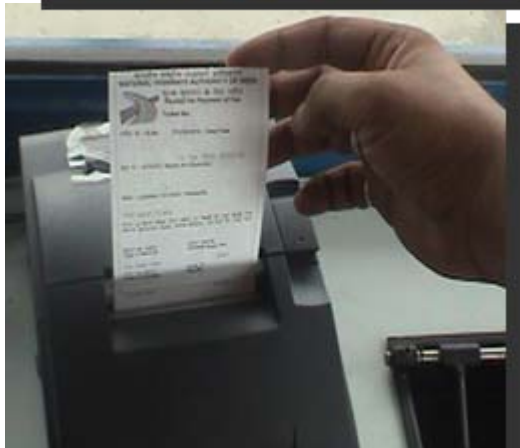


Installation



Indicator

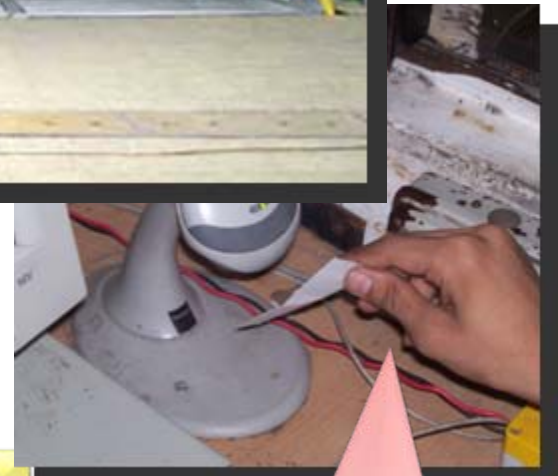
Multi level parking



Payment



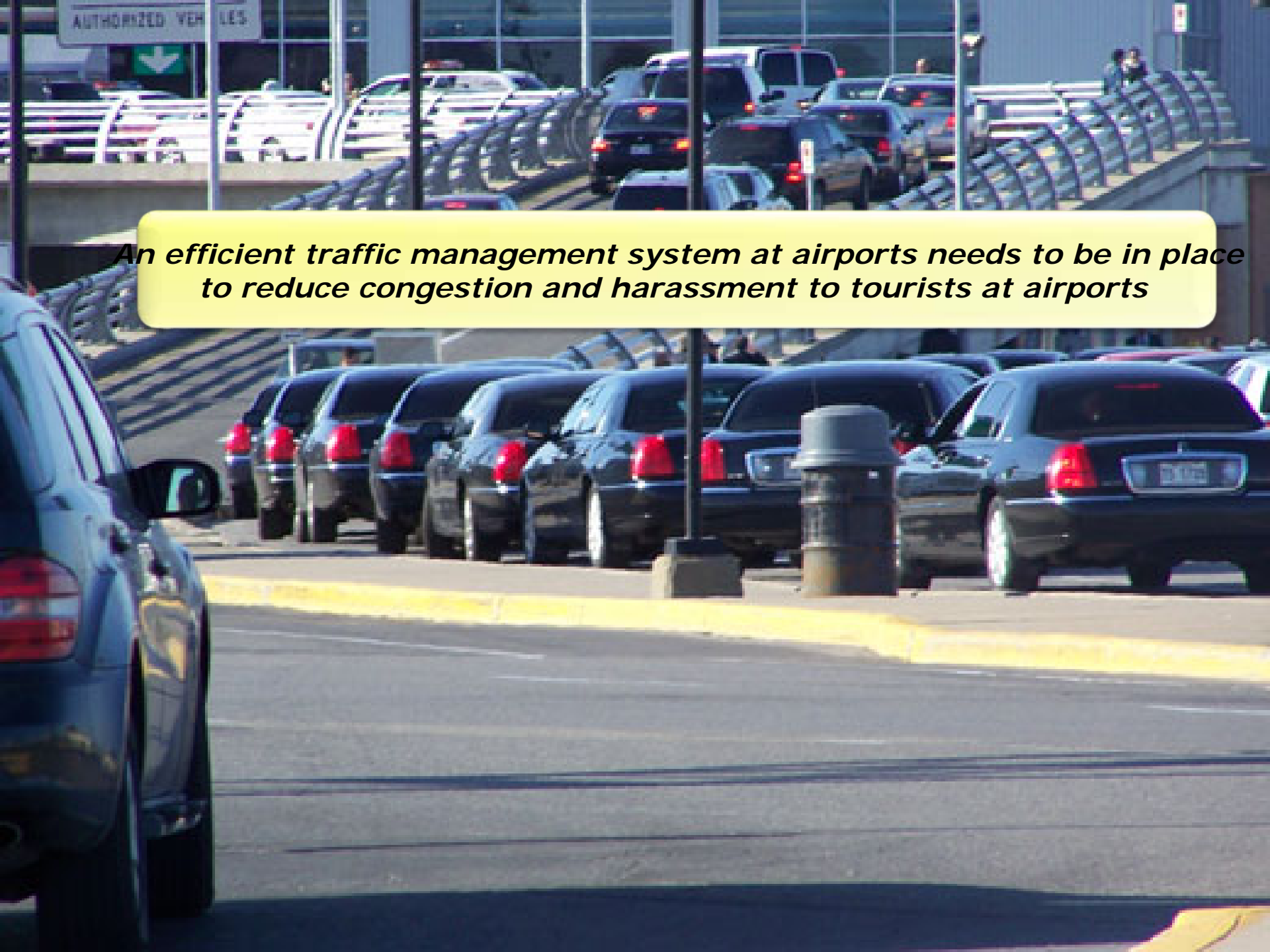
Parking Barrier



Barcode Reader at exit

***Efficiently managed parking and less congestion***





*An efficient traffic management system at airports needs to be in place to reduce congestion and harassment to tourists at airports*



# An intelligent traffic management system

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**Thank You**

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