

# Environmental Report 2008

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## FOREWORD

The Transport Department is fully committed to environmental protection. We are conscious of the commitments under the Clean Air Charter and have been working whole-heartedly to improve air quality by taking proactive measures to mitigate the air pollution generated from our transport system. We have also exerted influence over our business partners in the transport sector, for example, franchised bus, public light bus and taxi operators, to encourage them to join us in pursuing the wide range of measures aimed at protecting the environment.



We will continue to strive for achievement of our Departmental Vision, viz. “*we will provide the world’s best transport system which is safe, reliable, efficient, environmentally friendly and satisfying to both users and operators*”. In this issue of our Environmental Report we aim to advise the readers what has been done in 2008 by or through the Transport Department to improve the quality of our living environment.

## ABOUT THIS REPORT

This Environmental Report covers the period from 1 January 2008 to 31 December 2008. It is published in electronic version on our web site for the sake of reducing paper consumption. Its target readers are members of the general public. The readers will be informed of the business of our Department, the efforts we have made and the measures we have taken to protect the environment.

Any suggestions or comments on this report are most welcome and can be sent to [tdenq@td.gov.hk](mailto:tdenq@td.gov.hk).



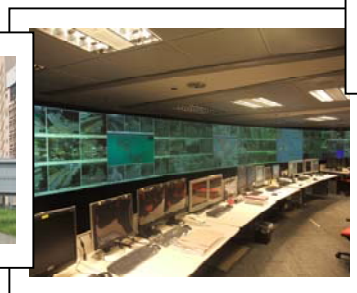
## ABOUT TRANSPORT DEPARTMENT

Our Department is responsible for the implementation of the Government's transport policy under the following 5 programme areas:

- (i) Planning and Development;
- (ii) Licensing of Vehicles and Drivers;
- (iii) District Traffic and Transport Services;
- (iv) Management of Transport Services; and
- (v) Transport Services for People with Disabilities.

Our headquarters are located in the Immigration Tower in Wanchai. We have also some 20 sub-offices accommodated in other government offices or private commercial buildings. As at 31 December 2008, we had an establishment of 26 directorate posts and 1215 non-directorate posts. In our daily business, we manage or operate the following main types of facilities:

- (i) public transport interchanges/termini;
- (ii) vehicle inspection centres;
- (iii) driving test centres;
- (iv) traffic lights;
- (v) escalators;
- (vi) CCTV and variable message signs;
- (vii) intelligent transport systems; and
- (viii) roads and pedestrian facilities.



Besides other government departments, our business partners include the operators of franchised and non-franchised buses, tram, taxi, ferry, green mini-buses and public light buses. We also run maintenance, operation and management contracts with the various tunnel and Government carpark operators.

## ENVIRONMENTAL GOAL

Our environmental goal is to provide an environmentally friendly transport system in Hong Kong.



## ENVIRONMENTAL POLICY

We are committed to providing a transport system in an environmentally acceptable manner to align with the sustainable development of Hong Kong.

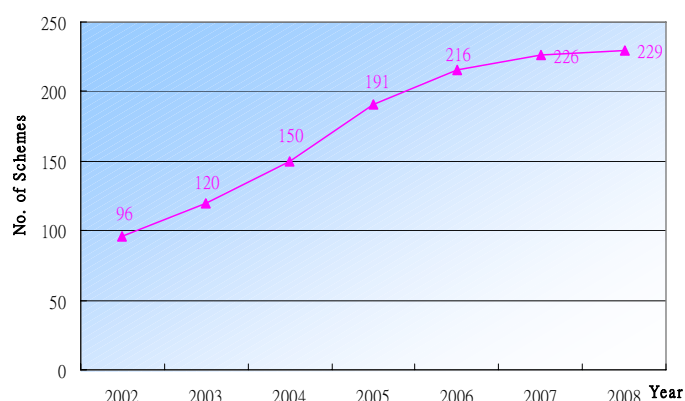
## ENVIRONMENTAL OBJECTIVES

### Environmental Objective No. 1 - Reduction in Vehicular Traffic

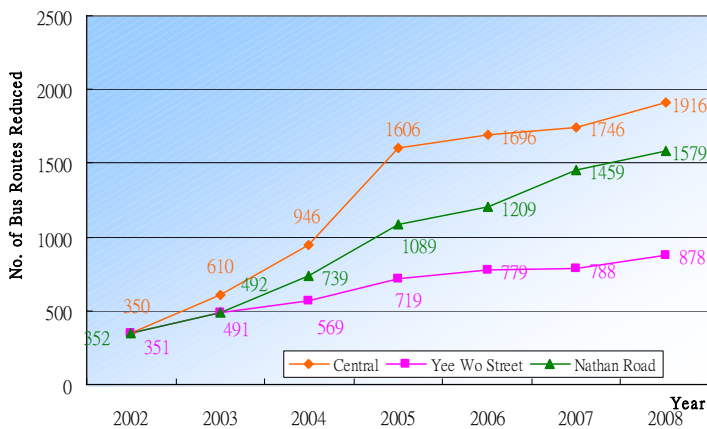
In managing the public transport system, we coordinate the roles played by the various public transport modes, including the rail, bus, tram, taxi, ferry etc., so as to achieve the highest possible overall efficiency. This includes rationalizing public transport services to improve accessibility whilst avoiding duplication and raising the level of service to improve attractiveness. In the end, it helps to reduce vehicular traffic and mitigate air pollution. With these benefits in mind, we make our best efforts to enhance the efficiency of the transport system in the following ways:

#### (i) **Implementation of public transport interchange schemes**

The introduction of interchange schemes enable passengers to make the most efficient use of the transport system across different modes. They include bus-rail interchange, green minibus-rail interchange, taxi-rail interchange, and bus-bus interchange schemes. **The numbers of bus-bus interchange schemes implemented since 2002 are shown in the graph on the right.**



## (ii) Rationalization of bus routes and stops

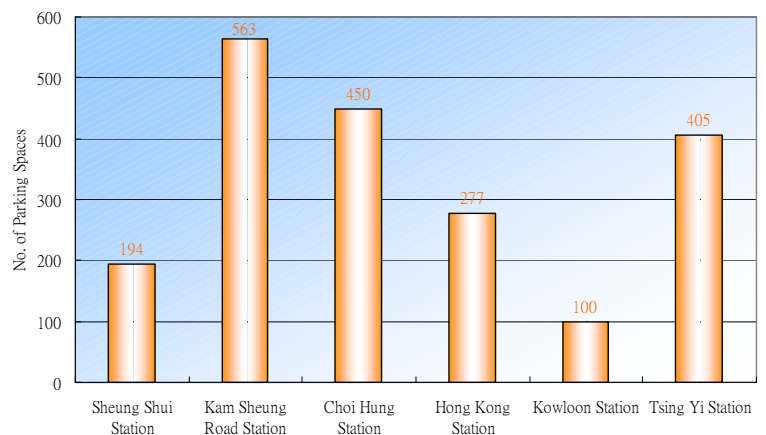


This process includes amalgamation, truncation and modification of bus routes, re-location of bus stops and adjustment of bus schedules to match the prevailing passenger demands. The resulting arrangements can help to reduce traffic congestion. The cumulative reduction of the number of bus trips since 2002 is shown in the graph on the left.

## (iii) Provision of park-and-ride (PnR) facilities

These facilities are car parks provided near railway stations. People can shorten their private car trips and switch to the rail for the major part of their journeys.

The number of parking spaces provided in each PnR facility is shown in the graph on the right.



## (iv) Provision of bicycle parks

In the New Territories, we monitor the demand for bicycle parks, and make provisions (amounting to a total of about 8,000 cycle parking spaces) close to railway stations to enable bicycle riders to change to the rail.



## Environmental Objective No. 2 - Tightening of Emission Control



We have adopted the Euro IV emissions standards since 1 October 2006 to tighten the control over the emission of air pollutants by vehicles in the following manner:

### (i) **Franchised buses imported before 1 October 2006**

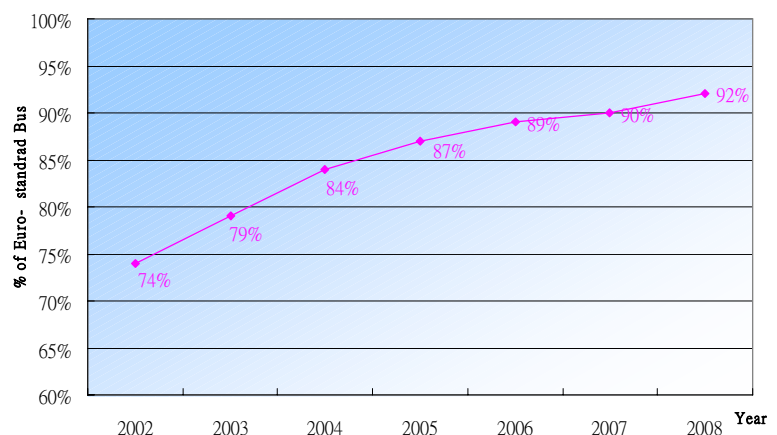
We encourage the franchised bus operators to retrofit emission reduction devices on their serving buses to reduce their particulates emission. For all those pre-Euro and Euro I buses, the retrofitting works have been completed since 2003 and we keep on encouraging the retrofitting works for their Euro II and III buses where technically feasible. The target is to complete such retrofitting work in 2009-10.

### (ii) **Franchised buses and medium & heavy diesel vehicles over 3.5 tonnes imported on or after 1 October 2006**



We require Franchised buses and medium & heavy diesel vehicles over 3.5 tonnes imported on or after 1 October 2006 to comply with Euro IV emission standards for registration in Hong Kong.

The yearly variation of the percentages of buses complying with the Euro Emission Standard since 2002 is shown in the graph on the right.



**(iii) All private cars, taxis, light buses, goods vehicles, buses and special purpose vehicles**

We require them to pass smoke or emission tests during their annual inspection. We also select 40 diesel vehicles per day to undergo the dynamometer smoke test at the Kowloon Bay Vehicle Examination Centre. The legislative amendment to tighten the in-use diesel vehicle emission standard from 60 Hartridge Smoke Units (HSU) to 50 HSU has been effective from 1 May 2008.



Further, we encourage the franchised bus operators to deploy Euro II or above buses to run in busy corridors such as Yee Wo Street, Hennessy Road, Queensway, Des Voeus Road Central and Nathan Road.

**Environmental Objective No.3 - Use of Alternative Fuel Vehicles to replace Diesel Vehicles**

Since February 2001, in response to our appeal, the franchised bus operators have switched the fuel of all franchised buses to ultra low sulphur diesel, which can reduce particulate emission by 5 to 10%.

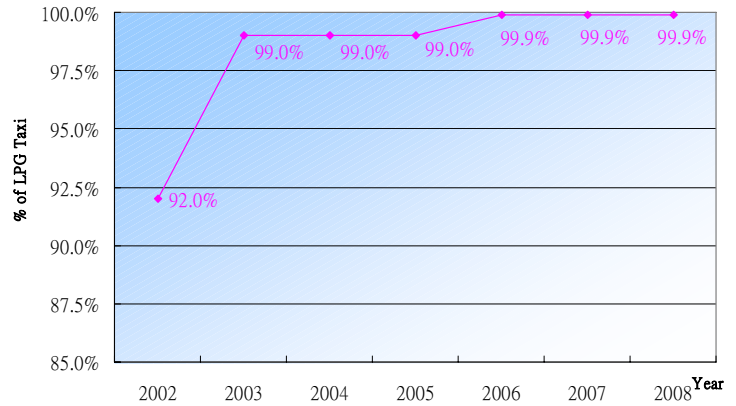
Besides, we took part jointly with other Government departments in the promotion of “cleaner” fuel such as liquefied petroleum gas (LPG) or electricity in place of diesel. Our efforts include the implementation of the following:

**(i) Conversion of diesel taxis to LPG taxis**



As at end of 2008, over 99.9% (i.e. 18,135 Nos.) of the taxis were LPG taxis.

The percentages of LPG taxis over the past few years are shown in the graph on the right.



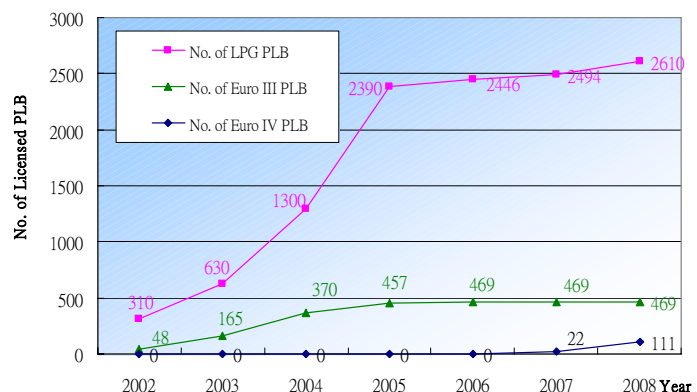
**(ii) Set-up of LPG Refilling Stations**

We work jointly with other departments to facilitate the setting up of LPG refilling stations at convenient locations. Up to end 2008, there were a total of 58 LPG refilling stations in Hong Kong.

**(iii) Incentive scheme for LPG/Electric Light Buses**

We launched an incentive scheme in August 2002 to encourage Public Light Bus (PLB) owners to replace their diesel PLBs by LPG or electric ones. Under the scheme, one-off grants of \$60,000 and \$80,000 were awarded for replacement of diesel PLBs by LPG and electric PLBs respectively. The scheme ended in December 2005 and was followed by another one launched on 1 April 2007 (under the title of "To Replace pre-Euro and Euro I Diesel Commercial Vehicles by New Commercial Vehicles Incentive Scheme"). Under the latter scheme, similar one-off grants of \$40,000, \$60,000 and \$80,000 were introduced for Euro IV, LPG and electric replacement vehicles respectively. As at end 2008, the number of LPG PLBs was 2,610 against 469 Nos. of Euro III diesel PLBs, and there were also 111 licensed Euro IV diesel PLBs.

The numbers of licensed LPG PLB, Euro III and IV Diesel PLB since 2002 are shown in the graph on the right.



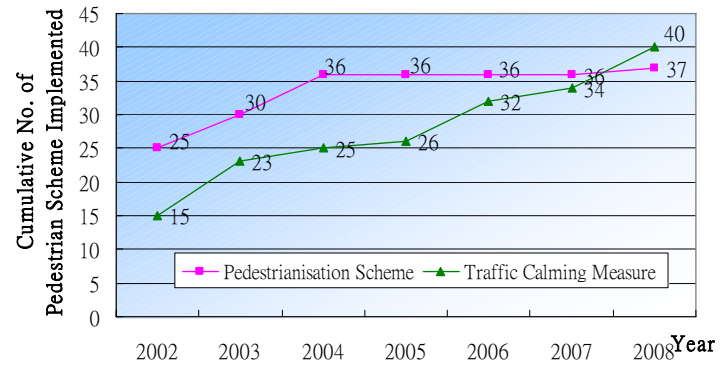


(iv) **Replacement of pre-Euro and Euro I diesel commercial vehicles**

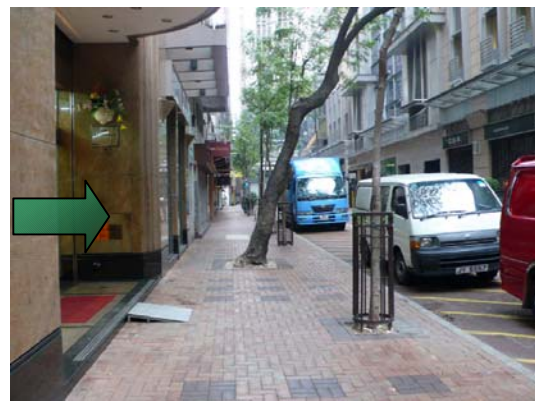
The second incentive scheme mentioned in (iii) above for PLBs applies also to other pre-Euro and Euro I diesel commercial vehicles.

**Environmental Objective No. 4 - Pedestrian & Traffic Calming Schemes**

The merits of these schemes in improving local air quality and streetscape have been recognized since we first introduced them to busy areas like Causeway Bay and Mong Kok in 2000. **The cumulative numbers of pedestrian schemes implemented since 2002 are shown in the graph on the right.**



*Traffic Calming Street: Jaffe Road (near O'Brien Road)*



*Traffic Calming Street: Minden Avenue*

## **Environmental Objective No. 5 - Efficient Use of Road Space through Application of Advanced Technologies**

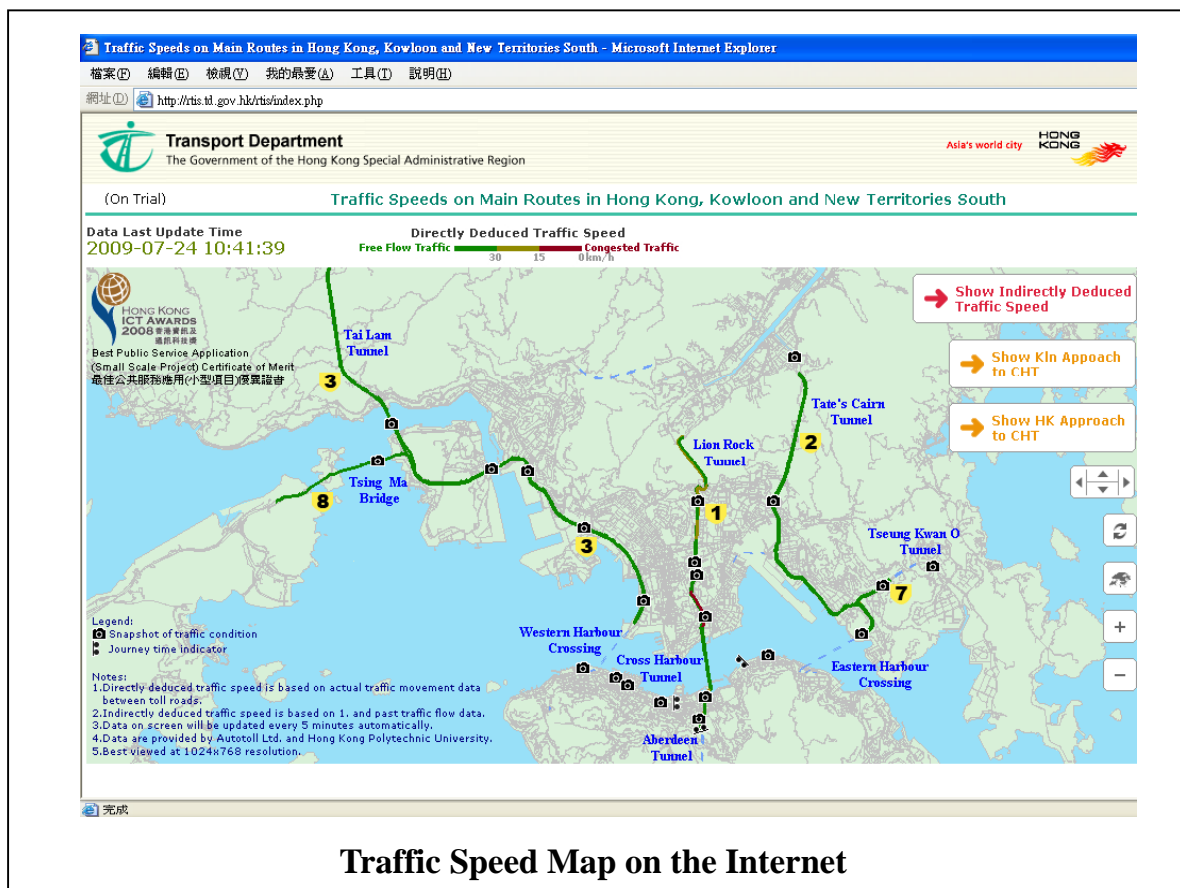
We aim to reduce the journey times of motorists, and hence the consumption of vehicle fuel and emission of air pollutants from vehicles, through the enhancement of the efficiency of the transport network by the application of advanced technologies in the following aspects:

### **(i) Promotion of Intelligent Transport Systems**

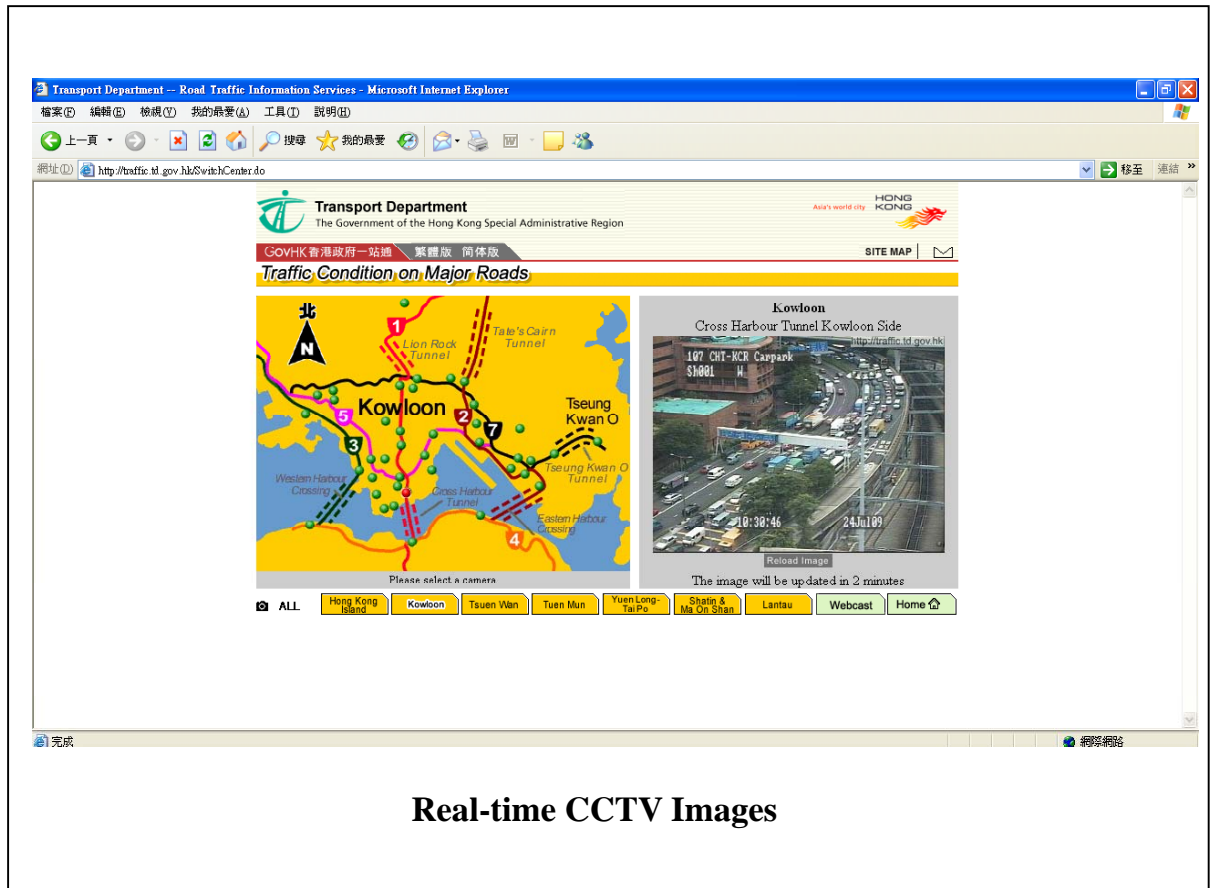
We promote the use of advanced information and telecommunication technologies to facilitate the collection and dissemination of real-time traffic information to the general public and motorists via the Internet and on-site infrastructure.

### **(ii) Provision of Internet Public Services**

We have been providing traffic and transport information through Internet in our TD Homepage for the motorists and passengers to plan their journeys and make better use of the road network and public transport services.



Currently we are integrating special traffic news, real-time CCTV images and a traffic speed map on a common platform of Road Traffic Information Service (RTIS) on the Internet for the road users to better plan their journeys thus avoiding traffic congestions. Such information can also be accessed through mobile phones and PDA. The traffic speed map now covers major roads on northern Hong Kong Island, Kowloon and New Territories South.



To enable commuters to make better use of the public transport services, we are developing a Public Transport Enquiry Service (PTES). PTES is a free one-stop multi-modal public transport route search system with map information available to the public in the Internet.

We are also developing a Driving Route Search Service (DRSS) to provide motorists through Internet with optimum driving routes within the Hong Kong territory based on the shortest distance, lowest toll/bridge fee, shortest travel time (static) or shortest travel time (real-time). Moreover, useful information such as non-stopping restrictions, pedestrian streets and public car parks will also be shown for motorists' reference. The above public services will be launched to the public separately in 2009.

### (iii) Dissemination of Real-time Traffic Information

We install variable message signs (VMS) and Journey Time Indication System (JTIS) along strategic corridors to inform motorists of the latest traffic conditions and journey times. Furthermore, we are designing speed map panels to be installed along selected strategic corridors in the New Territories to display traffic congestion levels in alternative routes. With the benefit of such information, motorists can plan their journeys ahead to avoid traffic congestion, thus reducing their journey times.



There are now 32 VMS in operation in Kai Tak, Lion Rock and Aberdeen Tunnel Areas, the Tsing Ma and Tsing Sha Control Areas and the northwest New Territories. One JTIS is presently operating on Hong Kong Island. We are carrying out a project to expand it to Kowloon so that real time cross-harbour journey times from Kowloon to Hong Kong, and vice versa, can be shown to motorists.

**(iv) Operation of Area Traffic Control (ATC) Systems**

We operate computerized ATC systems in the Urban Area, Tsuen Wan, Kwai Tsing, Sha Tin and Ma On Shan, Tai Po and North, Tuen Mun and Yuen Long District. The ATC systems carry out real-time coordination and adjustments to the green time settings of traffic signals to suit daily traffic variations as well as seasonal traffic characteristics. The result is that overall traffic delay at intersections is minimized and journey time on the road is reduced. Furthermore, it is estimated that the operation of the ATC systems also reduces the number of stops of vehicles by 28% and hence the vehicle emission associated with the stop and start activities.



**Environmental Objective No. 6 - Saving Electricity at our facilities**

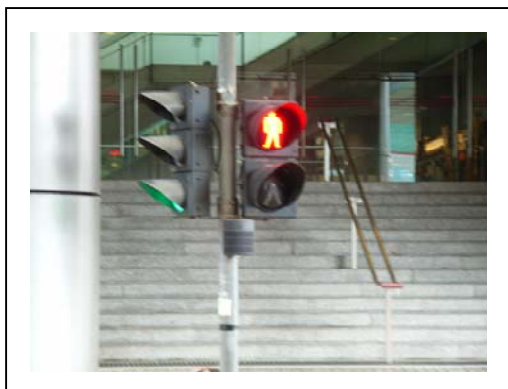
Our facilities that have major consumption of electricity are broadly divided into 3 categories for the sake of formulating our electricity saving measures:

**(i) category 1 including all our offices, vehicle inspection centres, and driving test centres**

We adopt green office management (see details below) to reduce electricity consumption in this category of facilities.



**(ii) category 2 including traffic lights, CCTV, variable message signs, intelligent transport systems and journey time indication systems, etc, that are in operation round the clock for the purpose of regulating and monitoring road traffic**



We plan to replace the conventional traffic signal lights by LED traffic signals in 3 phases to reduce power consumption. Contract for Phase 1 (Hong Kong Island) will be awarded in early 2009 for completion in 14 months. The remaining phases is planned for completion in 2011 and 2012 respectively

**(iii) category 3 including escalators and public transport interchanges/terminus that serve pedestrians and public transport passengers**

There is room for energy- saving but we have to strike a balance between the saving of electricity and the service to the public. The measures adopted to reduce electricity consumption by the facilities in this category include the following:



- escalators are turned off at the end of the operating period
- the ventilation and part of the lighting of the public transport interchanges/termini are turned off as soon as the public transport services cease every night
- lighting of low power consumption rating is used
- the ventilation systems are properly maintained to work efficiently in respect of power consumption

The situation of electricity consumption of the above facilities since 2006 is shown in the following table:

Year	2006	2007	2008
<b>Electricity consumed (Kwh)</b>	3,289,090	3,454,671	3,452,928

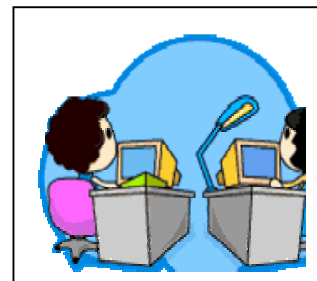
Even though the electricity bills for a few public transport interchanges/terminus in Hong Kong Island and Kowloon were incorporated into the Department account since June 2007, there is still an overall reduction in electricity consumption in 2008.

### **Environmental Objective No. 7 - Green Office Management**

We always keep abreast of the green practices recommended by the Environmental Protection Department and Electrical & Mechanical Services Department and introduce them to our offices whenever appropriate. Our aim is to reduce paper and electricity consumption as far as possible and to use recycled materials as much as possible. The latest green office practices adopted by us are summarized below.

#### *Paper-reduction Measures*

- Sharing documents via the Local Area Network and the Internet by uploading reports, circulars and other documents on the Transport Department Intranet and Internet website
- Using e-mails and e-memos within the department and, as far as practicable, when communicating with other departments and the public
- Reducing the font size of the letters and characters, and the line spacing for drafting, and preview of documents before final print
- Issuing tender documents in electronic format
- Printing and photocopying on both sides of paper and on used paper
- Re-using envelopes and loose-minute jackets
- Sending unclassified documents without using envelopes
- Sending electronic seasonal greeting cards
- Sending no originals when these are sent by fax
- Using no covering sheets when documents are faxed
- Using CD-ROM to carry departmental publications and consultancy study reports instead of hard copies
- Monitoring the quantity of paper consumed quarterly
- Adopting e-Filing system where appropriate



The situation of paper consumption since 2004 is shown in the following table:

Year	2004	2005	2006	2007	2008
A4 Paper equivalent (reams)	21,345	21,985	20,090	27,785	25,573

The substantial decrease in paper consumption in 2008 of about 8% when compared with the figure in 2007 was mainly attributable to the paper reduction efforts by our colleagues.

#### *Energy-saving Measures*

- Monitoring and promoting energy-saving measures (e.g. switching off air-conditioning units, computers, etc.) by designated staff
- Setting the air conditioning temperature to 25.5°C in the summer months
- Reminding all staff to switch off lights when not in office
- Turning off unnecessary lighting when the area is not in use and affixing “Save Energy” stickers near switches to remind staff to save energy
- Turning off some air-conditioning units when the occupancy is low (e.g. after normal office-hours)
- Reminding all staff to set all computers and office equipment to energy-saving mode during office hours and to turn them off after use
- Replacing CRT monitors with more energy-efficient LCD monitors
- Adopting an open plan office concept through the use of half-glass walls to allow light to pass through when designing the layout of a new office
- Using T8 fluorescent lamps to replace T10 fluorescent lamps for energy saving
- Promoting walking up and down the floors instead of using lifts





### *Recycling Measures*

- Providing green boxes for the collection of waste paper and arranging with recyclers to collect waste paper for recycling
- Collecting used printer toner cartridges for recycling
- Promoting the use of recycled paper
- Collecting used CD-ROM discs for recycling



### *Other Measures*

- Practising no-smoking policy within all our offices



## **Environmental Objective No. 8 - Staff Awareness**

**Transport Department**

**Environmental Seminar**  
**2008**

**Air and Green Living**

**By Environmental Protection**  
**Department**

We try to develop a green culture within the Department and make all staff environmentally conscious. To this end we regularly arrange EPD to deliver seminars to our staff, nominate staff to attend energy-saving workshops organised by EMSD and disseminate green messages to everybody via the computer network. We also distribute among the staff, leaflets obtained from EPD about environmental protection tips.

## ENVIRONMENTAL ACHIEVEMENTS IN 2008

The progress/achievements versus the targets for 2008 are summarized in the following table.

Objectives	2008 Targets	Progress & Achievements
Reduction in Vehicular Traffic	(i) To continue the existing bus-rail interchange schemes between MTRC and New Lantau Bus (NLB)	(i) Passengers were offered \$1 fare discount for interchanging between MTR Tung Chung Line and NLB's 37, 37P, 38, 38P and N38. Besides, passengers travelling on MTR East Rail Line can enjoy free interchange on MTR feeder bus routes K12, K14, K16, K17 and K18 which are operated by KMB at designated MTR stations. (Remark: MTRCL offers free transfer on MTR bus routes for West Rail and Light Rail Passengers in North-west Transit Service Area at the moment.)
	(ii) To continue the existing GMB-rail interchange schemes	(ii) Passengers are offered \$0.3 to \$3.0 fare discount for interchanging between 55 GMB routes and MTR.
	(iii) To continue the existing taxi-rail interchange schemes at the Airport	(iii) Taxi passengers enjoy a 50 % fare discount by using an Octopus Card on the Airport Express Line by presenting a taxi receipt of amount not less than \$60 on the same day at Kowloon and Tsing Yi Stations.
	(iv) To rationalize more bus routes in busy areas and on busy roads	(iv) 170 bus trips in Central, 90 bus trips in Yee Wo Street and 120 bus trips on Nathan Road were reduced.

Objectives	2008 Targets	Progress & Achievements
Tightening of Emission Control	<p>(i) To encourage the franchised bus operators to retrofit emission reduction devices on more buses</p> <p>(ii) To control emission according to the new emission standard of 50 Hartridge Smoke (HSU) Units</p>	<p>(i) About 92% franchised buses comply with the Euro Emission Standards in 2008 against 90% in 2007, while about 53% franchised buses have been retrofitted with emission reduction devices against 50% in 2007.</p> <p>(ii) Target achieved.</p>
Use of Alternative Fuel Vehicles to Replace Diesel Vehicles	<p>(i) To continue the incentive scheme and encourage more owners to have their diesel Public Light Buses converted to LPG or electric ones.</p>	<p>(i) The number of LPG PLBs increased from 2,494 in 2007 to 2,610 in 2008.</p>
Pedestrian Schemes	<p>(i) To explore more opportunities for the implementation of pedestrian schemes</p>	<p>(i) We implemented traffic calming schemes at Shanghai Street, Fuk Wa Street, Pei Ho Street and Nam Cheong Street.</p>

Objectives	2008 Targets	Progress & Achievements
Efficient Use of Road Space through Application of Advanced Technologies	<p>(i) To continue the collection and dissemination of real-time traffic information to the public</p> <p>(ii) To plan and implement the installation of more VMS, JTIS, CCTV and together with a new traffic speed map panel system</p> <p>(iii) To continue the operation of the speed map on the Internet</p> <p>(iv) To continue the operation of the Area Traffic Control Systems</p>	<p>(i) To plan for the launch of the Road Traffic Information Service (RTIS), Public Transport Enquiry Service (PTES) and Driving Route Search Service (DRSS).</p> <p>(ii) The CCTV project for the provision of over 400 cameras in the territory continues to progress smoothly. As at end 2008, 12 cameras had been installed in the urban area for traffic monitoring.</p> <p>(iii) Target achieved.</p> <p>(iv) The Area Traffic Control Systems have been expanded to cover the Tuen Mun and Yuen Long Districts. In mid 2008, a contract for the replacement of the existing obsolete Area Traffic Control Systems for Kowloon, Tsuen Wan and Sha Tin and the Expansion of the System to Tseung Kwan O had been awarded for completion in 2011.</p>

Objectives	2008 Targets	Progress & Achievements
Saving Electricity at our facilities	(i) To reduce electricity consumption in our offices by 1%  (ii) To contain the electricity consumption of our non-office facilities to the level of 2007	(i) A slight increase in electricity consumption (less than 0.2%) was due to working overtime and the increasing use of computer equipment.  (ii) Target achieved.
Green Office Management	(i) To continue with the green office management practices  (ii) To save paper by 5%	(i) Target achieved.  (ii) Paper consumption in 2008 has reduced by 8%.
Staff Awareness	(i) To organize an environmental seminar for our staff	(i) “Environmental Seminar 2008 – Air and Green Living” was delivered by EPD on 12 December 2008.

## OUR 2009 OBJECTIVES & TARGETS

Objectives	Targets
Reduction in Vehicular Traffic	<ul style="list-style-type: none"> <li>(i) To continue the existing bus-rail interchange schemes between MTRC and New Lantau Bus (NLB)</li> <li>(ii) To continue the existing GMB-rail interchange schemes</li> <li>(iii) To continue the existing taxi-rail interchange schemes at the Airport</li> <li>(iv) To rationalize more bus routes in busy area and on busy road.</li> </ul>
Tightening of Emission Control	<ul style="list-style-type: none"> <li>(i) To encourage the franchised bus operators to retrofit emission reduction devices on more buses.</li> </ul>
Use of Alternative Fuel Vehicles to Replace Diesel Vehicles	<ul style="list-style-type: none"> <li>(i) To continue the incentive scheme and encourage more owners to have their diesel Public Light Buses converted to LPG or electric ones.</li> </ul>
Pedestrian Schemes	<ul style="list-style-type: none"> <li>(i) To explore more opportunities for the implementation of pedestrian schemes.</li> </ul>
Efficient Use of Road Space through Application of Advanced Technologies	<ul style="list-style-type: none"> <li>(i) To continue the collection and dissemination of real-time traffic information to the public.</li> <li>(ii) To implement the Road Traffic Information Service (RTIS), Public Transport Enquiry Service (PTES) and Driving Route Search Service (DRSS).</li> <li>(iii) To expand the Journey Time Indication System (JTIS) to Kowloon</li> <li>(iv) To expand the traffic speed map in the Internet and to install speed map panels in the New Territories</li> </ul>

Objectives	Targets
Efficient Use of Road Space through Application of Advanced Technologies (cont')	(v) To continue the project for replacing the existing obsolete Area Traffic Control Systems for Kowloon, Tsuen Wan and Sha Tin and Expansion of the System to Tseung Kwan O.
Saving Electricity at our facilities	<p>(i) To award contracts for Phases 1 &amp; 2 of the project for replacing the existing conventional traffic signals with LED signals.</p> <p>(ii) In line with the Government's 5-Year Energy Saving Target, to reduce electricity consumption in our offices by 5% by FY2013-14 (using FY2007-08 as baseline).</p> <p>(iii) To contain the electricity consumption of our non-office facilities to the level of 2008 as far as possible.</p>
Green Office Management	<p>(i) To continue with the green office management practices.</p> <p>(ii) To contain the paper consumption to the level of 2008.</p>
Staff Awareness	(i) To arrange EPD to deliver a seminar to our staff.