

2004 Environmental Report

Environment, Transport and Works Bureau (ETWB)

INTRODUCTION

In a land area of 1,102 square kilometres, Hong Kong houses about 6.8 million people. Population concentrates in less than 19% of the land which is developed. Population densities in the developed areas average over 36,000 per square kilometre, and in the Kowloon Peninsula, the average is over 44,000. These are some of the highest densities found anywhere in the world, and are several times higher than those in cities like London, New York and Tokyo.

Hong Kong is home to intense economic activities. Per capita GDP in 2003 was about HK\$179,000, placing Hong Kong among the most prosperous communities in the world. Situated at the mouth of the Pearl River, Hong Kong is a leading city amongst all the cities in the Pearl River Delta, providing essential services to its fast-developing hinterland. Such combination of people and economic activities puts enormous strain on the capacity of the local environment as well as having to take up the task of combating cross boundary pollution, which in turn affects the sustainable development of Hong Kong. On the other hand, Hong Kong has tremendous environmental assets. It is the home of a wide diversity of wild plants and animals. 40% of the total land area of Hong Kong is within designated country park areas. The Mai Po and Deep Bay Wetland, an important wintering site for migratory birds, is one of the Wetlands of International Importance. It supports some 50,000 waterbirds in winter and over 120,000 waterbirds for the whole year. For a highly urbanized city as Hong Kong, it has Asia's best trails within close vicinity, offering people outdoor activities.

KEY RESPONSIBILITIES OF ETWB

ETWB comprises the Environment Branch, the Transport Branch and the Works Branch. It is responsible for policy matters on environmental protection and nature conservation; on development of transport infrastructure, provision of transport services and traffic management; and on public works programme, greening, water supply, slope safety and flood prevention in Hong Kong.

The major areas of policy responsibilities of ETWB include -

- to improve the quality of our environment, conserve our natural heritage and optimize the use of resources and goods so as to reduce pollution and waste;
- to promote health and the enjoyment of our living environment;
- to plan for and implement the construction and improvement of our transport infrastructure, with emphasis on railways;
- to further promote the usage of public transport services by improving their quality and co-ordination;
- to effectively manage road use, reduce traffic congestion and promote road safety;
- to continue to support environmental improvement measures in transport-related areas;
- to ensure the provision of a reliable, adequate and quality water supply and an efficient water supply service; and
- to ensure the effective planning, management and implementation of public infrastructure development and works programmes in a safe, environmentally responsible, timely and cost-effective manner and to maintain high quality and standards.

The Secretary for the Environment, Transport and Works is the head of ETWB.

She is assisted by the Permanent Secretary for the Environment, Transport and Works (Environment), the Permanent Secretary for the Environment, Transport and Works (Transport) and the Permanent Secretary for the Environment, Transport and Works (Works). In addition, the Bureau oversees the operation of its executive departments, namely, Architectural Services Department, Civil Engineering and Development Department, Drainage Services Department, Electrical and Mechanical Services Department, Environmental Protection Department, Highways Department, Transport Department, Water Supplies Department and the nature conservation arm of the Agriculture, Fisheries and Conservation Department.

ENVIRONMENTAL GOALS OF ETWB

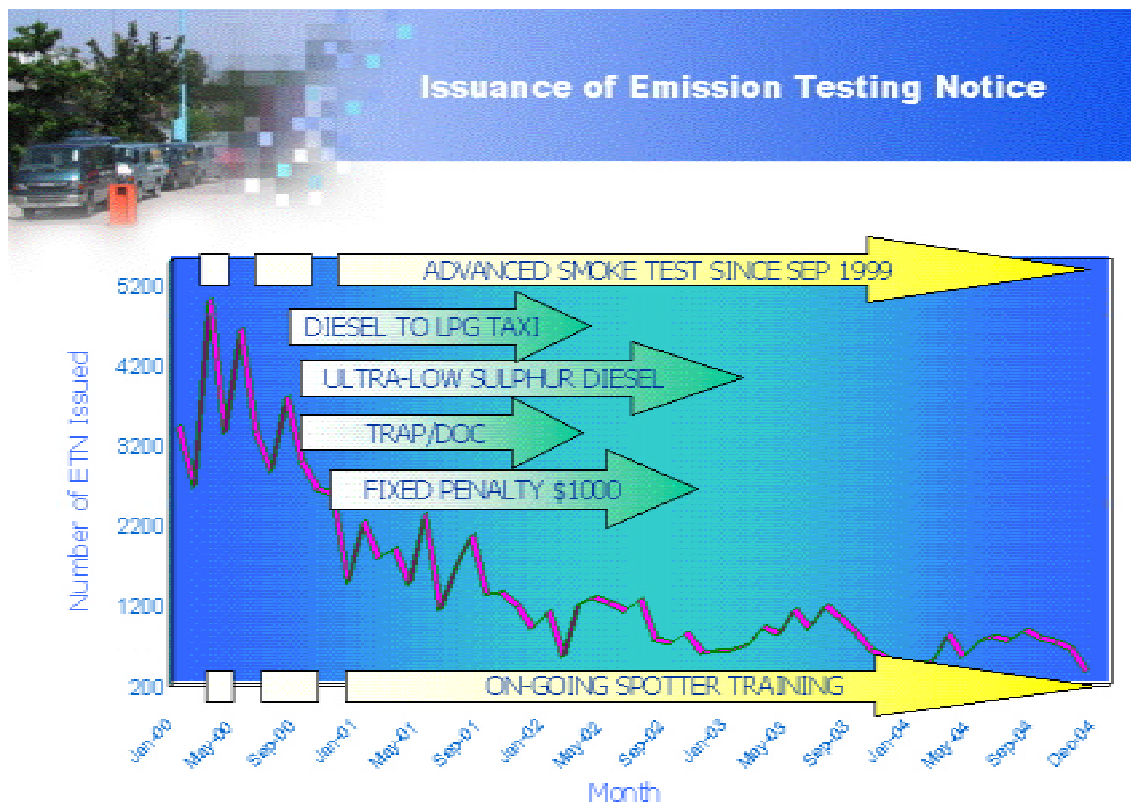
We task ourselves with improving the living environment of Hong Kong, for residents as well as visitors, human beings as well as flora and fauna, this generation and beyond, through our continuous efforts that contribute to the betterment of the local, regional and global environment. In planning our transport systems and implementing public works, we require ourselves and our agents to minimize any possible environmental impacts. We are committed to alleviating and containing the environmental pressures arising from our large population, high population density and active economy and preserving the environmental assets that we have been enjoying. We are also committed to working closely with the Guangdong Government in all aspects to bring about environment improvement with the ultimate objective of achieving sustainable development in the Pearl River Delta. Specifically, our goals are -

- to improve local and regional air quality, water quality and reduce noise pollution;
- to reduce waste and provide safe handling and effective waste treatment;
- to improve the efficiency with which energy and materials are used;
- to provide efficient and effective surveillance of environmental conditions;
- to conserve Hong Kong's important natural heritage;
- to promote green practice among the Government and the private sector;
- to enhance the quality of our living environment through active planting, and proper maintenance and preservation of trees and other vegetation;
- to provide transport infrastructure and services in an environmentally friendly manner;
- to ensure that public works projects are carried out to the highest quality in accordance with latest environmental standards, with the latest environmental technology; and
- to lead by example, and to promote environmental awareness among works departments and within the local construction industry.

KEY ENVIRONMENTAL INDICATORS OF HONG KONG

Air Quality

We have introduced a series of air pollution control measures which have positive results. Compared with 1999, the urban roadside concentrations of particulates and nitrogen oxides, the two major air pollutants in Hong Kong at street level, dropped by 9% and 24% respectively in 2004. The number of smoky vehicles also dropped by 80% during the same period. We expect to see a continuing improving trend in our air quality in the coming few years as we continue to bring the measures in the programme to fruition. Cross boundary air pollution remains high, in particular under certain meteorological conditions and the Regional Air Quality Management Programme is now in place with the objective of achieving pragmatic goals by 2010.



Water Quality

■ *Harbour water quality*

Stage I of the Harbour Area Treatment Scheme (HATS) was fully commissioned in late 2001. It treats 1.4 million cubic metres of sewage a day (or about 75% of the sewage entering the harbour) and successfully reduces the polluting load discharging into Victoria Harbour by about 70% in terms of organic matters. It also prevents some 600 tonnes of sludge from ending up in our harbour waters each day. As a result, there has been a very widespread improvement in the harbour water quality. The dissolved oxygen levels, essential for marine life, have risen by 10% on average in the harbour. In addition, the levels of key pollutants in the harbour have generally decreased, including the reduction of the toxic ammonia level by 24% on average and nutrient levels, in terms of total inorganic nitrogen and phosphorus (which in excess supply can increase the likelihood of red tides), have reduced by 17% and 28% on average respectively. Although sewage bacteria levels, measured in terms of *E.coli*, have increased in the western harbour, particularly in the vicinity of the HATS Stage I outfall, the overall level of *E.coli* of the harbour has been reduced by 57%, with around 95% reduction observed in the eastern harbour.

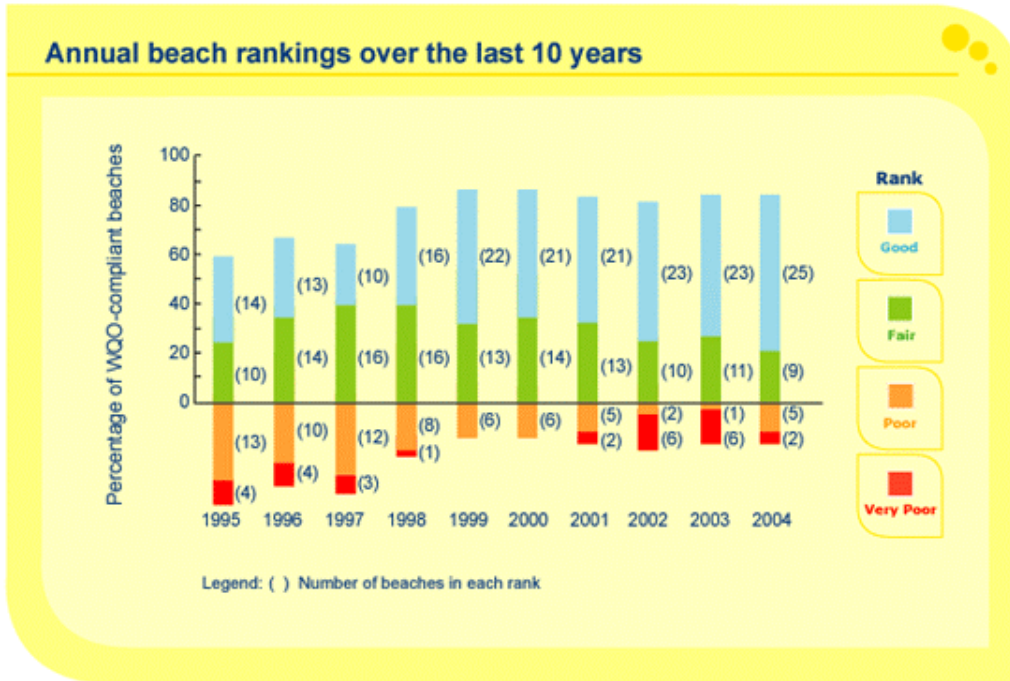
Water Quality Improvements after Commissioning of HATS Stage I



Map showing changes in dissolved oxygen (mg/L), NH₄ (mg/L) and *E. coli* bacteria (cfu/100mL) at 17 stations in the HATS enhanced monitoring programme between (2002 - 2004) and (2000 - 2001)

■ Beach water quality

Between 1995 and 2000, there was a general improvement in beach water quality, thanks to tighter enforcement of pollution controls, provision of local sewerage in the beach hinterlands, and implementation of the HATS high priority sewerage programme. However, in 2002 while the beaches on the eastern side of Hong Kong Island improved as a result of the full commissioning of Stage I of the HATS, the beaches in the Tsuen Wan district reverted about to their 1997 conditions (as a result of the combined influence of continuing local pollution sources and the interim redistribution of treated effluent from the Stonecutters Island Sewage Treatment Works). The net result is that overall 34 out of 41 gazetted beaches (80.9%) met the Water Quality Objectives (WQOs) for bathing water in both 2003 and 2004. Moreover, the number of “good” water quality beaches increased to 23 in 2003 and 25 in 2004, which was more than half of the gazetted beaches in Hong Kong.



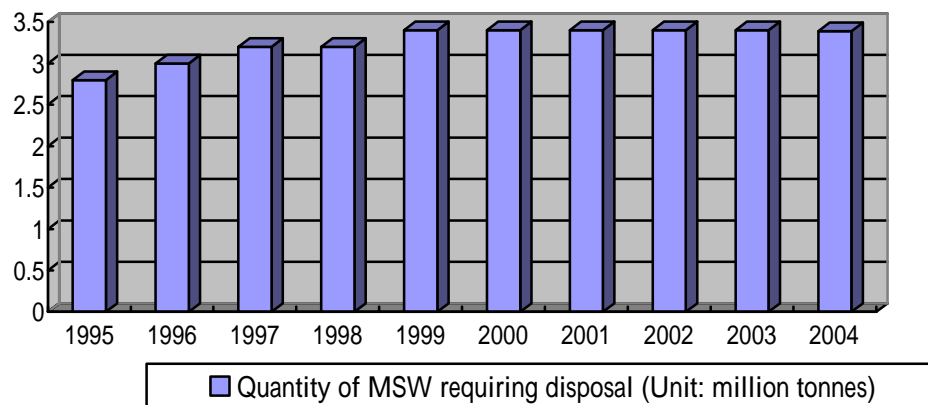
Compliance with WQOs for beaches from 1995 to 2004

Waste Management

Waste prevention and recovery has been our main focus in tackling the waste problem. We have been implementing various measures to further promote prevention and recovery of municipal solid waste (MSW) and are moving forward towards the Government's waste reduction targets –

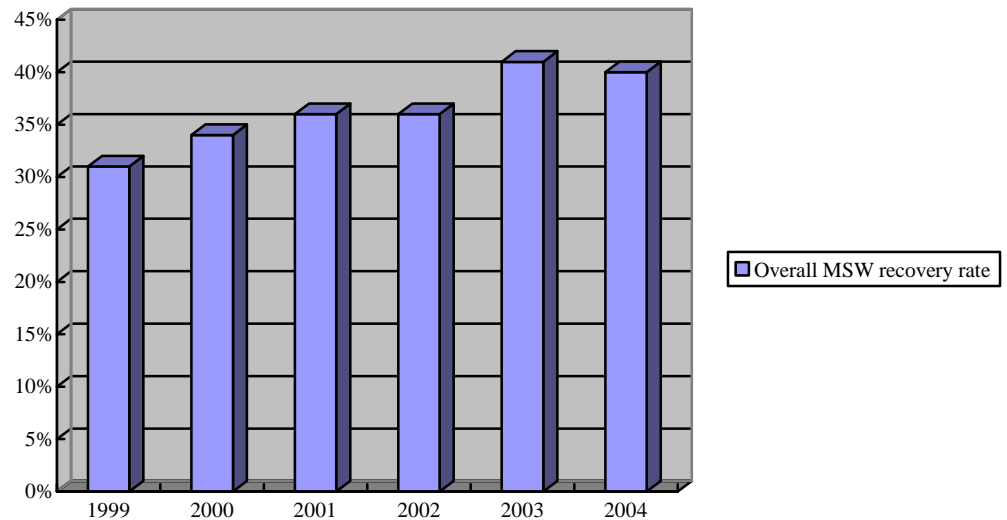
- the quantity of MSW requiring disposal has been maintained at 3.4 million tonnes each year since 2000. This compares favourably with the 3.5% annual growth rate in the years before 2000;

**Quantity of MSW requiring disposal –
Maintained at about 3.39 million tonnes each year from 2000 to 2004**



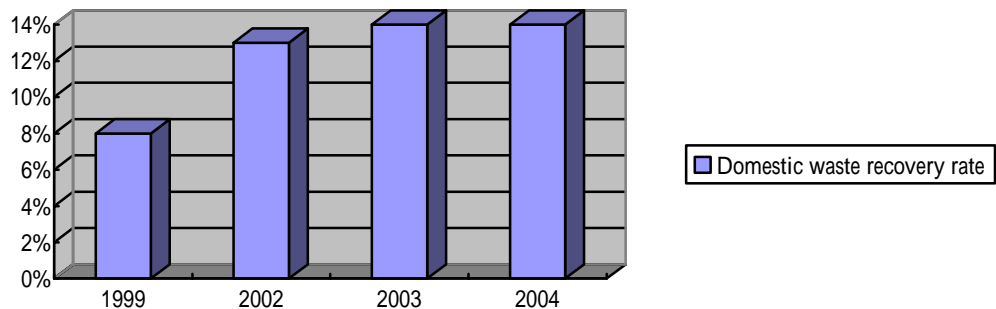
- the overall MSW recovery rate rose from 34% to 41% in 2003; and stayed at about 40% in 2004; and

Overall MSW recovery rate –stayed at about 40% in 2004



- the domestic waste recovery rate rose from 8% to about 14% in 2003 and stayed at about 14% in 2004.

Domestic waste recovery rate – stayed at about 14% in 2004

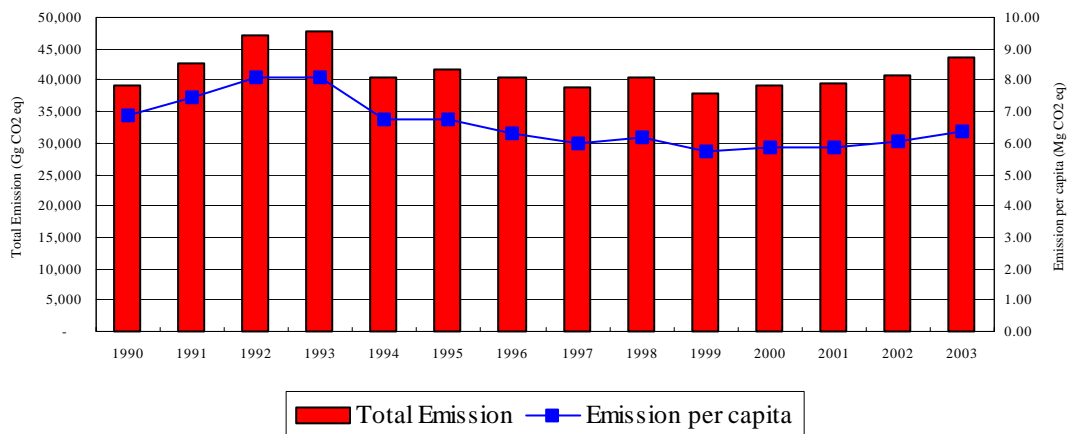


Greenhouse Gas (GHG) Emission

At the request of the HKSAR Government, the Central People's Government extended the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol to HKSAR with effect from 5 May 2003. The extension of these international treaties to HKSAR reinforces Hong Kong's continuing commitment to working with the international community in controlling GHG emission and mitigating global climate change. In fact, we have spared no efforts on this front. In the 1990s,

well before the UNFCCC and the Kyoto Protocol were applicable to HKSAR, we had adopted a wide range of measures such as using natural gas for power generation, importing nuclear power, promoting energy efficiency measures, afforestation and other measures, to reduce GHG emission in Hong Kong. By 2000, our GHG emission had dropped by 18% from its peak back to the 1990 level, achieving the same stringent requirements imposed on developed economies under the UNFCCC, even though we were not obliged to do so. During the same period, the emission per capita has dropped to 14% below the 1990 level by 2000. The total emission in 2001 and 2002 slightly increased as a result of increase in electricity consumption due to increases in population and economic activities. The emission in 2003 increased more substantially because of using more coal in electricity generation. Nonetheless, our emission per capita was still on the low side as compared to major developed economies. The figure for 2004 is not yet available.

Greenhouse Gas Emission (1990-2003)



ENVIRONMENTAL PERFORMANCE OF MAJOR POLICY PROGRAMMES UNDER ETWB

Air Quality

■ *Reduction of regional air pollutants*

We have been working hand in hand with the Guangdong Provincial Government to improve regional air quality. In April 2002, the two governments reached a consensus to strive to reduce by 2010 the regional emissions of the four major air pollutants (sulphur dioxide, particulates, nitrogen oxides and volatile organic compounds in the ambient air) to levels which will enable Hong Kong to meet its Air Quality Objectives.

In December 2003, the two governments drew up a regional air quality management plan to achieve the emission reduction targets. The plan includes the introduction of additional pollution control measures, compilation of emissions inventory and setting up of a joint air quality-monitoring network. Key control measures for Hong Kong include further reductions of power plant emissions, control of volatile organic compounds emissions from paints, printing inks, selected consumer products and petrol filling stations.

Under the Management Plan, the two governments are to set up a regional air quality monitoring network in 2004. After testing, the network will be in full operation in 2005 to provide comprehensive and accurate air quality data. We also completed a manual for compiling inventories of emissions in 2004 to enable both sides to follow a consistent approach in assessing emission levels and monitoring the progress of emission reduction tasks from 2005 onwards.

To enable power plants to meet the emission reduction targets in a more cost-effective manner, we think that they should be provided with the option of emissions trading. The State Environmental Protection Administration has expressed support for the setting up of an emissions trading pilot scheme for power plants in Guangdong and Hong Kong. We are now working out with the Guangdong Provincial Government the details of the pilot scheme.

For the control of volatile organic compounds emissions, we completed in 2004 the public consultation of a proposed scheme to require mandatory registration and labeling of the contents of volatile organic compounds of paints, inks and selected consumer products. In addition, we have amended the Air Pollution Control (Petrol Filling

Station)(Vapour Recovery System) Regulation to require the installation of vapour recovery systems in petrol filling stations to recover petrol vapour during the vehicle fuelling and return it to the stations' petrol storage tanks with effect from March 2005.

■ *Control of vehicle emissions*

We have implemented a comprehensive programme to improve our air quality through reducing vehicle emissions.

Liquefied petroleum gas (LPG) vehicles

The programme to encourage the early replacement of diesel taxis with ones that are run on LPG was completed in end-2003. Nearly all of the taxi fleets now run on LPG. In August 2002, we introduced another incentive scheme to encourage the early replacement of diesel light buses with ones running on LPG or electricity. About 80% of the newly registered public light buses are LPG ones.

Ultra-low sulphur diesel (ULSD)

The maximum sulphur content allowed in motor diesel has been progressively reduced since 1995. From 1 April 2002, ULSD, with sulphur content not more than 0.005% by weight, has become the statutory standard for motor diesel. Hong Kong has the most stringent motor diesel standard in Asia.

Fuel quality for motor petrol

The statutory requirement for reducing benzene in motor petrol to not more than 1% was implemented in April 2000. The petrol specification will be tightened to Euro IV standard on 1 January 2005 limiting the sulphur content to 50 ppm and aromatic content to 35%.

Euro III emission standards

In January 2001, we introduced Euro III emission standards for newly registered vehicles in parallel with the European Union (EU). We plan to further tighten the standards to Euro IV in step with EU in 2006.

Retrofitting pre-Euro diesel vehicles

Our programme to retrofit pre-Euro diesel light vehicles with particulate traps or catalysts was completed in 2001. We have introduced legislative amendments to make the installation mandatory with effect from 2003.

Under a similar retrofit programme that commenced in end-2002 and was completed in end-2004 for pre-Euro diesel heavy vehicles, about 90% of this class of vehicles have so far been installed with catalysts. We will commence in mid-2005 a similar programme to retrofit about 3,500 pre-Euro diesel heavy vehicles that need to operate under long-idling condition (such as concrete-mixers). The retrofit programme will be completed around end-2005.

Other measures that have been carried out include the increase in penalty on smoky vehicles, the appointment and training of new spotters for smoky vehicles since 2000, and the use of chassis dynamometers for smoke testing for all diesel vehicles reported by spotters. We are also planning to require the installation of vapour recovery systems at petrol filling stations.

We will promote the adoption of state-of-the-art, environmentally friendly technology by bus companies in their new fleet purchases and encourage them to deploy cleaner vehicles along busy corridors. We will introduce new franchise conditions requiring bus companies to adopt the latest commercially available environmental technologies in their new buses.

Noise Pollution

■ *Traffic noise*

To avoid exposing noise sensitive receivers to excessive traffic noise generated by new roads, proponents of designated road projects are required to go through the Environmental Impact Assessment process and implement practicable noise mitigation measures as part of their road projects. In planning for public works projects, the works departments will also tie in, where practicable, the installation of noise barriers with the development programme of planned noise sensitive receivers.

We are also implementing a programme to mitigate the noise impact of existing roads on residents. So far we have identified some 30 excessively noisy road sections where retrofitting of noise barriers is practicable and some 70 road sections which will be resurfaced with low-noise surfacing materials. The retrofitting and resurfacing programme is expected to benefit some 65,000 dwellings when completed.

■ *Reducing other types of noise*

We actively participate in the land-use and infrastructure planning process to pre-empt noise problems which may arise from developments. We have been implementing comprehensive noise control legislation since the late 1980s to control noise from construction, commercial and industrial activities. Many noise sources have been brought under tighter control and some have even been eliminated. We further amended the Noise Control Ordinance in June 2002 to hold the management of the corporation explicitly liable for offences committed by the body corporate so as to deter repeated noise offences. The Noise Control (Amendment) Ordinance and the two sets of Code of Practice (for the construction industry and for industrial/commercial operations) became effective on 8 October 2004. We will continue our efforts in reducing public exposure to excessive noise through careful planning, the Environmental Impact Assessment process, mitigation measures and enforcement of legislation.

Water Quality and Conservation

■ *Sewage treatment*

In 1989, over 50% of the total human sewage produced in Hong Kong was discharged directly into the sea or inland waters without treatment. Less than a quarter of the sewage collected received advanced levels of treatment. To rectify the situation, the Government formulated 16 Sewerage Master Plans (SMPs) in the early 1990s to identify the sewerage infrastructure necessary for meeting population demand and improving water quality in coastal waters throughout Hong Kong. These SMPs are being implemented in phases, and together with HATS, the amount of sewage, which now receives treatment, has increased by more than 100% since 1989 to 694 million cubic metres per year in 2004. In addition, polluted flows have been intercepted in many sensitive areas and the capacity of the sewerage system has been enhanced.

■ *Conservation of fresh water*

Fresh water is a scarce resource. With a growing population and economic activities, there is an ever-increasing demand for this limited resource. From a sustainability perspective, water conservation is one of the fundamental elements to ensure a reliable and sufficient water supply to the people in Hong Kong.

In 2003 and 2004, we achieved good progress towards the target of water conservation through continued implementation of some key measures highlighted below -

- Hong Kong's sea water flushing system has been widely acknowledged as a successful system to conserve fresh water. At present, about 80% of the population is supplied with sea water for flushing which, in turn, saves more than 20% of fresh water consumption (in the order of 244 million cubic metres (mcm) annually). The average daily consumption of sea water in 2003 and 2004 were 0.67 and 0.69 (up to 30 September 2004) mcm respectively;
- similar to other international cities, the water supply system is subject to leakage problems. The adoption of proactive leak detection and pressure management techniques in the distribution network has greatly contributed to early detection and reduction of leakage. For 2003 and 2004, the estimated daily savings in fresh water adopting the pressure management technique were 0.16 mcm and 0.104 mcm (up to 30 September 2004) respectively;
- the conversion from bulk meters to individual meters in some old development areas has increased the users' awareness of their consumption pattern under the tiered tariff system. In 2003 and 2004, the respective numbers of bulk meters converted were 50 and 32 (up to 30 September 2004). Early actions can be taken against leakage problems that might have been undetected under a bulk metering system, thus conserving more fresh water;
- another approach adopted is to reduce the response time for attending to leaks and bursts so that overflow from the burst mains can be stopped at the earliest possible time to minimize the loss of water. We have successfully enhanced the performance targets regarding time for isolating burst main upon receipt of a report within 1.5 hours and 2.5 hours for pipe diameter up to 300 mm and pipe diameter between 300 mm and 600mm respectively;
- the reuse of filter backwash water in major water treatment works has also helped reduce water loss during the treatment operation. The total quantity of filter backwash water saved for 2003 and 2004 were 11.2 mcm and 10.8 mcm (up to 30 September 2004) respectively;
- to promote public awareness of water conservation, talks in schools and

building management offices, roving exhibitions, seminars, forums and other publicity programmes have been arranged regularly. In addition, we have organized open days to water treatment works and other waterworks installations; and

- a pilot desalination plant adopting the latest reverse osmosis technology commenced its operation in November 2004. The plant has a capacity of about 240 cubic metres per day and will facilitate the collection of data for technical and financial assessment of the potential for building a full-scale desalination plant in the future.



In 2005, the following initiatives will be pursued to secure further saving of fresh water -

- promoting wider use of low-flow flushing cistern and dual-flush cistern in toilets so that less flushing water is needed and more importantly, less sewage is generated;
- monitoring construction works under a pilot scheme for recycling treated sewage effluent for toilet flushing and landscape irrigation in Ngong Ping. It is now actively in progress. This sewage treatment plant is planned for implementation in the second half of 2005;

- the operation of the pilot desalination plant consecutively at Tuen Mun and Ap Lei Chau, each for one year. The purpose is to obtain more operation data under different sea water quality. A preliminary report will be available in 2005; and
- the implementation of the large-scale scheme of replacing and rehabilitating aged water mains that helps reduce water loss due to leakage. It covers a total of about 3,000 km of water mains for completion in stages. The first stage commenced in December 2000 covering 350 km of water mains. The original schedule is to complete the scheme in 20 years. However, in response to the public demand, the scheme has been compressed to 15 years. The proposal to prioritize the water mains to be replaced/ rehabilitated is being reviewed for completion in 2005.

Waste Management and Recovery

■ *Waste recovery*

Waste prevention and recycling is an essential component of our waste management strategy. We have been implementing various measures to further promote waste prevention and recovery, including -

- continuous support and promotion of various waste recovery activities, and trying out different forms of waste recovery methods, including the wet/dry waste sorting pilot scheme and the placement of waste separation bins in public places and public/private housing estates;
- strengthening of public education and publicity on waste recovery. In 2003, we organized various publicity and public education programmes to promote waste prevention and recovery, including exhibitions, seminars, visits by a theme van on waste problems and solutions to shopping centres, schools, and housing developments. We also developed education materials on waste separation and prevention for use by teachers in primary and secondary schools;
- provision of suitable land for lease to the recycling industry;
- planning of the establishment of a 20-hectare EcoPark in Tuen Mun to

provide long-term land for recycling operation; and

- injection of \$100 million into the Environment and Conservation Fund, primarily for district organizations and green groups to organize community waste recovery projects.

We secured passage of the Waste Disposal (Amendment) Ordinance 2004 by the Legislative Council in July 2004 to enable the implementation of a charging scheme for construction waste disposal. The charging scheme is in line with the ‘polluter pays principle’ and provides an economic incentive for construction waste producers to reduce waste and to carry out sorting to facilitate reuse/recycling of waste, thereby helping to slow down the depletion of the limited landfill capacity. The implementation details of the scheme are contained in two sets of subsidiary legislation, namely, the Waste Disposal (Charges for the Disposal of Construction Waste) Regulation and the Waste Disposal (Designated Waste Disposal Facilities) Regulation 2004, which were passed by the Legislative Council in January 2005. We aim to commence the charging scheme in summer 2005.

■ ***Selection of technologies for development of large-scale waste treatment facilities***

We cannot count on waste reduction and recycling alone to tackle the waste problem since clearly not all wastes are recyclable. Our estimate is that even if we are able to reduce waste as much as possible and meet our target recycling rate of 40% by 2007, there will still be more than 4 million tones of unrecyclable wastes that need to be handled every year. Hence, we invited expressions of interest from the local and international waste management industry to develop large-scale waste treatment facilities in Hong Kong in April 2002. An advisory group, comprising mainly non-officials, has been considering the submissions in detail.

■ ***Reusing inert construction and demolition (C&D) materials outside Hong Kong***

Owing to the suspension of almost all reclamation projects in the Harbour, the generation of inert C&D materials has far exceeded their demand. We have been relying on the two temporary fill banks at Tseung Kwan O and Tuen Mun to stockpile surplus public fill temporarily for later reuse since end-2002. As at end-2004, we have reached a critical situation in that the capacities of the existing fill banks will be exhausted by mid-2006. We therefore explored the possible reuse of inert C&D materials in projects in the Mainland. On 31 March 2004, the State Oceanic Administration (SOA) of the Central People’s Government and the ETWB signed a

Co-operation Agreement on cross-boundary disposal of dredged mud and beneficial reuse of inert C&D materials. We are now finalizing the implementation details with the South China Sea Branch of SOA with a view to starting pilot projects on the reuse of inert C&D materials in the Mainland in mid-2005.

Energy Efficiency and Conservation

■ *Wider use of renewable energy (RE)*

Stage I of the consultancy study on the Potential Applications of Renewable Energy in Hong Kong was completed. Stage I Study evaluated the potential of various forms of RE for wide-scale local use and related legal, institutional and promotional issues. The consultant advised that wind energy would be potentially feasible for wider application in Hong Kong. Taking into consideration the findings and recommendations of the consultancy study and the public opinions gathered thereafter, we have been working with the Economic Development and Labour Bureau on the wider application of renewable energy in Hong Kong. To this end, as part of the outcome of the 2003 Interim Review of the Scheme of Control Agreements, we successfully persuaded the two local power companies to design and, if feasible, set up a production-scale wind turbine each as pilot projects for public demonstration. The projects will allow the public to have an actual and first-hand understanding of the benefits and constraints of tapping wind power and enable them to make an informed assessment of whether they would welcome more wind power, even though they may need to pay more for the cleaner energy. The pilot projects will also help us identify the wide range of issues that we need to deal with if and when a large wind farm is to be built in Hong Kong. On the other fronts, apart from the abovementioned Study on the Potential Applications of RE, we have undertaken a number of studies on RE application. A trial was conducted at Wanchai Tower to evaluate the performance of three types of building-integrated photovoltaic panels under the weather conditions and urban profile of Hong Kong. In addition, we have started a wind measurement programme to set up five wind monitoring stations to collect site-specific data. Three of the stations will be located at Miu Tsai Tun, Tung Lung Chau and Town Island to facilitate the collection of wind data in the area east of Clear Water Bay in Sai Kung, which should constitute the preparatory work for a wind farm site search. We are also planning for a preliminary study about the environmental impacts of land-based and offshore wind farms. We have scheduled to install a wind-power generator on top of the roof of the new Electrical and Mechanical Services Department Headquarters under construction to study the application of a small-scale wind-power system on buildings. We will share with the community the experience gained and the technical information and data collected to facilitate the

installation of RE systems by interested parties.

■ ***Water-cooled air conditioning systems***

In collaboration with the relevant government departments, we introduced in June 2000 a pilot scheme for the wider use of water-cooled air conditioning systems to replace air-cooled air conditioning systems to save energy in Hong Kong. Up to now, there are a total of 57 designated areas as opposed to 6 when the scheme was first launched in 2002. Out of the 126 applications received, 73 applications were approved in principle by the Water Supplies Department since the launch of the pilot scheme (52 applications received and 39 approved in 2003). The total gross floor area involved in all these applications is over 4 million square metres. 18 installations have been completed so far. All are reported to be running in good condition. When all the applications are approved and implemented, it is estimated that energy consumption will be reduced by 50 millions kilowatt per year, or a reduction of about HK\$50 million in the electricity bill, and carbon dioxide emission will be lowered by 35,000 tonnes per year. Apart from the pilot scheme, we will also formulate a long-term policy to promote water-cooled air-conditioning systems in the territory in the light of the findings and recommendations of the territory-wide implementation study for wider use of water-cooled air conditioning systems.

Nature Conservation

■ ***Better conservation of ecologically important sites***

The existing nature conservation policy seeks to conserve and enhance the natural environment of Hong Kong by protecting ecologically important sites through a number of conservation measures. These measures include the designation of country parks, marine parks, marine reserve, special areas and conservation zonings (such as Site of Special Scientific Interest, Conservation Area and Coastal Protection Area); implementation of the statutory environmental impact assessment mechanism; enforcement of legislation; implementation of conservation plans for important habitats and species; and enhancement of conservation education and publicity. In total, over 40% of Hong Kong's land area is under statutory protection. To better achieve the nature conservation objectives with the limited resources available, we have conducted a review on the existing policy and measures, and a three-month public consultation to seek the views of the public on -

- the introduction of a scoring system to assess the relative ecological

importance of sites with the objective of reaching a consensus with key stakeholders on the priority sites for enhanced conservation; and

- practicable ways to better conserve ecologically important sites that are in private ownership.

We have received a total of 156 written submissions and attended a number of meetings during the public consultation.

■ *New nature conservation policy*

After taking into account views received during the public consultation, we announced on 11 November 2004 the new nature conservation policy together with an implementation plan. The new policy aims to better achieve the nature conservation objectives, in particular to enhance conservation of ecologically important sites that are in private ownership. Under the new policy -

- there is a new policy statement with clearer vision and policy objectives;
- a scoring system is adopted for assessing the relative ecological importance of sites with the objective of drawing up a list of priority sites for enhanced conservation;
- a pilot scheme will be implemented for the two new measures to be adopted for the 12 priority sites identified, viz. management agreements with landowners and public-private partnership;
- existing nature conservation measures will continue and be enhanced;
- the Wetland Advisory Committee will be converted into a nature conservation sub-committee of the Advisory Council on the Environment;
- conservation education and publicity will be enhanced; and
- establishment of a nature conservation trust will be further explored.

Our new nature conservation policy is to regulate, protect and manage natural resources that are important for the conservation of biological diversity of Hong Kong in a sustainable manner, taking into account social and economic considerations, for the

benefit and enjoyment of the present and future generations of the community.

The 12 priority sites include Ramsar Site, Sha Lo Tung, Tai Ho, Fung Yuen, Luk Keng Marsh, Mui Tsz Lam and Mau Ping, Wu Kau Tang, Long Valley and Ho Sheung Heung Deep Bay Wetland outside Ramsar Site, Cheung Sheung, Yung Shue O and Sham Chung.

The six-month application period for the pilot scheme for management agreements and public-private partnership began on 1 December 2004. We aim to announce selected pilot projects within six months after the closing of the application period. We will review the implementation of the two measures in two to three years' time.



Aberdeen Country Park

In addition, we will continue to pursue the existing conservation measures for conserving important habitats and biodiversity of Hong Kong. The Agriculture, Fisheries and Conservation Department has started conducting territory-wide ecological surveys with a view to establishing a comprehensive ecological database in phases by 2005. The survey findings will provide useful input for formulating and implementing nature conservation strategies and measures.

We will also enhance public education and publicity on the importance and significance of conserving biological diversity, and the correct attitude towards wildlife.



Yellow Coster (left) Scarlet Dwarf (right)

Controlling Environmental Impact by Public Works Policy

The environmental problems associated with the construction industry are unique and complex. Notwithstanding its temporary nature, scale of operation and the highly variable environment, we aim to ensure that the environmental integrity of the projects under the Public Works Programme is continually strengthened through improved management and control measures. To achieve this, we establish and promulgate our policies through issuing Technical Circulars for our Works Departments to follow. The environmental policies set out in these Circulars address a wide range of environmental issues, including waste management and reduction, marine mud removal, use of recycled aggregates, minimization of environmental impacts following the principles of the Environmental Impact Assessment (EIA) Ordinance, site cleanliness and tidiness, tree planting etc.

In the delivery of a public works project, we always bear in mind the possible long-term and short-term impacts that the project may have on the environment, and adopt corresponding measures to deal with them. We have set out the guidelines and procedures for EIA of government projects and proposals, including those not covered by the EIA Ordinance. We strictly abide by the requirements of the EIA Ordinance and implement wholeheartedly all requirements set out in the EIA report and the environmental permit. We are working, in the long run, to reduce the impact of a project on the environment by means of proper design. In the short run, we include contractual provisions to govern the behaviour of our contractors and to require them to adopt the best environmental practices.

We concluded in 2004 the trial implementation of the Construction Design Management (CDM) technique by incorporating environmentally friendly features as part

of the design requirement (such as waste reduction) at the design stage of our projects. Work on producing a preliminary CDM guideline is underway, and will be completed in 2005.

■ ***Waste reduction, management and control on the use of raw materials***

Specifically, we require, as part of our works policy, the following -

- project proponents are required to prepare a Construction and Demolition Materials Management Plan (C&DMMP) for identifying and implementing measures to minimize generation and maximize reuse/recycling of suitable inert C&D wastes through proper design and/or adoption of appropriate construction methods at the planning and design stages of a project. The C&DMMP will be vetted and endorsed by the project department to ensure that every endeavour has been made to minimize the generation of wastes associated with the project before invitation of tenders;
- contractors of public works contracts are required to prepare Waste Management Plans (WMP) setting out concrete measures to minimize the generation of wastes including the sorting of C&D wastes on site before disposal. The requirements and the specifications for WMP have been further strengthened since July 2003;
- to promote implementation of WMP, we expanded the 'Pay for Safety Scheme' and the 'Pay for Safety and Environment Scheme' to cover waste management, including submission of WMP, coordination meeting on control of waste and training;
- all construction projects to implement on-site sorting of construction waste. Our objective is to minimize the amount of inert C&D materials to be disposed of at landfills, which are expensive to provide, if they can go to public fill areas or be reused;
- projects generating a significant amount of surplus fill are required to register with the Public Fill Committee, who manages public fill capacity in the territory. The Public Fill Committee will match the surplus fill with projects that have a demand for the material, in order to maximize the reuse of the fill materials;

- to ensure proper disposal of C&D materials, we implement the trip ticket system with the aim of providing an audit trail for verification by the project team to prevent illegal dumping;
- our project proponents, as part of their submission to the Public Works Subcommittee on the upgrading of projects to Category A, are to demonstrate what measures have been taken to minimize waste in the planning and design stages;
- in general, no tropical hardwood is to be used in false work, formwork, temporary supports or work of a like nature. We require all hoardings to be made of metal and bolt-fixed to enable maximum recovery;
- project specifications allow the use of recycled aggregates made from C&D materials to be used initially in filling works, bedding, road sub-base and concrete production etc. The use of recycled aggregates will be gradually widened to include paving block production;
- contractors' environmental performance has an ultimate effect on the successful implementation of our environmental policy. Tools are installed to ensure contractors' compliance with environmental requirements. The 'contractor performance index' system is an indicator to project teams and the tender boards when considering the award of contracts. The index is based on a scoring system in which environmental performance is one important aspect;
- we also have control on contractors' environmental performance through the management of the Approved List system. We set up regulatory action in the form of suspension from tendering against any contractor on the Works Branch's Approved List who has repeated convictions on environment related offences under the same contract, irrespective of whether the site is a public or private sector project. We aim to make the regulatory action on the contractor fair but stringent by including a review by the panel mechanism; and
- to control site hygiene, regulatory action is to be taken against contractors with repeated convictions of allowing mosquitoes to breed on site, for which the contractor can be liable to suspension from tendering.

■ ***Construction nuisance abatement***

We have reviewed the possibility of including the control of nuisance from construction activities of public works sites (such as noise, smoke, dust and waste water) as part of a package of contractual measures on the control of site environment in public works contracts and have decided that specifications about control measures (as against simple requirements to comply with the law) be drawn up for public works contracts.

■ ***Achievements and targets***

- We have extended the scope of regulating action of suspending contractors from tendering for public works to include environmental offences (i.e. 5 offences for the same site or sites under the same contract in a rolling six-month period);
- departmental safety advisors' duty has been extended to cover waste management and environment protection, with a view to covering the whole about environment management on site. We have started a trial on the use of mechanical dump truck covers in some of our projects, spanning several works departments. Through the trial, a cost-effective design that is acceptable to the industry can be established;
- we required contractors to set up an enhanced waste management plan for all major contracts, implementing on-site sorting and measures to minimize waste generation;
- we made it possible for contractors to be suspended from tendering, subject to certain rules, for being convicted of allowing mosquitoes to breed on sites under Section 27 of the Public Health and Municipal Services Ordinance, and empower the supervising officers to order for measures to enhance site cleanliness (subject to payment);
- we issued further guidelines to enhance the management of C&D materials and to improve our trip-ticket system to ensure proper disposal of wastes respectively;
- the temporary recycling plant for C&D materials at Tuen Mun Area 38 operated successfully through the years of 2003 & 2004 and produced

about 400,000 tonnes of recycled aggregates for use in public works projects. So far, we have identified about 100 public works projects in which recycled aggregates can be used;

- field trials to ascertain the use of recycled aggregates in lieu of virgin aggregates in the production of concrete paving blocks have been completed satisfactorily. Taking into account the findings of the trials, we have issued guidelines to promote the wider use of paving blocks made of recycled aggregates in public works projects;
- we started our dialogue with the Environmental Protection Department who provided us with technical information that would be the basis of our specification about nuisance abatement measures on public works sites. The specification will, instead of simply requiring the contractor to comply with the law in the past, specify the exact measures that the contractor shall adopt. A payment mechanism has been designed to make provision of the measures binding as a contractual obligation on the contractor;
- we will include in the Construction Safety and Environmental Manual to provide further practical guidelines for project offices in the implementation of waste management measures. We will also provide an incentive to contractors to implement waste management through awards. In this regard, we will introduce an "Outstanding Waste Management Performance Grand Award" under the Considerate Contractors Site Award Scheme in order to encourage contractors to adopt innovative and effective waste management measures;
- we will continue to promote the use of C&D materials including recycled aggregates in public works projects, so as to set an example for the construction industry to follow. We will also enrich the database for promoting the wider use of pre-cast or prefabricated components, which will reduce the generation of construction waste such as timber. The database was launched onto the ETWB website in December 2002. It is now accessible by the public;
- we will continue to promote the good practice of waste management measures through in-house training and workshops;

- we will complete the specification on pollution control measures on certain construction site nuisance: dust, fumes, noise, muddy runoff and wastewater and the associated payment mechanism; and
- we will formalize the adoption of mechanical dump truck covers.

Greening

Trees and plants can offer psychological comfort and relief and is vital to the health of the people, visual amenity and aesthetic quality of such a densely populated place like Hong Kong.

Our greening policy is to enhance the quality of living environment through active planting and proper maintenance and preservation of trees and vegetation. The target is to bring noticeable improvements in urban greenery, improve the quality of existing greened areas and maximize greening opportunities during the planning and development stages of public works projects.

■ *In public works*

We have established policies to take care of planting in public works. We have promulgated, through the issue of Technical Circulars, our policies covering vegetation maintenance, tree preservation, tree planting and improvement of aesthetic appearance of man-made slopes.

In 2003, the two-tier structure on greening, namely, the Steering Committee on Greening, chaired by the Permanent Secretary for the Environment, Transport and Works (Works), and the Public Works Committee on Greening, Community Involvement Committee on Greening, and the merged Standards and Maintenance Committee on Greening continued to have a strong impetus and influence on the direction of greening here.

The Manuals and Standards Committee made excellent progress in 2003. A territory-wide survey on greenery in Hong Kong was completed, with the highs and the lows identified. Some became the target areas for a thematic planting exercise that was launched subsequently. 7 most difficult locations were selected in 2003, namely Sheung Wan, Central, Wanchai, Hung Hom, Mongkok, Causeway Bay and Kwun Tong. They were assigned to in-house landscape architects and consultant landscape architects to come up with greening plans. These greening designs would be completed gradually in

2004. The Committee was merged with the Maintenance Committee to form the Standards and Maintenance Committee on Greening.

The existing handbooks and internal circulars held by departments were consolidated into a cyber based green manual in 2003. Departments can easily assess information relating to other departments that hitherto can only be accessed with great effort. This cyber manual can improve cooperation on greening by departments. The cyber manual for greening was formalized by a technical circular in 2004.

To encourage community participation in greening, we required, through a technical circular in 2003, works departments to consult district councils about greening in major projects and arrange their participation in planting activities at the end of the projects to foster a sense of ownership of the greenery by the local community.



Planting at public works projects

In 2004, a Technical Circular was issued to clearly demarcate departmental

responsibilities for maintenance of soft and hard landscape works. In addition, another technical circular was issued to promulgate the registration of old and valuable trees and provided guidelines for their preservation. Specifications has been prepared and put on the cyber manual for reference by all works departments regarding tree protection on public works sites. We completed the compilation of a Register of Old and Valuable trees in order to give priority protection to these trees on government land within built-up areas. Currently, the Register contains some 530 trees within built-up areas and has been available at the Leisure and Cultural Services Department's website since September 2004 for public access. Felling of the registered trees is prohibited unless under exceptional circumstances and with the prior agreement of both the Environment, Transport and Works Bureau and the Lands Department.

■ *Greening Master Plan Committee and greening master plans*

To have a coherent greening theme for a district, a framework should be established to coordinate all greening efforts based on a greening master plan (GMP). A Greening Master Plan Committee (GMPC) was set up in 2004 under the Steering Committee for Greening. The Committee was chaired by the Director of Civil Engineering and Development. We started with Tsim Sha Tsui and Central with a view to extending it to other urban areas. The GMP studies on Tsim Sha Tsui and Central were started in 2004 and would be completed in mid to late 2005 when they would be agreed by the GMPC and endorsed by the Steering Committee on Greening. The GMP will be percolated down to future public works and redevelopments.

■ *Coordinated efforts*

We, in cooperation with other bureaux and works departments, have developed strategies to improve the coordination and effectiveness of greening efforts within the current regime and to make greening an integral part of public works projects and in the furtherance of the Government's objective of making Hong Kong a greener city.

An annual greening programme was compiled to facilitate planning and monitoring of progress. The greening works mainly include -

- planting of trees in association with works projects, parks, roadside amenity areas and along expressways;
- planting of tree seedlings in country parks and countryside areas outside country parks;

- thematic planting and beautification works at priority sites in the urban area (e.g. key waterfront sites, public housing estates, footbridges and pedestrianization schemes); and
- landscaping man-made slopes under the Landslip Preventive Measures (LPM) Programme and Enhanced Maintenance Works Programme.



Tree Planting Ceremony for Road T7 opening on 12 August 2004

We planted a total of 13 million trees, shrubs and annuals in 2003 and 15 millions in 2004.



Use of potted plants



Planting at the central median of Nathan Road

■ *Greening at slopes*

Hong Kong's hilly terrain coupled with dense buildings and infrastructure developments has resulted in some 57,000 man-made slopes.

We are committed to landscaping every newly formed or upgraded government

man-made slope. We have adopted the policy of making the man-made slopes look as natural as possible, by using vegetation for slope surface protection wherever possible and applying hard surface only as a last resort. To improve the slope greening technology, we are conducting trials of growing new vegetation mixes and applying new planting techniques on steep slopes. Over the years, we have spared no efforts in improving the cityscape of Hong Kong at the same time as we are implementing our public works programme. Landscape treatments have been provided to all the man-made slopes upgraded under the LPM Programme in 2003 and 2004, amongst which 75% have been applied with vegetation cover for slope surface protection.

We will continue to landscape every man-made slope upgraded under the LPM Programme and to provide vegetation cover to at least 70% of the upgraded slopes. In collaboration with the Kadoorie Farm and Botanic Garden, the Civil Engineering and Development Department (CEDD) has completed a trial of planting native shrubs on steep slopes. The results of the studies and the trial provide useful information for establishing robust, cost-effective and eco-friendly vegetation covers on man-made slopes.



The competition was organized jointly with the Professional Green Building Council, the Hong Kong Association of Property Management Companies, the Hong Kong Institute of Landscape Architect and CED, and the award ceremony was held on 10 February 2004.

■ *Quarry rehabilitation works*

As part of the quarry rehabilitation works, active quarries are being rehabilitated to form green areas suitable for a variety of uses. The quarry on Lamma Island has been rehabilitated with the formation of a natural-looking landscape in harmony with the adjoining environment and suitable for future development. The site was handed back to the Government in 2003. We will continue to rehabilitate active quarries to form attractive green areas.

■ *Targets for 2005*

- To plant about 10 million trees, shrubs and annuals with about 60% of them planted in the urban areas;
- to work on the effective management of greenery and to provide more coordinated maintenance to improve the quality of existing greened areas;
- to continue the task of preparing greening master plans for other areas;
- to require all new flyovers and footbridges to make provision for greening in their designs; and
- to encourage private sector and community participation to promote the greening programme in the urban areas.

Transport

Hong Kong is one of the most densely populated cities in the world. A safe, efficient, reliable and environmentally friendly transport system is important to the sustainable development of the city. We will continue to press ahead with the following initiatives -

- priority for efficient and environmentally friendly transport modes;
- reduction in traffic congestion;
- better inter-modal coordination;
- greater emphasis on pedestrian facilities; and

- application of IT to transport management.

■ ***Priority for efficient and environmentally friendly transport modes***

Railways are environmentally friendly, safe, efficient mass carriers in Hong Kong, carrying about 30% of our public transport passengers. With the commissioning of the Kowloon-Canton Railway (KCR) West Rail on 20 December 2003, the length of the KCR Light Rail, East Rail, West Rail and Mass Transit Railway (MTR) lines (including the Airport Express) stood at 36 km, 35 km, 31 km and 88 km respectively. Part of the KCR East Rail Extension, i.e. the Hung Hom to Tsim Sha Tsui Extension and the Tai Wai to Ma On Shan Rail Link, have been commissioned since October 2004 and December 2004 respectively. The railway network will be further expanded to over 210 km by 2007 through the addition of the Disneyland Resort Line (formerly called “The Penny’s Bay Rail Link”) in mid-2005 and the Sheung Shui to Lok Ma Chau Spur Line in 2007.

Railway Development Strategy 2000 has recommended, in addition to a Port Rail Line for freight traffic, the implementation of five passenger lines, as follows -

- Shatin to Central Link ;
- Kowloon Southern Link;
- Island Line Extensions;
- Northern Link; and
- Regional Express Line, i.e. the Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link.

Completion of these railway projects will increase the railway share of the public transport market from about 30% at present to about 40%.

To ensure that resources for railway projects are effectively invested, the Government reviews from time to time the priority of the railway projects on the drawing board taking into account changes in the community’s transport needs, population projection and land use planning. To this end, the Government decided in January 2003 to defer the implementation of the North Hong Kong Island Line. We also decided that the development of the South Hong Kong Island Line and the West Hong Kong Island

Line should be considered along with the proposed Route 4 (previously known as Route 7) between the Western District and Aberdeen.

With our policy that railways would become the backbone of the passenger transport system, the Government will continue with its efforts to enhance the co-ordination between railway and other public transport modes to avoid wasteful duplication of public transport resources and alleviate traffic congestion in the urban area. Railway developments and supportive infrastructure will be designed and built to better serve community needs. The provision of the new interchange subway system in East Tsim Sha Tsui between the KCR East Tsim Sha Tsui Station and the MTR Tsim Sha Tsui Station is a case in point.

■ ***Reduction in traffic congestion and better inter-modal co-ordination***

To reduce traffic in busy areas and hence the impact on the environment, we have taken the following measures -

- implementation of more bus-bus and bus-rail interchange schemes;
- rationalization of bus routes and stops; and
- introduction of park-and-ride schemes by railway corporations.

Bus-bus interchange schemes

Bus-bus interchange schemes are pursued as one of the measures to achieve more efficient use of bus resources, relieve congestion, minimize environmental impact on busy corridors, and reduce the need for long-haul point-to-point bus routes.

As at end-2004, a total of 150 bus-bus interchange schemes offering fare concessions of \$0.1 to \$20.7 to passengers had been implemented. Through the provision of fare discount incentives and selection of convenient interchanging locations, the implementation of these schemes was well received by the public. On average, some 110,000 passengers were using these interchanges each day. The schemes have also improved the bus network and facilitated inter-district travel whilst minimizing the need to introduce additional bus routes.



Bus-bus interchange scheme in Wan Chai

Bus-rail and green minibus-rail interchange schemes

To promote the interchange between rail and other public transport modes, interchange discount concessions in the form of bus-rail interchange (BRI) and green minibus-rail interchange (GRI) schemes have been introduced. For the two-year period of 2003 to 2004, 2 BRI and 5 GRI schemes for the MTR, involving 8 franchised bus routes, 1 cross-boundary bus route and 8 green minibus routes offering fare concessions of \$0.3 to \$5.0 to passengers, had been implemented. During the same period, 4 BRI and 15 GRI schemes for the KCR West Rail, East Rail and Ma On Shan Rail, which involved 23 franchised bus routes and 26 green minibus routes with fare concessions of \$0.5 to \$3.5 to passengers, had also been introduced.

As at end-2004, 7 BRI and 23 GRI schemes involving 34 franchised bus routes, 1 cross boundary bus route and 36 green minibus routes were in operation for various railway lines.

Rationalization of bus routes and stops

To improve the efficiency of bus operation and to alleviate the traffic and environment impact, the Government has been working together with the franchised bus companies to rationalize bus services and improve bus stopping arrangements.

Through route amalgamation, truncation, modification and frequency adjustment, about 270 bus trips passing through Central and 70 bus trips passing through Yee Wo Street per day were removed in 2004. On the Kowloon side, about 250 bus trips were removed from Nathan Road.

Moreover, the implementation of bus stop rationalization schemes has reduced about 170 bus stoppings per peak hour between Central and Causeway Bay.

Since January 2002, bus companies have deployed only Euro II and Euro III buses

in Yee Wo Street to help enhance the environment in the corridor. The Government has been working with franchised bus companies on deployment of more Euro II and III buses in other busy corridors including Hennessy Road, Queensway, Des Voeux Road Central and Nathan Road. As at November 2004, about 78% of the buses deployed in the above busy corridors were Euro II and Euro III buses.

Park-and-Ride schemes

Park-and-ride (PnR) facilities are usually provided at public transport hubs strategically located on the fringe of busy business/urban areas so that motorists can leave their cars behind and use public transport to complete their trips.

PnR schemes have been operating at the Hong Kong, Kowloon and Tsing Yi stations of the Airport Express, at Choi Yuen Road near the East Rail Sheung Shui station, at the West Rail Kam Sheung Road station, and some commercial car parks located near the Olympic station of the Tung Chung Line, the Hang Hau station of the Tseung Kwan O Line and the Heng On station of the Ma On Shan Rail.

Apart from these schemes, PnR facilities have been planned at the existing rail station at Choi Hung. Construction of the Choi Hung PnR facilities, which will provide 450 parking spaces, commenced in November 2001 with target completion in 2006. PnR facilities will also be provided in the future property developments at the Tsuen Wan West station, Kam Sheung Road station, Tuen Mun station and Tin Shui Wai station of West Rail, and the Wu Kai Sha station of Ma On Shan Rail. In planning future rail stations and major transport interchanges, especially those on the fringe of the urban area, PnR facilities will be developed wherever appropriate.



Park and Ride Facilities

■ *Greater emphasis on pedestrian facilities*

To improve the overall pedestrian environment, the Government had implemented, as at end-2004, 59 pedestrian schemes in various districts, including Central, Wanchai,

Causeway Bay, North Point, the Peak, Stanley, Tsim Sha Tsui, Mongkok, Jordan, Sham Shui Po, Yuen Long and Sheung Shui. They include 7 full-time pedestrian streets, 27 part-time pedestrian streets and 25 traffic calming streets. These schemes are well received by the local communities and the public at large.



Pedestrianized Theatre Lane

The Transport Department and the Planning Department have jointly commissioned a comprehensive study for Tsim Sha Tsui with the objectives of beautifying the area and improving the pedestrian environment in 2004. It is expected that the study will be completed by end-2005.

We will continue to identify areas with heavy vehicular traffic and pedestrian flow, and assess the viability of extending such schemes to those areas.

■ *Application of IT to transport management*

In 2004, we continued to promote the deployment of advanced information and telecommunication technologies to enhance the performance of the transport system in Hong Kong, thus reducing fuel consumption, vehicle emissions and traveling time. Two main projects were completed by the Transport Department in 2003/04, namely the Journey Time Indication System and expansion of the Traffic Condition Service on the Internet.

Journey Time Indication System

Journey time indicators were installed at Gloucester Road near Revenue Tower, Canal Road Flyover near Aberdeen Tunnel and Island Eastern Corridor near City Garden in 2003. The estimated journey times on key routes from Hong Kong Island to Kowloon via the three cross-harbour tunnels are provided. Motorists are now able to make choices on their driving routes based on the information provided and thus save

their travelling time.

Traffic Condition Service on the Internet

Since 1999, images captured from the closed-circuit television cameras at 43 strategic locations on the road network have been broadcast to the public via the Internet. The service is well received by the public. To extend the coverage of the service, the Transport Department increased the number of cameras to 117 in 2004.

GREEN GOVERNMENT

Environmental Reporting

Hong Kong is one of the few jurisdictions in the world which require all the governmental organizations to keep the public informed of their environmental performance. Since 1999, all bureaux and departments have published environmental reports annually. A Review of Environmental Reports of 1999 and 2000 compiled by the bureaux and departments was completed in late 2002. A new set of benchmark has been developed and issued to the bureaux and departments to provide them with more guidance in the environmental performance reporting.

Green Housekeeping in the Government

To further enhance the green management practice within the Government, all bureaux and departments were asked to make the best endeavours to reduce the consumption of and expenditure on power and paper starting from 2003. Taking Financial Year (FY) 2002/03 as the base year, all bureaux and departments are expected to cut down respectively in FY 2003/04, 2004/05, 2005/06 and 2006/07 -

- their power consumption (in KWh) by 1.5%, 3%, 4.5%, and 6%; and
- their photocopying paper consumption (in reams, which is equivalent to 500 sheets of A3 or A4 paper each) by 2.5%, 5%, 7.5% and 10%.

To assist the bureaux and departments in attaining these voluntary targets, guidelines on energy and paper saving have been published to provide practical tips in reducing consumption. Seminars, workshops and experience sharing sessions were organized to turn collective wisdom into new saving opportunities. A Green Management corner has been created under the Central Cyber Government Office to provide handy access to resources about green management. A web-based bulletin board, GreenTalk, has been set up to facilitate exchange of green management ideas among government users. The Electrical and Mechanical Services Department has also launched the “Hong Kong Awards for Energy Efficiency and Conservation in Government” to further encourage bureaux and departments to save energy and to give recognition to their relevant efforts.

While the above measures will gradually bear fruit, we are pleased to observe that the total paper consumption of the Government in FY 2003/04 is 1.87 million reams of

papers, which was 0.8% lower than the consumption level in 2002/03. Although 60% of the bureaux and departments managed to reduce their electricity consumption in FY 2003/04, the total electricity consumption of the Government however increased by 2.45% to about 2200 million kilowatt in 2003/04. This was mainly because a number of new government buildings and facilities came into full operation in 2003/04. We will continue to monitor the consumption of electricity and paper of the bureaux and departments. We will also look into the cases of those bureaux and departments that were not able to meet the targets of the first year and provide them with more support and assistance.

GREEN MANAGEMENT OF ETWB

ETWB operates on 10/F – 13/F, 15/F – 16/F and 21/F of Murray Building, as well as 9/F & 10/F of Citibank Tower at Garden Road.

Being the policy Bureau responsible for the protection and conservation of our environment, we always strive for setting a good example for other Bureaux and Departments in keeping a green workplace through our day-to-day office management, which in essence focuses on -

- efficient use of resources;
- saving of energy; and
- upkeeping of clean air.

To upkeep the positive progress in promoting green management, we have at all times abided by the 3-R principles 'Reduce, Re-use and Recycle' in our day-to-day housekeeping.

Managing Paper Consumption

In 2002, we established an Intranet for the Works Branch as an additional electronic means of communication and information dissemination. The system was extended for the use of the Environment and Transport Branches in 2003.

The centralized paper distribution system implemented since 2002 continued to be highly effective in keeping the Bureau's paper consumption under good control. We succeeded in reducing the paper consumption from 9878 reams in 2002 to 8555 reams in 2004, i.e. a decrease of 13.4% in total paper consumption, which is far beyond our target of a further 5 to 10% reduction in 2003.

Apart from the above, the following green measures are implemented on a continuous basis -

- disseminating information by electronic means (i.e. via email or e-bulletin boards) as far as possible;

- setting duplex printing as the default mode for most network printers;
- producing electronic greeting cards for staff use;
- ordering recycled paper for office photocopying use;
- using environmentally friendly plain paper fax machines;
- placing boxes and trays beside photocopiers as containers to collect used papers for recycling use; and
- encouraging staff to use paper on both sides, reuse envelopes and loose minute jackets, and use the backside of letter pads with outdated letterhead for drafting or printing incoming fax, as well as not to use fax leader page as far as possible.

Taking the advantage of IT advancement and the phase-by-phase implementation of the Electronic Document Management System in 2004, we aim to achieve a minimum of 12% reduction in paper consumption in 2006/07 when using 2002 as the base year. Furthermore, we shall always minimize the printing of publications and make use of the Internet version as far as possible.

Green Purchasing

“Green” stationery items supplied by the Government Logistics Department, such as clutch pencils, refillable ball pens, recycled pencils, correction fluid and furniture made of chip board, are now widely used in ETWB. Such green purchasing constitutes about 25% of the Bureau’s total expenditure on stationery. Other green items, e.g. recyclable laser printer toner cartridges and box files made of recycled paper are also ordered from contractors for office use. To make further progress, we will procure more environmentally sound stationery items in place of those non-green ones in the coming years.

It has now been our practice to only purchase office equipment such as photocopiers and printers with Energy Efficiency label. Unnecessary packaging is discouraged in support of environmental conservation. We also use e-tender whenever applicable.

Managing Energy Consumption

Since ETWB entered the “Best Practice Award” and “Venue Saver Award” competitions for the “Hong Kong Award for Energy Efficiency and Conservation in Government” organized by Electrical and Mechanical Services Department (EMSD), lasting between 1 October 2003 and 30 September 2004, a series of energy-saving measures for the Bureau has been implemented.

In 2003, we solicited EMSD’s assistance in setting the indoor temperature of all premises in Murray Building and Citibank Tower to 24°C to enhance substantial energy saving. Responding to the appeal by the Permanent Secretary for the Environment, Transport and Works (Environment) in October 2004 on energy saving, the office temperature was further reset to 25.5°C.

Prior to 2004, T5 fluorescent lighting technology and movement sensors were used in our office at Citibank Tower, while T8 fluorescent lights were used in the rest of our workplace. In 2004, we replaced all T8 fluorescent lights with T5 type and removed over-provided fluorescent lights and quartz tungsten lamps wherever deemed appropriate. As a result, we have achieved an annual reduction of electricity consumption by 123,000 kilowatt, i.e. 4.8% reduction of the original consumption.

Other energy-saving measures adopted include -

- using energy-saving light bulbs in all possible locations;
- fixing thermometers at various office locations to regularly cross check the temperature setting, including, fixing eye-catching digital thermometers at the reception counter of each floor;
- using short T5 tubes to illuminate “Exit” boards instead of installing traditional high energy consuming “Exit Light Box”; and
- appointing Energy Wardens for respective office floors. These Energy Wardens would check the office temperature setting, turn off unnecessary lights and switch equipment to energy saving mode when they are not in use during office hours. A “Last-Man-Out” arrangement has also been adopted in ETWB requiring the last person to leave his/her office to ensure that all office equipment, lights and air-conditioners are switched off.

These apart, our staff are reminded regularly via email circulation to -

- switch off the lights and air-conditioning when they are not in office;
- ensure that computers are shut down before they leave at the end of a working day;
- make good use of the energy-saving features and options which come with the Operating System of the computers; and
- turn off all electrical appliances or, where appropriate, switch them to the energy-saving mode when they are not in use.

To enhance staff awareness of energy conservation, we organized a “Light Dress Months” programme between July to September 2004. During this period, staff were encouraged not to wear unnecessary “heavy” dress such as suits as far as possible to save the need to switch on excess air-conditioning. This programme was welcomed by all staff and highly supported by senior management. In view of the encouraging response, we have already decided to launch the programme again in 2005.

With the co-operation and concerted efforts of all our colleagues, we will continue to strive for achieving energy saving target by 6% in 2006/07 as recommended by the Policy Committee.

Upkeeping of Clean Air

Carpet cleaning and overhaul cleaning of fan coils are now carried out biannually and annually respectively to uphold a satisfactory level of indoor air quality in our workplace environment.

With regard to our concern over the outdoor air quality, we constantly remind our motor drivers to turn off idle engines and use only low sulphur petroleum for all our departmental vehicles. Our vehicles are also under regular maintenance to prevent the emission of excessive smoke.

Continuous Enhancement of Staff Awareness of Environmental Protection and Green Office Management

It has always been the proclaimed objective of this Bureau to promote staff awareness of both environmental protection and green office management. It is noteworthy to highlight that in addition to the re-circulation of Bureau advice on energy and paper saving together with the “Ten Tips for Good Housekeeping”, we have specially designed a screen saver with the theme on “Energy Saving” for use by staff with a view to enhancing their consciousness on environmental protection/green management. We also proactively encourage our staff to support green activities launched by other government departments and organizations. For the years to come, we will surely continue to strive for implementing new initiatives to enhance the awareness of our staff on these two important issues.

VIEWS AND SUGGESTIONS

If you have any views and suggestions in connection with this Environmental Report, you are welcome to contact us via email at etwbenq@etwb.gov.hk or by fax on 2868 4643 or write to us at 15/F., Murray Building, Garden Road, Central, Hong Kong.