



環保工作報告  
Environmental Performance Report  
2003



English

中文  
简体

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## Foreword

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"Partnership" has been an important theme of our work in 2002. This is linked to a significant change in our approach to polluters. Apart from enforcing anti-pollution laws, we are also working with potential polluters to improve their performance, understand better their constraints and help them understand the need for effective environmental protection measures.

This report describes the various partnerships we have entered into in recent years, and the progress on our many other programmes. Yet it also serves as an example to our partners - indeed, to anyone in the private and public sectors - of the need to be comprehensive and accountable when assessing one's environmental performance.

The Environmental Performance Report (EPR) describes two things: the impacts on the environment of our environmental programmes and the impacts of our operations. Although we cover our programmes in depth in Environment Hong Kong, our annual report, the EPR offers a fuller account of how we, as a department, are performing. In 2002 we endorsed measures to improve the effectiveness of our environmental management system, which should help to improve our overall environmental performance.

An important aspect of this exercise is that we set targets, which readers can refer to in measuring the success of our programmes. We also submit our EPR to a third party for verification. There is always room for improvement and this exercise helps us to see more clearly where we can perform better.

We also rely on feedback from our stakeholders to help us improve. This is a broad group, ranging from the construction, restaurant and vehicle repair trades to green groups, academics, politicians, businessmen and the general public. We encourage you to send your comments to us by using the [feedback form](#) at the end of this report or by e-mailing us at <[enquiry@epd.gov.hk](mailto:enquiry@epd.gov.hk)>.



**R.J.S. Law, JP**  
**Director of Environmental Protection**

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## Environmental Policy

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### Vision

Our vision is of a Hong Kong which enjoys an environment that is both healthy and pleasant, in which the community places a premium on sustaining such an environment for both themselves and future generations.

To realise this vision, we will continue to strengthen our ability to meet environmental sustainability goals. We will formulate and implement programmes to improve and safeguard the environment while contributing proactively to strategic decision-making in the government that will have an impact on the environment. We are committed to ensuring that all services and programmes offered by the Environmental Protection Department (EPD), as well as our own internal operations, are developed and conducted in an environmentally responsible manner.

In pursuance of these goals, the EPD has adopted the following principles:

### Compliance

We aim to establish an effective legislative and an efficient control framework to safeguard the health and welfare of the community from any adverse environmental effects.

We will seek to provide moral leadership by not only complying with the letter of the law, but the spirit of all applicable environmental legislation, standards and regulations, as well as our internal guidelines and procedures, in all our operations within the EPD. We will endeavour to surpass them whenever possible.

### Pollution Prevention

We aim to pre-empt environmental problems associated with development projects, plans and

policies by applying environmental impact assessment in the planning process and seeking opportunities to improve the environmental quality of Hong Kong.

We will implement ISO14001 environmental management systems to improve continually the environmental performance of our major facilities. We will avoid, reduce and control environmental pollution arising from our day-to-day working practices. We will require our contractors to adopt and implement sound environmental management systems and pollution control measures, and actively encourage businesses and other organisations in Hong Kong to adopt similar systems and measures.

### **Response to Environmental Incidents**

We will implement an emergency response system for handling environmental incidents, and will be prepared to respond quickly to minimise the damage to the environment.

### **Minimisation of Consumption**

We aim to plan and provide convenient and cost-effective waste management facilities, as well as promote a sustainable approach to waste management in Hong Kong, in which we consume less, produce less waste, and reuse or recover value from waste.

We will exercise the principles of Reduce, Reuse and Recycle in the consumption of materials and seek continual improvement in the efficient use of natural resources and energy in all our operations.

### **Sustainable Development**

We will actively contribute to government-wide policies and programmes that support sound environmental management and sustainable development. We will use and promote evolving scientific and technological systems, work with others and continue to build new partnerships in the pursuance of sustainable development objectives.

### **Communication**

We aim to promote community awareness, through environmental campaigns, publicity, education and action programmes, and public access to environmental information, with a view to harnessing the community's support for, and contribution to, achieving the desired environmental goals.

We will also publicise to the community our Environmental Policy and report annually on our environmental performance. We will ensure that all our staff are aware of our Environmental Policy, that they will be able to provide detailed information about our Policy and initiatives to stakeholders in their particular areas of concern.

## Training

We will ensure through appropriate training and professional development, that every member of our staff has the knowledge and competency to assume his/her environmental responsibilities and to participate constructively in environmental activities.

## Management Review

The Management will review regularly and seek continual improvement in this Policy in order to ensure it is adjusted to reflect changing internal and external factors.

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## Organisation, Programmes and Responsibilities

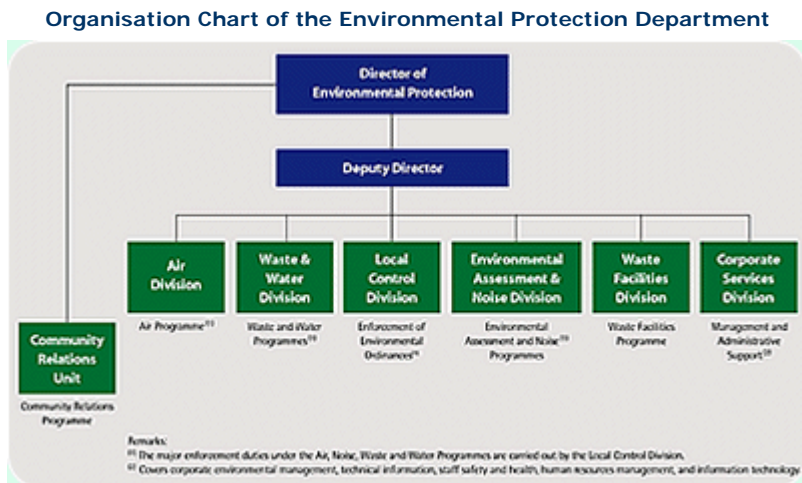
Within Government, the Environment, Transport and Works Bureau has overall policy responsibility for the environment, while the Environmental Protection Department (EPD) implements environmental plans and legislation as well as advises on policy and new initiatives. The EPD was established on 1 April 1986, with staff and resources from six government departments and the aim of bringing the majority of pollution prevention and control activities under one organisation.

The department's responsibilities include implementing environmental policy and plans; promoting community environmental awareness; enforcing environmental legislation; monitoring environmental quality; providing collection, transfer, treatment and disposal facilities for many types of waste; advising on the environmental implications of town planning and new policies; and handling pollution complaints and incidents. These responsibilities are organised under seven programme areas (see below).

In 2002, out of a departmental expenditure of \$2.270 billion, 54.5 per cent was for contract payments for the treatment and disposal of municipal and chemical wastes, 33.8 per cent was for staff costs relating to our programme areas, 6.5 per cent was for capital expenditure and 5.2 per cent was for general operating expenses.

**Our Vision is of a Hong Kong which enjoys an environment that is both healthy and pleasant, in which the community places a premium on sustaining such an environment both for themselves and for future generations**

**Our Mission is to contribute towards realising this vision by applying our professional knowledge, judgement and experience to formulate and implement plans to improve and safeguard the environment, to increase community awareness of environmental issues, to implement environmental protection legislation, and to participate in the town planning process to achieve and maintain a high standard of environmental quality**



The department had an establishment of about 1,600 staff in 2002. About 27 per cent are professionals, about 46 per cent are technical-grade staff and the remaining 27 per cent are administrative and support staff.

Apart from the EPD, other government departments are also responsible for environmental initiatives that are related to their areas of responsibility. For example, the Electrical and Mechanical Services Department is responsible for energy efficiency, while the Agriculture, Fisheries and Conservation Department is responsible for nature conservation.

Our aims and objectives under each of our programme areas are as follows:

### Air Programme

- Achieve and maintain satisfactory air quality through intervention in the planning process.
- Participate in the risk management of potentially hazardous installations and in matters related to energy and global warming.
- Enforce the Air Pollution Control and Ozone Layer Protection Ordinances.
- Enforce the Road Traffic Ordinance against smoky vehicles.

### **Community Relations Programme**

- Promote community awareness through environmental campaigns, publicity, education and action programmes.

### **Environmental Assessment and Planning Programme**

- Pre-empt environmental problems associated with projects, plans, policies and strategies by assessing their environmental impacts and implementing preventive and mitigatory measures where potential problems are identified.
- Strive for the best possible environmental performance in both the public and private sectors.
- Enforce the Environmental Impact Assessment Ordinance.

### **Noise Programme**

- Prevent, minimise and resolve noise problems through intervention in the planning process, implementation of noise abatement measures and enforcement of the Noise Control Ordinance.

### **Waste Programme**

- Establish a framework of legislative and institutional controls to safeguard the health and welfare of the community from the adverse environmental effects associated with the improper handling and disposal of waste.
- Enforce the Waste Disposal and Dumping at Sea Ordinances.

### **Waste Facilities Programme**

- Develop plans and programmes for the minimisation of waste.
- Provide facilities for managing any residual waste in a cost-effective and environmentally acceptable manner.
- Coordinate and manage the implementation of plans and programmes relating to waste minimisation and waste facilities.

## Water Programme

- Develop plans and programmes to ensure the quality of inland and marine waters meets with our conservation goals.
- Formulate plans for sewerage, sewage treatment and disposal facilities and monitor their implementation to meet development needs and environmental standards.
- Enforce the Water Pollution Control Ordinance.

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## EPD Offices and Facilities





**Tsing Yi Chemical Treatment Centre**



**Island West Transfer Station**



**Sha Ling Livestock Waste Composting Plant**



**Restored Shuen Wan Landfill**



**Tung Chung Air Quality Monitoring Station**



**Local Control Office (Territory East)**



**South East New Territories  
Landfill**



**Wan Chai Environmental  
Resource Centre**



**Marine Monitoring Vessel**

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## Our Influence and Impact on the Environment

### The Department's contribution towards improving the environment

#### Main Activities

Contribute to the formulation of major policies and plans within the Government

Develop and implement environmental improvement programmes

Plan and provide waste management facilities

Establish regulatory control framework and enforce environmental ordinances

Build partnerships and engage stakeholders

Promote environmental awareness and

#### Environmental Results

- Environmental impact of policies, strategies and planning proposals minimised
- Sustainability incorporated in decision-making process

Direct improvements in:

- Air quality
- Noise mitigation
- Water quality
- Waste management
- Waste handled and disposed of in an environmentally responsible manner
- Air, water, waste and noise impacts from polluting activities reduced
- Better co-operation gained from all sectors in improving the environment
- Increased awareness and support given to

public participation

preventing and tackling environmental problems

Support research and professionalism in the environmental disciplines

- Professional contribution to environmental management in Hong Kong enhanced

### Environmental impact of our operations

#### Operations and Services

#### Effects and Environmental Impact

Waste Collection, Transfer and Disposal Services

Discharge of wastewater and leachate

- Pollution of receiving water bodies

Emission of landfill gas

- Potential fire and other hazards to human life

Environmental nuisance

- Noise, odour and visual impact

Exhaust emission from on-site treatment facilities, vehicles and vessel fleets

- Air pollution and contribution to greenhouse gas emissions

Consumption of fuel and electricity

- Air pollution and contribution to greenhouse gas emissions

Laboratory Services

Exhaust emission from fume cupboards and safety cabinets

- Air pollution impact

Wastewater discharge

- Pollution of receiving water bodies

Accidental chemical spillage

- Potential hazards to human life

Generation of chemical and biological wastes

- Residual pollution from waste treatment processes

Field Work

Fuel consumption and emissions from vehicles/vessels

- Air pollution and contribution to greenhouse gas

		emissions
	Use of chemicals	<ul style="list-style-type: none"><li>• Contamination of soil and water bodies</li></ul>
	Disposal of samples	<ul style="list-style-type: none"><li>• Residual pollution from waste treatment processes</li></ul>
Office Activities	Consumption of energy and resources (electricity, paper, water, stationery, etc.)	<ul style="list-style-type: none"><li>• Air pollution and contribution to greenhouse gas emissions</li><li>• Depletion of resources</li></ul>
	Generation of solid waste	<ul style="list-style-type: none"><li>• Increased demand for landfill disposal</li></ul>

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## Our Contribution to Strategic Decision-Making

The EPD works closely with other government departments and stakeholders to promote sustainable development and build consideration of the environment into the Hong Kong SAR's decision-making process.

**We will contribute actively to government-wide policies and programmes that support sound environmental management and sustainable development, and we will advise the government on the environmental impacts of strategic development proposals.**



Examples of Strategic Environmental Assessment in Hong Kong

### Input on Major Policies and Strategies

All policy submissions to the Executive Council that have major environmental consequences are required to include an environmental implications paragraph. The same requirement applies to submissions made to the Public Works Sub-committee of the Legislative Council, which approves funding for public works projects. The purpose is to help integrate environmental considerations into the decision-making process.

The EPD reviews these paragraphs. In 2002, we reviewed more than 190 submissions.

Strategic developments and policies are subject to further levels of assessment. A broad assessment is done using sustainability indicators, which the EPD and other concerned departments helped to develop in 2001. The environment is one of several considerations. The Sustainable Development Unit, which was set up by the government in 2001, oversees these assessments. On another level, the EPD directly manages strategic environmental assessments, which look in detail at the environmental impacts of specific policies and strategies. We started putting these assessments on our website in 2002 to provide the public with more access to information. The first three strategic environmental assessments to be placed on the website were the Territorial Development Strategy Review, the Third Comprehensive Transport Study and the Second Railway Development Study.

### **Regional Work**

A major conference on strategic environmental assessments was held for officials and experts from Hong Kong and the Mainland in December. Participants shared experiences and discussed how these assessments can be applied. The EPD also demonstrated how we use the Internet to increase transparency in our work.

Hong Kong co-operates with Guangdong in the Joint Working Group on Sustainable Development and Environmental Protection and its related special panels. The Joint Working Group completed a report on regional air pollution in April 2002. The two sides have agreed on targets for reducing air pollution by 2010.

On water pollution control, Hong Kong and Guangdong are working together to implement a joint programme to clean up Deep Bay, draw up a water pollution control strategy for Mirs Bay and develop a numerical water quality model for the Pearl River Estuary . Hong Kong is also liaising with the State Oceanic Administration (SOA) on the plan for Hong Kong's participation in the National Marine Environmental Monitoring Network after completing the preparation work at the technical level.

### **Greening Government**

Since 2000, all government departments and bureaux have been required to produce annual reports on the environmental performance of their policies and actions. The first two batches of these reports were reviewed by a consultant in 2002 to identify areas of strength and weakness in existing environmental reporting practices and to highlight best practices. The review led to the development of a benchmarking tool to help bureaux and departments improve the quality of their environmental performance reports.

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## Planning for a Better Environment

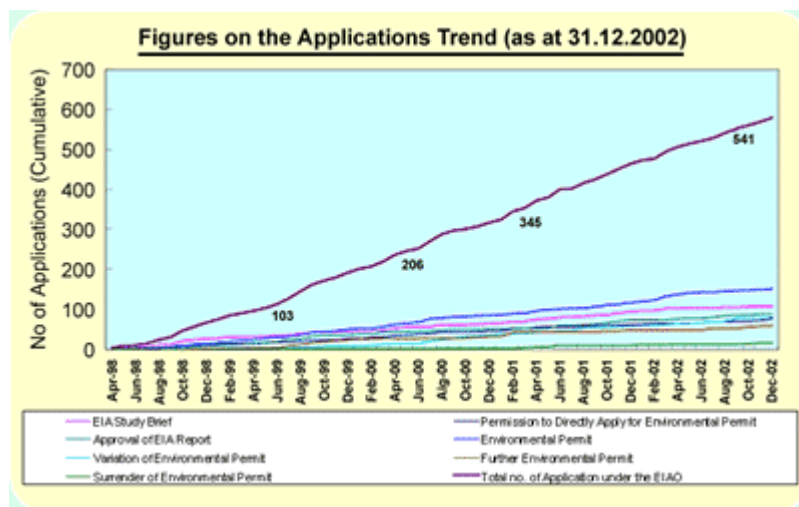
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- ❖ Prevention and Mitigation through Environmental Impact Assessment
- ❖ Better Air Quality
- ❖ Quieter Environment
- ❖ Controlling Water Pollution
- ❖ Environmentally Sound Waste Management and Facilities

### Prevention and Mitigation through Environmental Impact Assessment

The EPD seeks to intervene at the earliest stages of projects to protect people and the environment from adverse impacts. It also aims to engage stakeholders and the public in the process by creating opportunities for them to give their views and gain access to information about specific projects.

**We aim to pre-empt environmental problems associated with projects, plans and policies by assessing their environmental implications and implementing preventive and mitigatory measures where potential problems are identified**



Increasing trend of EIA applications (as at 31 December 2002)

### Environmental Impact Assessment Ordinance

The Environmental Impact Assessment Ordinance (EIAO), which came into effect in 1998, requires all designated projects to undergo EIAs. In 2002, the EPD received 115 applications for projects worth \$31 billion, processed 24 environmental reports and issued 40 environmental permits. The EIAO aims to avoid or mitigate against impacts before projects are built, and the impact avoidance measures contained in the applications approved in 2002 will eventually benefit about 246 000 people. The EPD also managed 156 environmental monitoring and audit programmes.

Several major EIAs were completed and endorsed in 2002, involving such projects as the Deep Bay Link, Shenzhen Western Corridor and Improvement to Tung Chung Road. The Deep Bay Link and the Shenzhen Western Corridor will provide a road and bridge link from the western New Territories to western Shenzhen. The potential impacts on water quality, ecology and noise in the Deep Bay area were assessed and minimised by measures such as a careful choice of bridge alignment and land points and the adoption of a proper bridge design and construction methods. The EIA for the Shenzhen Western Corridor

required cross-boundary co-operation. Each side did its own EIA and shared the information with the other side so the cumulative impacts could be addressed.

The Improvement to Tung Chung Road project will provide a safer and improved road linking Lantau's North and South, without having to open a new road that could disturb many environmentally sensitive sites in the area. To further reduce the potential environmental impacts, it was proposed to build elevated structures over streams so the road passed over, and not through, these ecologically important habitats. About 25 hectares of compensatory planting would also be included to mitigate against ecological, visual and landscape impacts due to the loss of about 15 hectares of shrubland and woodland.

### **Links with Stakeholders**

The EPD is constantly trying to improve communication on the EIA process with stakeholders. Two public hearings on the existing EIA mechanisms were organised by the Legislative Council in December 2001 and January 2002 and indicated the need for more EIA training and support for proponents.

In July 2002, the EPD established the EIAO Support Section as a dedicated advisory unit. Its purpose is to help government works departments enhance their understanding of the EIA mechanism according to the Policy Objectives 2001. All eight works departments under the Environment, Transport and Works Bureau were invited to participate in the programme by the Director of Environmental Protection, who officiated at a seminar for 180 participants in November 2002. Eight tailor-made workshops were then held for a total of 200 engineers. The EIAO Support Section also operates an EIA Helpdesk Hotline to answer enquiries and provide assistance on EIA matters.

Another avenue for communication on EIAs is the User Liaison Groups. Four groups were established in 2000 for government works departments, consultants, contractors, and private developers and public corporations. The groups meet separately with the EPD to share experiences and discuss how the EIA process can be improved. They were brought together for the first time in May 2002, when a User Liaison Groups Congress was held. The various stakeholders shared views and

got direct feedback from each other. Green groups, academics, Advisory Council on the Environment members and other concerned parties were also invited to attend.

### **Public Access**

All EIA reports and decisions are placed on our website, making them accessible to the public. In 2002 the website received more than 95 000 hits. In addition, proponents of major developments have been required to post environmental monitoring and audit data on project-specific web pages since 2001. By the end of 2002, 15 such websites had been set up. These were bolstered with the requirement in late 2002 that webcams be installed on selected major work sites to enhance transparency and encourage greater compliance.

The webcam images can also be viewed on a large television inside the new EIAO Registry Office in Southorn Centre. Computers are set up inside the new EIAO Registry Office in Southorn Centre so visitors can get free electronic access to information including live webcam images. They can also get access to physical copies of EIAs and other reports. Project proponents can also pick up applications and register at the office.

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### Better Air Quality

The EPD has been under significant public pressure to improve air quality in recent years. There is growing public dissatisfaction with visible air pollution, as seen in media reports and letters to newspapers. The government allocated \$1.4 billion in 1999 to address the problem by reducing motor vehicle emissions. As a result, air quality at street level has shown steady improvements. Meanwhile, Hong Kong and Guangdong agreed in 2002 on targets to reduce regional air pollution.

### Monitoring

The EPD monitors air quality at 14 fixed stations, 3 of which are at roadside level. At these roadside stations, levels of respirable suspended particulates have fallen by 19% and nitrogen oxides by 16% since 1999, the year before we started implementing our comprehensive vehicle emission control programme. These figures indicate that our efforts to control emissions from diesel vehicles are succeeding.

The improvement in ambient air quality is not as great as for

**We aim to achieve and maintain satisfactory air quality through intervention in the planning process and enforcement of the Air Pollution Control Ordinance, Ozone Layer Protection Ordinance and other statutory requirements**

roadsides because regional air pollution contributes significantly to the overall pollution levels in ambient air. The ambient air concentrations of two diesel-related pollutants, respirable suspended particulates and nitrogen oxides, have dropped respectively by 10% and 1% since 1999.



Roadside air quality is improving

Table A sets out the compliance status of various monitoring stations with the long-term Air Quality Objectives for major air pollutants in 2002. The hourly Air Pollution Index readings reflect the compliance status of the short-term Air Quality Objectives. The short-term Air Quality Objectives are exceeded when the value of the Air Pollution Index exceeds 100. In 2002, the total number of Air Pollution Index readings exceeding 100 was 1 150, down 38% from 1999.

**Table A : Compliance Status of Long-term  
(1-year and 3-month averages) Air Quality Objectives (AQO) in 2002**

Station		Sulphur Dioxide	Nitrogen Dioxide	Total Suspended Particulates	Respirable Suspended Particulates	Lead
		1-year	1-year	1-year	1-year	3-month
<b>General Station</b>	Central/Western	~	~	~	~	~
	Eastern	~	~	--	•	--
	Kwai Chung	•	•	•	•	--
	Kwun Tong	~	~	~	~	~
	Sham Shui Po	•	•	•	•	--
	Tsuen Wan	•	•	•	•	•
	Sha Tin	•	•	•	•	--
	Tai Po	•	•	•	•	--

	Tung Chung	•	•	•	•	•
	Yuen Long	•	•	x	•	•
	Tap Mun	•	•	--	•	--
<b>Roadside Station</b>	Causeway Bay	~	~	--	x	--
	Central	•	x	--	x	--
	Mong Kok	•	x	x	x	•

- Notes: “•” Complied with the AQO  
 “x” Violated the AQO  
 “--” Not measured  
 “~” Data are below the minimum requirement for compliance assessment

**Motor Vehicle Pollution**

Our motor vehicle emissions programme involves replacing diesel taxis and public light buses with cleaner engines, controlling diesel emissions from the remaining vehicles, and introducing stringent emission standards for new vehicles. The main points are as follows:



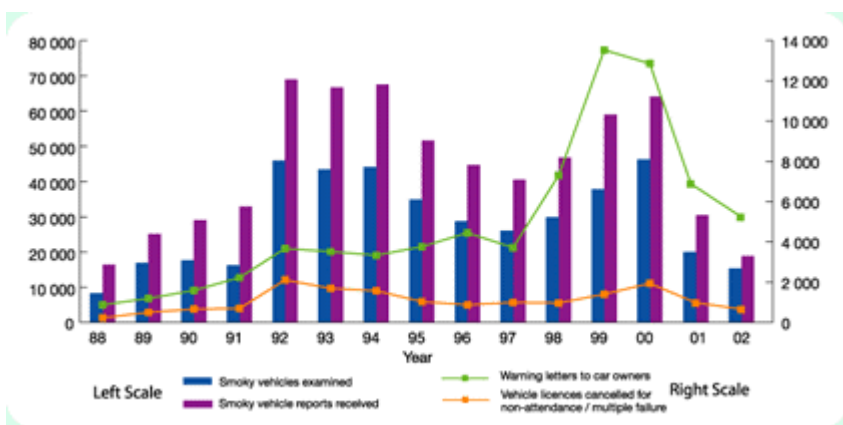
- All taxis must switch to **A particulate removal device** liquefied petroleum gas (LPG) by early 2007. There has been excellent progress, with more than 90% making the switch by the end of 2002. This was funded out of the government's \$1.4 billion grant for reducing vehicle emissions.
- Public light buses are being funded to switch to LPG or electric vehicles by 2005. Grants for these buses were made available from August 2002. The government wants the money to go where

it is most needed, so grants have not been made available to private light buses, which travel shorter distances and have less air pollution impact. Instead, the government has agreed to waive the first registration tax for LPG private light buses.

- Pre-Euro I diesel vehicles are being retrofitted with particulate removal devices. In the first phase, light diesel vehicles were offered grants to pay for the retrofitting and 80% of these vehicles had been retrofitted by the end of 2002. The grant period is now over. Legislation will be introduced, probably in 2003, to make the devices mandatory. The remaining 20% of light goods vehicles will have to pay for the installation themselves. In the second phase, grants for heavy pre-Euro diesel vehicles started being distributed in late 2002. The first of these grants pays for particulate removal devices to be installed in the 30 000 heavy diesels that operate only within Hong Kong. The grants will run out in mid-2004. Grants are also earmarked for the 10 000 diesels that travel across the boundary and a call for tender was issued in 2002 for retrofitting these vehicles. We are also looking for suitable devices for the 4 000 long-idle vehicles. Eventually, legislation will also make particulate removal devices mandatory for heavy vehicles.
- Older diesel vehicles will eventually be replaced by vehicles with strict emission controls. All newly-registered diesels currently must meet Euro III standards. It is hoped to introduce Euro IV standards in 2006, once these are implemented in Europe. Ultra-low sulphur diesel has also become the only fuel available at petrol stations, as of September 2000, and it became mandatory in 2002.

The number of smoky vehicles seen under our Smoky Vehicle Control Programme has continued to drop. The EPD processed 18 533 smoky vehicle reports in 2002, down 70% from 1999. All vehicles spotted emitting excessive smoke must now undergo a chassis dynamometer test. The test became mandatory for vehicles over 5.5 tonnes in 2002 after earlier being made mandatory for smaller vehicles.

#### **Vehicle smoke control programme enforcement statistics**



### Pearl River Delta Air Quality Study

Hong Kong and Guangdong released a joint study report on regional air pollution in April 2002. Among the highlights were:

- Targets agreed on reducing pollution. By 2010 sulphur dioxide will be lowered by 40%, nitrogen oxides by 20%, respirable suspended particulates by 55% and volatile organic compounds by 55%. The base for the targets is 1997 emission levels. The targets are considered to be achievable in Hong Kong based on currently available control measures and proposals for further control of power plants and VOC-containing products.
- Four major joint tasks were identified. The first is to develop a regional air quality management plan, which is expected by the end of 2003. The two governments consider emissions trading to be one of the possible options for achieving the emission reduction targets. A study is being carried out to assess the feasibility of implementing an emission trading pilot scheme among some of the power stations in the Pearl River Delta Region. This study will be completed by 2003. The second task is to set up a regional air quality monitoring network, which is planned to be operating by 2004. The third task is to continue updating the pollution inventory

and keep a watch on new pollution sources. We are compiling the 2001 regional emission inventory and plan to complete it by 2003. We are also producing a regional handbook on preparing emissions inventories, which will also be completed by end of 2003. The fourth task is to encourage technical exchanges to enhance the capabilities of air programme people on both sides.

### **Other Air Issues**

Consultations were being held on extending vapour recovery controls to refueling operations at petrol stations. Currently, they only apply to bulk delivery of petrol to petrol stations. Preparations are being made to introduce regulations in 2003 to reduce petrol vapour emissions at petrol filling stations during vehicle re-fuelling.

We are also working to introduce a voluntary indoor air quality (IAQ) certification scheme in 2003. The scheme aims to recognise good IAQ management practices and encourage the owners and management of premises to pursue the best IAQ.

Practice notes for managing air quality in air-conditioned public transport facilities are being finalised and will be issued to operators in 2003.

In response to the decisions of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer, Hong Kong continues to join in global efforts as it formulates strategies for managing CFCs and other ozone-depleting substances. After receiving positive feedback from consultation with affected parties, the EPD is considering a programme to ban the importation of CFC-containing products such as refrigerators, vehicles and metred-dose inhalers, tentatively by 2005, in step with other advanced countries.

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### Quieter Environment

We aim to maintain an acceptable acoustic environment for the community through planning, noise abatement and other controls. Traffic noise is our biggest concern and solutions will be difficult to achieve on existing roads. Construction noise and commercial and industrial noise are addressed through legislative controls and, increasingly, through partnership programmes. These are outlined in the partnership section of this report.

#### Traffic Noise

We are tackling the problem of traffic noise on three fronts: by preventing excessive traffic noise on new roads, by reducing traffic noise on existing roads, and by controlling the source noise levels of new vehicles.

#### New roads

We have made good progress in planning against traffic noise. This is done through early intervention in the planning process, for instance in determining the alignments of new roads and lay-outs of new towns. We

**We aim to prevent, minimise and resolve environmental noise problems through intervention in the planning process, implementation of noise abatement measures and enforcement of the Noise Control Ordinance**

also advise on the fitting of noise barriers, enclosures and low-noise surfaces on new roads. Between 1986 and 2002, various land-use measures and suitable road re-alignments were adopted, and about 37 kilometres of noise barriers and enclosures were erected along new roads, protecting more than 150 000 dwellings. The use of low-noise surface material is now a standard for new highways with speed limits of 70 kilometers per hour or above. Where these solutions are not feasible or are insufficient in new road projects to protect existing noise sensitive developments, acoustic insulation and air-conditioners are provided as a "last resort" measure. Since 1995, about 6 900 flats have been protected in this way.

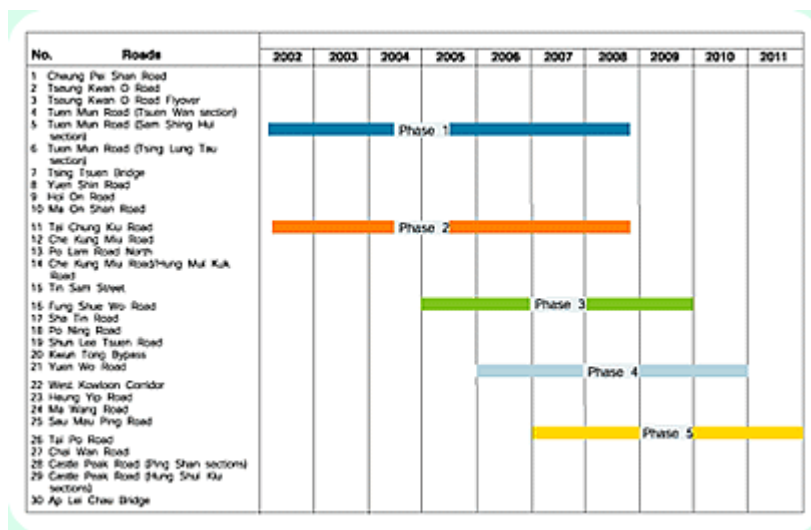
### Existing roads

The situation is more difficult on existing roads. In November 2000 the government announced a new policy to reduce noise from existing roads. So far 32 road sections have been deemed suitable for noise barriers or enclosures and 72 roads were deemed suitable for low-noise surfacing. Due to the large scale of the work, the retrofitting barrier work will take more than 10 years to complete, subject to funding allocation. Investigation studies and design work have started for barriers on five existing roads. Work has also started on re-surfacing the first batch of 24 roads with low-noise material, to be completed in 2004. We are also exploring new low-noise surface materials with the Highways Department, to see if a more durable option can be found.



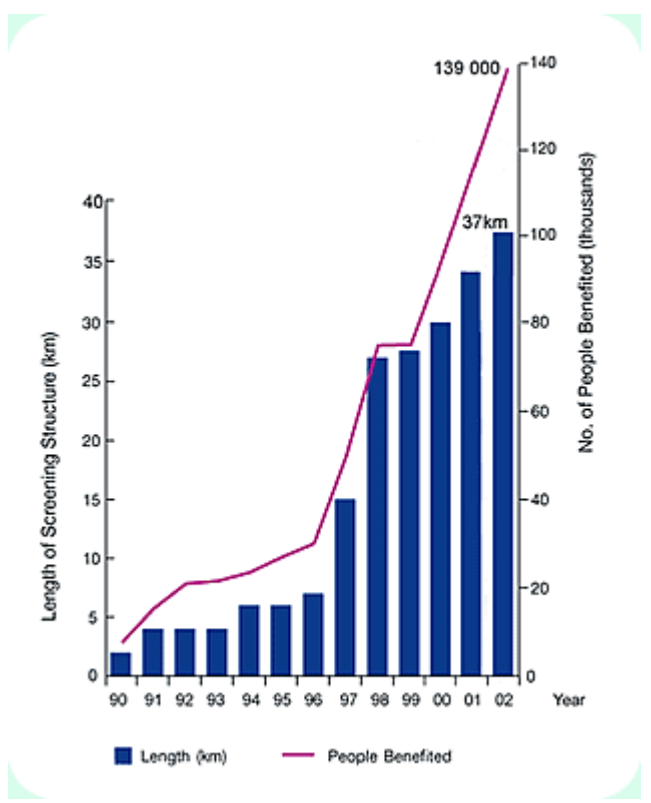
**A close look of the low-noise road surface showing the open-texture finish**

**Retrofitting noise barriers - tentative 10-year implementation programme**



Despite these measures, another 550 roads still have unacceptable noise levels. In 2002 we looked into traffic management measures on a trial basis. A trial is being planned at Texaco Road, Tsuen Wan in 2003 to evaluate the effectiveness of the traffic management scheme.

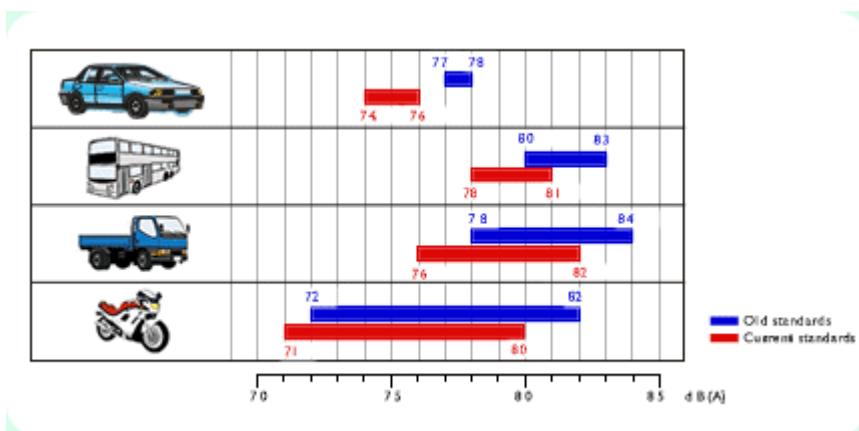
Screening structure benefit more people



**Vehicle noise regulations**

In 2002 the Legislative Council gave the green light to new vehicle noise regulations that we had proposed. These incorporate the latest noise emission standards adopted in Europe and Japan, from where most of Hong Kong's vehicles are imported. Any newly-registered vehicle will have to meet the new standards. The stricter standards are expected to reduce overall traffic noise, as the existing fleet is gradually replaced by quieter vehicles.

**Noise Standards under the Noise Control (Motor Vehicles) Regulation**



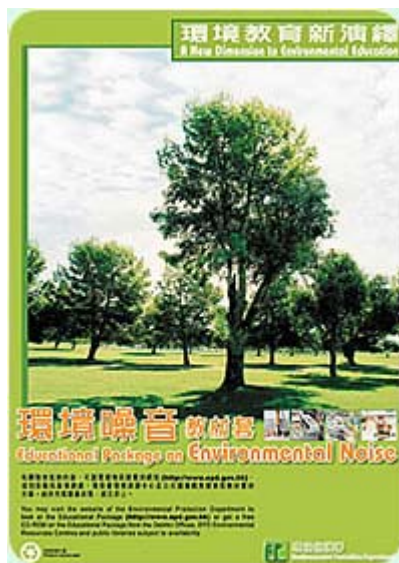
### Construction Noise

Construction noise is a persistent source of complaint, for which prosecution has not always had the desired deterrent effect. To address the problem, the government proposed an amendment to the Noise Control Ordinance in 2000 to explicitly hold corporate management, such as directors, liable for noise offences committed by their bodies corporate. After negotiations with the industry, the government has agreed to give company directors and senior managers written warning after the first offence and to prosecute only if a second offence or more is committed after receiving the warning. There will also be a two-year time limit to the warning letter. The Legislative Council passed the revised amendment in June 2002. Codes of practice on good management practices to prevent violations under the Noise Control Ordinance are being drafted and the law will be applied after these are completed.

### Raising Awareness

The complex nature of noise pollution has led to misunderstandings in the community about the evaluation of noise and how it can be controlled. At the end of 2002 we were putting the finishing touches on our first educational package on environmental noise. The package features a website and CD-ROMs to be distributed to schools and District Offices in

early 2003. Animation and graphics are used to help people visualise noise and a simpler version has been prepared specifically for young students. Two seminars were held for teachers in late 2002 to introduce the package to them.



**Educational Package on  
Environmental Noise**

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## Planning for a Better Environment

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### Controlling Water Pollution

The EPD monitors water quality in rivers, streams, beaches and marine waters, and aims to ensure they meet healthy levels. In 2002 a major achievement was the long-awaited improvement in water quality in Victoria Harbour, following the completion of the first stage of the Harbour Area Treatment Scheme (HATS). The gains were widely spread throughout the harbour area, although the eastern portion benefited most.



Water quality is monitored regularly

**We aim to ensure that the quality of our marine and freshwater is such that the various conservation goals for them can be met, and that plans are formulated and implemented to ensure Hong Kong's sewage systems can operate safely and effectively both now and with future urban development**

### Water Quality Monitoring

In 2002, 87 per cent of samples from marine monitoring stations met the overall compliance requirements for the Water Quality Objectives

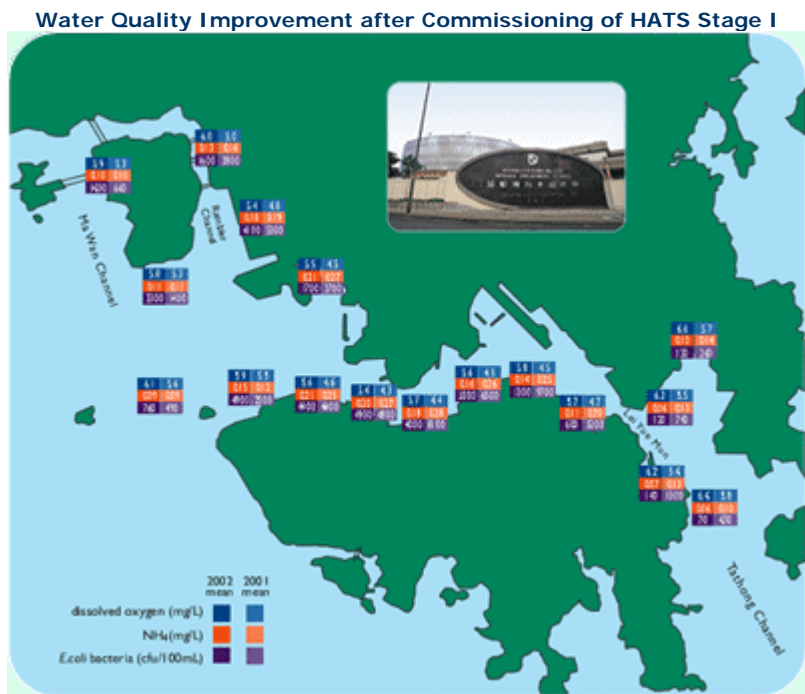
(WQOs), compared with 79 per cent in 2001. This marked increase was mainly due to a significant improvement in water quality in Victoria Harbour, as the first stage of HATS came into operation in 2002. The results for rivers and streams showed 82 per cent of monitoring stations met the WQOs, which was similar to that in 2001 (81 per cent). Among the beaches monitored by the EPD, 33 of the 41 gazetted beaches (80.5%) met the WQOs for bathing water in 2002. The number of beaches graded "good" increased by 2 to 23. However, the number of "very poor" beaches also increased, from two in 2001 to six in 2002. The number of "poor" beaches decreased from five to two. The deterioration occurred in beaches of the Tsuen Wan District near the western harbour, where the effluent from Stonecutters Island is concentrated. The situation is expected to improve once further stages of the Harbour Area Treatment Scheme are completed.

We typically measure physical and chemical parameters in our monitoring, but we are also interested in applying biological indicators in assessing the impact of pollution. These have been used for the contaminated mud disposal site at East Sha Chau and the results indicate there has been no trend of increasing contaminant burden in target species collected in the subject area. In 2001 we began a study to examine how we could extend biological indicators to the long-term monitoring of marine pollution and environmental health. We expect to complete the study in June 2003.

### **Harbour Area Treatment Scheme (HATS)**

The first stage of HATS completed its first full year of operation in late 2002, with positive results. This stage involves collecting sewage from Kowloon and eastern Hong Kong Island and applying chemically-enhanced primary treatment at Stonecutters Island, which removes approximately 50% of the total organic pollution loading. This has had a widespread beneficial impact on water quality. Compared with 2001, bacteria levels have dropped by about 90% in the eastern harbour, ammonia levels have dropped by 50-60% and dissolved oxygen has increased by 20-30%. The improvements extend through the central harbour and up into the Rambler Channel where, at the northern end, bacteria decreased by about 60% and dissolved oxygen rose by 20%. Dissolved oxygen also rose by about 10% in the western harbour. However, as expected, there was a deterioration in bacterial levels (increases of 55-135%) and ammonia (increase up to 26%) in areas

directly surrounding the outfall itself. To reverse these changes, it will be necessary to pursue the further stages of HATS.



**Stonecutters Islands Swage Treatment Works**

The remaining HATS stages require community agreement on the level of treatment, location and cost. An International Review Panel of HATS recommended in November 2000 that the level of treatment be raised and that the treated effluent be discharged within the harbour. The government is testing the effectiveness of alternative treatments, including biological aerated filter. A major study is also underway on the environmental and engineering feasibility of four location options recommended by the panel. The options are to conduct all treatment at

the existing Stonecutter's Island plant, build two plants at Stonecutter's and Lamma Island, build two plants at Stonecutter's and Sandy Bay, or build three plants at Stonecutter's, Sandy Bay and North Point. A study was also commissioned in 2002 to investigate the benefits of private sector participation in sewage treatment. The studies should be completed in 2003 and the results will be released to the public.

Meanwhile, a consultation on the proposed water quality criteria for HATS resulted in a consensus. The consultation involved concerned stakeholders such as academics, green groups and learned societies. The consultation resulted in more stringent requirements for dissolved oxygen, especially in sensitive areas, and adjustments to nutrient criteria to reflect observed background levels and the potential importance of phosphorus in promoting algal blooms.

### Other Sewage Work

Sewerage master plans have been reviewed to take into account projected population increases up to 2016. In light of revised population forecasts and development proposals, the review of sewerage master plans for Central and East Kowloon, Tuen Mun, Tsing Yi and the Outlying Islands proposed upgrading works in these areas. Similar reviews on the need for additional services for Hong Kong Island, North District and the Tolo Harbour area are expected to be completed in 2003. Further reviews will be undertaken if the need is identified by planning studies.

Apart from sewerage master plans, a study on urban stormwater pollution control focusing on the West Kowloon area will be commissioned in 2003, and will recommend appropriate management and control measures.

Two proposals concerning water pollution control legislative amendments could not be carried forward as planned. One concerned proposed new effluent standards, which are generally supported by scientists and green groups but have been opposed by some commercial and industrial sectors. The feasibility of promulgating



Treated and

the new standards is now under consideration by our policy bureau. Opposition also greeted a proposed amendment to the Water Pollution Control Ordinance to close loopholes, create heavier fines and make some provisions more business-friendly. In light of the public comments received, the EPD revised some of the proposed legislative amendments and these were being considered by the policy bureau at the end of 2002.

**disinfected effluent  
can be re-used in  
such things as  
flushing, landscape  
irrigation and  
vehicle cleaning**

An effluent re-use demonstration scheme is being planned for a government sewage treatment plant in the North District area. The reclaimed water will be used mainly for toilet flushing purposes. Proposals for the scheme are being drawn up, with a view to commence the demonstration scheme in 2004. Another trial scheme will be carried out at Ngong Ping on Lantau Island, where reclaimed water will be supplied from the new sewage treatment plant in 2005 for flushing and other possible uses.

### **Regional Efforts**

Hong Kong and Guangdong have had on-going co-operation and exchanges on regional water pollution control for common water bodies since the early 1990s. Under the Deep Bay Water Pollution Control Joint Implementation Programme (JIP) established in 2000, the Hong Kong and Shenzhen governments are reducing the pollution load to Deep Bay, with a view to restoring the water body to a clean and healthy state by 2015. The JIP will be reviewed jointly by both governments every five years. In 2002, both sides reached an in-principle agreement to exchange information on Deep Bay's water pollution control programmes on a regular basis and to advance the first JIP progress review.

Hong Kong and Shenzhen are also co-operating on a study of Mirs Bay. An inventory of pollution loads has been compiled by staff from the EPD and the Shenzhen Environmental Protection Bureau, to determine the sources and types of pollution entering the bay. This information was used to assess the pollution impacts and determine the bay's assimilative capacity. The study is at the final stage of evaluating alternative pollution control strategies and a recommendation on the regional water quality

management plan for Mirs Bay will be available in 2003.

The Joint Working Group on Sustainable Development and Environmental Protection, which has representation from both Hong Kong and Guangdong, set up a Pearl River Delta Region Water Quality Protection Special Panel in 2001. Under the Special Panel, the two sides are working together to develop a numerical water quality model for the Pearl River Estuary, with the ultimate goal of formulating a joint water quality management plan for the estuary. In 2002, a project coordinator was appointed to provide technical support services for the project. A modelling specialist contractor and a data supplier will also be employed in 2003 to work on model development and data acquisition respectively.

In 2002, the EPD completed a marine monitoring method validation exercise with the State Oceanic Administration's (SOA) National Marine Environment Monitoring Centre, South China Sea Environment Monitoring Centre and Government Laboratory. The exercise was conducted to ensure the comparability of marine monitoring data between Hong Kong and the Mainland. Plans for Hong Kong's participation in the National Marine Environment Monitoring Network were under development pending the restructuring of the Network, to be finalised by the SOA.

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## Planning for a Better Environment

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### Environmentally Sound Waste Management and Facilities

Waste management is at a crisis in Hong Kong. Landfills are filling up more quickly than originally planned. Alternative uses for the large annual loads of construction waste are drying up. And the options for dealing with the problem of waste disposal require hard decisions. Over the next year or two, we will be investigating waste reduction technologies and new landfill sites, and at the same time continue to introduce new recycling programmes. Public consultation will be of great importance as we try to find a more sustainable way to manage Hong Kong's waste.

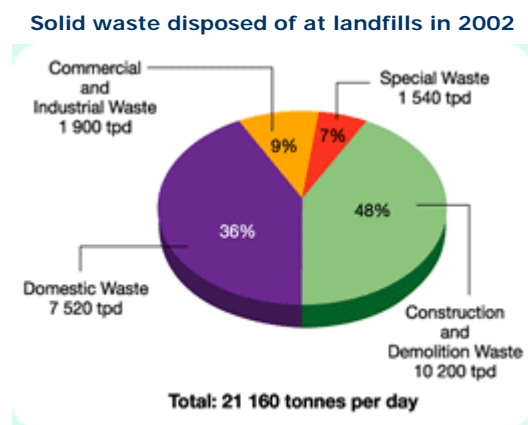
#### Wasteloads

**We aim to provide convenient and cost-effective waste management facilities, as well as promote a sustainable approach to waste management in Hong Kong, in which we consume less, produce less waste and re-use or recover value from waste**



Everyone must help to recycle and reduce waste

In 2002 we handled 7.7 million tonnes of waste at landfills, including 3.7 million tonnes of construction waste. The total wasteload was up 26% over 2001 largely due to increases in construction waste. Between February and October, inert construction waste had to be diverted to landfills because several reclamation sites, which would normally accept the waste, closed earlier than expected. As a result, construction waste comprised 50% of the total wasteload, up from 40% the previous year. The problem is expected to recur in coming years (see Construction Waste, below).



In addition, EPD facilities dealt with 60 445 tonnes of livestock waste in 2002, 290 000 tonnes of sewage and water treatment sludge and 270 000 tonnes of other special wastes. The Chemical Waste Treatment Facility on Tsing Yi Island treated 52 450 tonnes of chemical waste.

### Waste Reduction

One of our main goals is to reduce the amount of waste going to landfills. The Waste Reduction Framework Plan was published in 1998 to address the problem, with the aim of diverting 40% of municipal solid waste from landfills by 2007, up from 33% at the end of 1998. In 2002 36% of municipal solid waste was being diverted. Compared to other countries, Hong Kong does quite well with recycling. For example, in 2000 the United States recycled only 30% of its waste, while Singapore recycled

40% of waste.

The waste reduction improvements have been achieved through the introduction of recycling programmes throughout Hong Kong since 1998. Prior to then, most recycled waste came from industrial and commercial sources. Recycling programmes have been set up in 1 200 housing estates and all 1 300 primary and secondary schools, as well as hospitals, hotels, supermarkets, the airport and public transport facilities. They are also being extended to villages and older neighbourhoods, thanks to a \$100 million injection into the Environment and Conservation Fund for community-based waste prevention and recovery programmes, which was approved by the Legislative Council's Finance Committee in 2002. Also in 2002, producers of mobile phone batteries began to voluntarily take back used products for recycling and supermarkets began taking back clean plastic bags for recycling. Preparations were also underway for a pilot programme to recycle used tyres.



### Construction Waste

Construction and demolition waste has become an urgent problem. The number of reclamation sites to which inert waste could be sent has been

drastically reduced. These sites, which were to start operating between 2002 and 2005, have been either put on hold or had their timing altered. Moreover, the quantity of construction waste to be disposed of has gone up. It originally was thought that disposal sites would need to be found for 69 million tonnes of construction waste, but this was revised upward to 73.1 million tonnes in 2002. Sending the waste to landfills would shorten the lives of the landfills by 10 years. Several things therefore are being done to absorb or reduce construction wasteloads:

- Since August 2002, Government works departments have been further required to adopt measures to minimise the generation of inert materials and maximise reuse/recycling through appropriate design/construction methods at the design and planning stage of projects. Specifications for waste management plans for government works contractors will be tightened in 2003.
- Quarries have agreed to accept an extra 3.7 million tonnes of rocks from government works projects for processing by the end of 2005. A temporary plant for recycling lower-grade material was commissioned at Tuen Mun Area 38 in July 2002.
- Temporary fill banks are being opened to store re-usable inert waste. One site opened at Tseung Kwan O in October 2002. Another will open in Tuen Mun in 2003.
- Mandatory onsite sorting of waste will be extended from government demolition projects to all government works projects in 2003.
- Landfill charges are being prepared for construction and demolition waste in the first phase. The Legislative Council was consulted in May and June and consultations have also been conducted with the industry. The proposal has been held up in the past due to industry opposition, but it is hoped to introduce it in Legislative Council by the end of 2003.

These measures will absorb 66.6 million tonnes of construction waste. That still leaves 6.5 million tonnes that will have no outlet by 2005. The government is exploring all avenues and examining the feasibility of re-

using these inert materials in reclamation projects outside Hong Kong.

### **Waste Facilities**

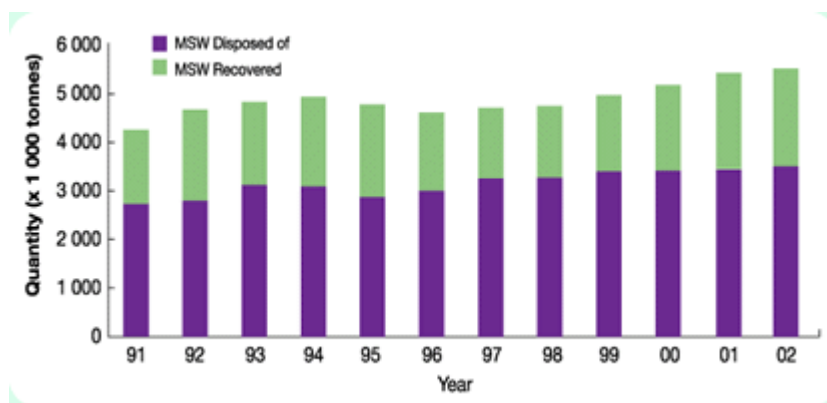
Between 2002 and 2050, Hong Kong will need landfill capacity of 510 million tonnes. That figure takes into account improved waste recovery and the introduction of waste reduction technologies. The current landfills only have about 110 million tonnes left between them and are expected to be full in 5 to 12 years, depending on the location. It takes about 10 years to build a new landfill, so the EPD is urgently trying to address the issue.

A study on extending the existing landfills was completed in 2002. Several extension schemes have been identified. The public would need to be consulted on the extensions, which could provide another 100 million tonnes of landfill capacity between 2016 and 2040.

Alongside this, the EPD invited Expression of Interest in 2002 on technologies for processing and disposing of municipal waste. Fifty-nine submissions were received from 16 countries or cities. An advisory group comprised almost entirely of non-officials is studying the submissions and will make its recommendations in 2003. The public will be consulted on the best options and likely sites. The tentative dates for consultations on the options for the Integrated Waste Management Facility and for the likely site are early 2004 and mid 2004, respectively. An earlier government study on clean-burning incineration has been completed and it will be incorporated into the consultation if the advisory group recommends this option.

Even with landfill extensions and waste reduction technology, a new landfill is still needed to accept 300 million tonnes of waste. Given the limited availability of land in Hong Kong, the EPD has determined that there is probably only one land option. In addition, an artificial island could be built at sea, with the rubbish disposed of above sea level. The public will be consulted on the options.

### **Quantity of municipal solid waste disposed of and recovered 1991 to 2002**



### Other Waste Issues

Tenders were invited in 2002 to build a storage site for low-level radioactive waste on Siu A Chau. The EPD is the works agent for this project, which is being managed by the Department of Health. Construction of the disposal site will be completed in 2004.

Consultations on the control of clinical waste were completed in 2002. These have gone well, with support from all stakeholders. The principle of self-regulation has been agreed to, with the necessary legislation to back it up. The intention is to require all clinical waste producers, from large hospitals to small private clinics, to segregate clinical waste from other waste types and to arrange for it to be delivered to a licensed disposal facility for disposal. A proposal outlining this programme, along with a charging scheme, will be submitted to the Legislative Council in 2003.

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## Effective Enforcement and Emergency Response

Compliance with environmental laws has been improved through our partnership programmes, described elsewhere in this report. But this has not eliminated the need for an effective deterrent against offenders. We regulate specific polluting activities through licensing procedures. We have strengthened our response to complaints about pollution. And we have improved our prosecution capabilities through the establishment of a dedicated unit.

### Licensing

The EPD operates a "one-stop shop" where operators can apply for all necessary pollution control licences and permits in one place. They can apply either in person at any of the EPD's nine one-stop-shop offices or on-line. In 2002 we issued about 9 000 licences and permits.

### Inspections

The Local Control Offices carried out 66 630 inspections in 2002. Plans are underway to improve the inspection process through the use of new technology. Portable digital assistants (PDAs) are being used in some inspections, for example in chemical waste inspections and marine dumping controls. They reduce the use of paper and improve efficiency by enabling officers to download information about companies, which can be accessed during on-site inspections. We are also investigating Internet links for PDAs.

In December 2002, all major development projects were required to mount webcams on-site, enabling operations to be observed over the Internet. The initiative was made under the Environmental Impact

**We aim to establish an effective legislative and efficient control framework in order to safeguard the health and welfare of the community from any adverse environmental effects**

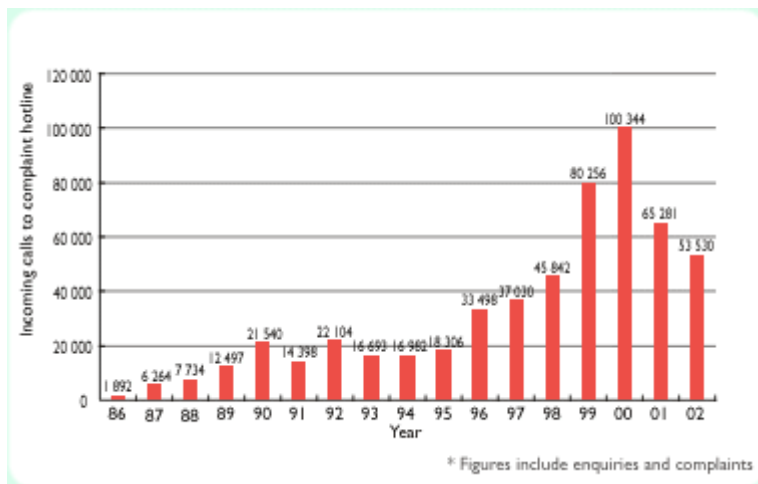
**We will actively encourage businesses and other organisations to adopt pollution control measures**

Assessment Ordinance. It is hoped webcams will help to deter offences and provide inspectors and the public with a quick overview of on-site activities.

### Complaints

The EPD hotline received 53 530 calls in 2002, of which about 11 600 were pollution complaints and the rest enquiries. Another 14 000 complaints (a rough figure) were received through other means including letter, e-mail or referral from other government departments. Some noise complaint cases are handled directly by the Police. Excluding these, the total number of complaints handled and investigated by EPD was 19 449, similar to 2001 but lower than the 26 695 complaints received in 2000. There are several reasons for the decline in complaints. Smoky vehicle complaints have dropped by 57 per cent (from 13 240 in 2000 to 5 663 in 2002) due to our vehicle emissions control programme. The partnership programme and a government initiative to penalise persistent offenders are having an effect. And the economic downturn means there is less construction activity, which typically is a major source of complaint. However, complaints about daytime construction noise continued to be high, totalling 1 314.

Pollution complaints have dropped in recent years



We changed the way we handle complaints in October 2002. The EPD Customer Service Centre replaced the government's centralised call centre as the main body for receiving pollution complaints. It employs a geographical information system so operators and inspectors can pinpoint precisely the location of a complaint. It also produces records of past complaints and follow-up action, so both callers and EPD staff can be informed immediately of the situation. In terms of our response rate, we responded to 99 per cent of complaint calls within three working days.

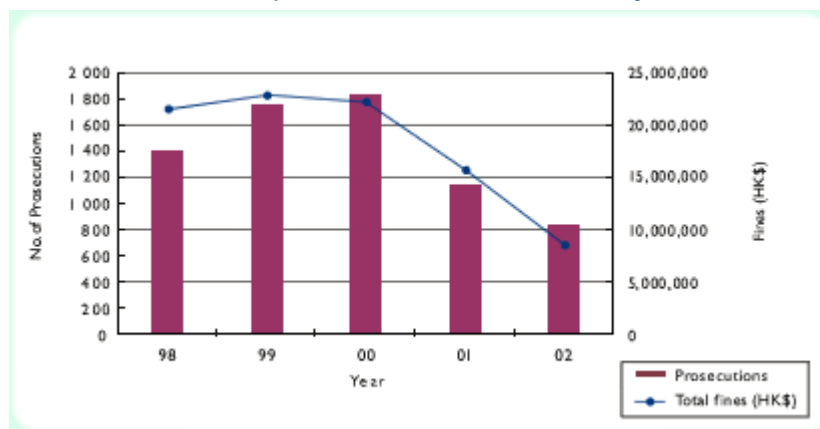
### **Prosecutions**

Prosecutions have declined over the past two years as a result of the partnership programme, the economic downturn and the construction industry's growing compliance with a 1998 construction dust regulation. The EPD has also provided technical advice to various industries on how to comply with anti-pollution laws. Over the past three years we have held 130 seminars attended by about 15 000 participants. In 2002 we held 22 seminars attended by about 1 600 participants.

In 2002 the total number of prosecutions was 842, down from 1 151 cases in 2001 and 1 824 cases in 2000. The highest number of prosecutions - 273 - was carried out under the Noise Control Ordinance, followed by 222 prosecutions under the Air Pollution Control Ordinance, 206 prosecutions under the Waste Disposal Ordinance, 133 prosecutions under the Water Pollution Control Ordinance, 5 prosecutions under the Dumping At Sea Ordinance and 3 prosecutions under the Ozone Layer Protection Ordinance.

The number of offenders pleading not guilty has not declined in step with the drop in prosecutions. In 2002, some 171 offenders pleaded not guilty as against 177 in 2001. This coincided with an announcement by the government in 2002 that companies with three convictions or more will be prohibited from bidding for public projects for six months. To deal with not-guilty plea cases more effectively, a Central Prosecution Section (CPS) was set up in 2001, led by a full-time legal professional. In the first full year of operation of the CPS, polluters charged with environmental offences were acquitted in less than 7% of those prosecution cases that proceeded. The CPS provides specialist training for its in-house prosecutors and also arranges appropriate training and provides legal advice to enforcement staff on matters such as case preparation and the gathering and handling of evidence.

Number of prosecution cases in the recent years



### Other Work

The EPD participates with the Police in catching smoky vehicles. In 2002 we stopped 1 056 vehicles for testing. A total of 167 fixed-penalty tickets of \$1,000 each were handed out by the Police. The figure has dropped over the past three years as a result of our vehicle emissions control programme.

We also continued to carry out a Sewer Connection Programme for unsewered villages in the New Territories. In 2002 we connected 39 village houses and 300 villagers to public sewers. Since the programme began in late 1995, we have connected 3 342 village houses and 24 117 villagers.

The first stage of a scheme to treat the contaminated sediment of the Shing Mun River was completed at the end of 2002, costing \$50 million. It has improved water quality, apart from an odour problem which occurs during periods of very low tide. The second stage of the scheme will cost \$28 million and aims to clean up the remaining part of the river.

### Response to Emergency Incidents

The EPD works closely with other government departments such as the

**We have an emergency response system for handling environmental**

Fire Services Department, Marine Department and Government Laboratory to provide a speedy response to environmental incidents. We have comprehensive response plans for dealing with 36 different types of emergency situations on land and at sea, including oil and chemical spills.

**incidents and are prepared to respond quickly to minimise the damage to the environment**

The EPD provides dedicated support for all emergency responses and the Chemical Waste Treatment Centre contractor provides chemical waste collection and disposal services for incidents involving chemicals. In 2002 we were involved in 40 land-based incidents and 10 marine-based incidents. Clean-up work was required in these incidents and was carried out satisfactorily.

An Emergency Response Drill team was set up in 1999 to enhance staff performance and readiness in emergency situations. In 2002 it conducted three drills.

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## Building Partnerships

The EPD recognises the need to win support from all segments of society for environmental initiatives. We therefore have been building partnerships with relevant stakeholders and professionals at both the local and national levels, thereby gaining invaluable insights and experience. At the same time, we are pursuing partnerships with potential polluters. These are helping to reduce offences and improve understanding on both sides.

### Locally

#### *Formal Partnerships*

The most prominent of the EPD's partnerships are the four formal partnership programmes. These were initiated in 2001 with industries that attract a large number of pollution complaints from the public - the construction industry, restaurants, vehicle repair workshops and property management. The aim here is to promote compliance and understanding, without compromising enforcement actions (see enforcement section elsewhere in this report).

**We will work with others and continue to build new partnerships in the pursuance of sustainable development objectives**

**We actively encourage businesses and other organisations in Hong Kong to adopt environmental management systems and pollution prevention measures**



**Formal partnerships have been set up with sectors that attract a lot of complaints**

- The first partnership was with the Hong Kong Construction Association, which had been developing for several years before it was formalised in 2001. In 2002, we jointly produced a joint CD Rom and pocket handbook for on-site use and published a "Best Practice Guide for 2002". A website on environmental laws and good practices was launched. And a major joint conference was held for 250 participants in November, on "Partnership for Green Construction: A New Era for Hong Kong's Development". Since January 2001 we have organised 41 seminars for 3 300 participants, including 22 seminars for 1 600 participants in 2002.
- With restaurants, we set up a free, one-stop helpdesk for the trade, covering (1) a dedicated green restaurant website ([www.greenrestaurant-hk.org](http://www.greenrestaurant-hk.org)), (2) a hotline to respond to request for technical advice, and (3) a compiled list of pollution control equipment suppliers and contractors in 2002. We worked with the main food and restaurant organisations to co-organise the "Environmental Exhibition and Conference for the Food and Restaurant Trade" in July, which attracted several thousand participants. The EPD also completed a trial with the Hong Kong University of Science and Technology on a technique for controlling

odours from restaurants, which has been bought by a private company for development. And we organised an eight-day study mission to Japan to look at green practices in restaurants there, which was attended by representatives from the four main food and restaurant organisations, the EPD, other concerned government departments, and professionals and business representatives.

- The Hong Kong Vehicle Repair Merchants Association started sending out ambassadors from its ranks in 2001 to advise workshops on how to control pollution. In 2002 the Environmental Vehicle Repairers Association Ltd joined the scheme. Twenty new environmental ambassadors were signed up, bringing the total to 50. By the end of 2002, 328 workshops had agreed to be visited by the ambassadors. The EPD also organised a technical seminar in November on a device for controlling volatile organic compound emissions, which was developed by the Hong Kong Productivity Council. The vehicle repair trade associations also participated with the EPD and the Kowloon City District Council in organising a "Free Vehicle Emission Testing Day" in July.
- The partnership with property managers was officially launched in October 2001. In November 2002 the EPD and the Hong Kong Association of Property Management Companies agreed to form an EPD/Property Management Partnership Liaison Group to enhance co-operation on green issues. Six large private housing management companies also agreed in 2002 to incorporate EPD information into their owners' handbooks and guidelines. A training workshop on environmental issues was organised in December for about 300 property managers.

### **Government**

The government is also one of our important partners. In April, representatives from the EPD and three other Works Departments visited Japan to study road maintenance work, in particular the use of quiet or low-noise construction equipment. Since 1999, we have been working with the Government Supplies Department (GSD) to establish green product specifications for commonly used items, such as paper products. By the end of 2002, 37 product categories carried green specifications. The information is available on the EPD's web page (<http://www.epd.gov.hk>) so the private sector and outside organisations can refer to it when buying

their supplies. The GSD also requires suppliers to reduce packaging and, since 1997, it has arranged for a local oil recycler to collect waste oil from all government departments, recovering about 500 tonnes per year.

### ***Waste Partners***

Waste reduction is a focus for many partnerships. In addition to addressing the issue with the government and through the partnerships described above, we have set up working groups with public transport companies, the Airport Authority, hotels, hostels, recreation clubs, and universities, tertiary institutes, recycling trade, packaging trade as well as retailers. We are also working with hospitals and clinics on the special problem of clinical waste. A producer responsibility scheme has been set up with the mobile phone industry, which in April 2002 started taking back used batteries for recycling. Supermarkets also started taking back clean plastic bags during the year for recycling. Partnership on waste reduction has also been extended to the construction industry. A task force chaired by the Hong Kong Construction Association is set up to facilitate the use of recycled materials in construction works, which also has developed a waste management plan and guidelines for the construction operators. We also had partnered with a major private property management company in 2002 to promote waste reduction and recovery in 234 estates involving over 180,000 households. As a result, they had achieved their targets set for the year and reduced 10,300 tonnes and recovered 14,600 tonnes of waste.

### ***Partnerships with Users of EIAO***

Since 2000, EPD has set up four User Liaison Groups on the Environmental Impact Assessment Ordinance (EIAO) with government departments, consultants, utility companies, and contractors and private developers. They each meet regularly with us to discuss issues of environmental concern and jointly work on guidance materials. Up to end 2002, 12 User Liaison Group meetings have been held and 8 sets of Guidance Note have been issued.



**Stakeholders meet at the EIAO User Group Liaison Congress**

In 2002 the group members were brought together for the first time for a major stakeholders congress on environmental assessment. It was a unique and fruitful session for raising awareness and letting stakeholders hear each others' perspective.

In addition, EPD established in July 2002 the EIAO Support Section as a dedicated advisory unit to run an EIA Training and Capacity Building Programme for Government Works Departments to enhance their understanding of the EIA mechanism. DEP officiated the programme commencement in November 2002 inviting 180 participants, many at directorate and senior professional level. A total of 200 engineers and architects from all works departments later attended eight tailor-made two-day workshops between November 2002 and March 2003. Each with customized and specific foci, these interactive workshops provided a good forum to build partnership, to share EIA knowledge and experience, and to strengthen two-way dialogue. Materials and details from both the seminar and workshops were posted on our webpage (<http://www.epd.gov.hk/eia>) to enhance further communication. In light of good feedback and requests, we will continue to deliver more workshops in 2003 and promote the programme to private sector.

Since July 2002, the EIAO Support Section has operated an EIA Helpdesk Hotline (Phone No 2802 3111) answering enquiries over the EIA mechanism. Up to mid-March 2003, the EIA Helpdesk has been providing assistance to over 50 enquiries from different sectors of the community including government engineers, residents site staff, consultants, contractors, general public and etc.

### ***Consultation***

Formal consultation on environmental issues is conducted through the Advisory Council on the Environment and the Environmental Affairs Panel of the Legislative Council. In addition, we participate in District Council, industrial and business association meetings to explain new environmental initiatives and to seek their views. District Councils also work with the Environmental Campaign Committee on waste reduction and awareness-raising campaigns, as do green groups and community groups. We meet regularly with these groups to exchange views.

### ***Others***

We also work with the private sector on trial schemes, such as bus companies with whom we tested Ultra Low Sulphur Diesel fuel and the transport trades with whom we tried particulate removal devices. In 2002, we joined with the Hong Kong Society of Accountants to provide training in environmental management to its members.

### **Nationally**

The EPD maintains regular contacts with authorities on the Mainland to tackle cross-boundary environmental issues. We have signed a Memorandum of Understanding (MOU) with the Mainland State Environmental Protection Administration on the control of cross-boundary waste shipments and an MOU with the State Oceanic Administration (SOA). The latter provides for Hong Kong's participation in China's National Marine Environment Monitoring Network, which is undergoing restructuring. Hong Kong will join when that work is completed. In December 2002 we held a major conference for Hong Kong and Mainland officials on strategic environmental assessments.

The EPD also works with our counterparts in Guangdong on shared environmental issues. Through the Joint Working Group on Sustainable Development and Environmental Protection, which was launched in 1999, a study of air pollution was completed in 2002. It recommended emission reduction targets and a plan of action. The Joint Working Group has also set up a Pearl River Delta Water Quality Protection Special Panel. In 2002 a contractor was appointed to develop a computerised water quality model for the delta.

Hong Kong and Shenzhen are working on a joint study of water pollution in Mirs Bay, which will be completed in 2003. They also co-operated on environmental impact assessments of the Shenzhen Western Corridor, which was completed in 2002. While both Shenzhen and Hong Kong conducted their own separate environmental impact assessments to meet each side's requirement, the information was shared, so cumulative impacts could be addressed. Joint celebrations for World Environment Day, June 5, were organised during the year with our regional counterparts in Guangzhou, Shenzhen, Zhuhai, Macau, Dongguan and Zhongshan.

### **Internationally**

We signed a Memorandum of Understanding with the California Air Resources Board in 2002, to promote co-operation. The board has the most stringent air quality standards in the world. We also have agreements with Canada, Vienna and Australia to co-operate on environmental matters.

We organised the Better Air Quality Conference in 2002, which attracted more than 500 delegates from Asia, Europe and North America. This was the third such conference organised by the EPD. The previous two, in 1999 and 2000, focused on motor vehicle emissions, while the 2002 conference looked at a range of air issues, from climate change to monitoring.

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## Environmental Awareness and Education

The EPD aims to gain community support for a wide range of environmental initiatives. We do this by reaching out to the community in several ways. We give talks and workshops to various organisations. We organise environmental education and awareness projects for schools, community groups, District Councils, corporations, government departments, and others. We serve as advisors and adjudicators on community environmental programmes. And we advise private and public organisations on corporate environmental strategies and environmental awareness programmes. One of our biggest efforts concerns waste reduction and we have introduced several campaigns to promote waste separation and recycling among the general public.



Exhibition to promote waste recycling

**We aim to promote community awareness through environmental campaigns, publicity, education and action programmes, and public access to environmental information, with a view to harnessing the community's support for, and contribution to, achieving the desired environmental goals**

### Community Relations Unit

The Community Relations Unit (CRU) is the main co-ordinator of the EPD's community education programmes. In 2002 it organised more than 389 programmes, delivered 423 talks and worked with more than 2 500 organisations, including 12 District Councils. It also organised 114 guided tours of the EPD's Visitors Centre for over 2 800 local and overseas

visitors.

The CRU also serves as secretariat to the government-appointed Environmental Campaign Committee (ECC), which promotes and encourages community involvement in environmental protection.

## Campaigns



Waste Recycling Campaign in Housing Estate

The ECC's largest campaign is the Waste Recycling Campaign in Housing Estates, which has been operating since March 1998. The campaign has helped to introduce waste separation and recycling to public and private housing estates

all over Hong Kong. Waste paper, aluminium cans and plastic bottles are placed in colour-coded bins and collected regularly for recycling. By the end of 2002, 1 200 public and private housing estates participated in the campaign, up from 1 000 in early 2001.

Two other campaigns are held annually. The Hong Kong Environmental Protection Festival runs for several weeks in November and December. In 2002 the festival focused on reducing waste, supporting clean air programmes and helping to protect our water resources. More than 28 000 people attended the opening day on 3 November 2002. The ECC also organises celebrations for World Environment Day every June 5, which in 2002 focused on "Green Community, Green Living". The opening day on 2 June 2002 attracted more than 21 000 people. The event was co-ordinated for the third time with the Environmental Protection Bureaux of Guangzhou, Zhuhai, Shenzhen, Dongguan and Zhongshan and the Macau Environment Council.

## Schools

The Waste Separation and Recycling Scheme in Schools is similar to the Waste Recycling Campaign in Housing Estates, in that it promotes recycling of waste paper, aluminium cans and plastic bottles. The scheme began in 1999 and by the end of 2002, 1 194 primary and secondary schools had received colour-coded waste separation bins, funded mostly by the Hong Kong Jockey Club Charities Trust. The scheme was adapted for pre-schoolers in 2002. With sponsorship from the Zonta Club of the New Territories, pre-schools received smaller versions of the bins intended for demonstration and teaching about waste separation. By the end of the year, more than 680 pre-schools had ordered the bins.

Students and schools are also encouraged to participate in the Schools Environmental Award Scheme cum Student Environmental Protection Ambassador Scheme. By the end of 2002, 666 schools and 11 206 students were participating, up from 599 schools and 9 892 students in 2001. The schemes aim to cultivate a sense of responsibility towards the environment among students and schools. The mentor for the scheme is the Environmental Affairs Officer of the United Nations Environment Programme - Asia and the Pacific Region, Mr Mahesh Pradhan, who visited Hong Kong in March. Environmental Protection Ambassador Schemes have also been organised for Scouts, Girl Guides, Junior Police Call, Lion Clubs, Rotary Clubs, Zonta Clubs, the elderly and for housing estate residents and staff of property management companies.

Another avenue for promoting environmental protection in schools is the Green School Awards scheme. It was launched in 2000 to encourage school managers to introduce environmental management systems and involve the entire school community in green efforts. In 2002, 178 primary and secondary schools participated in the competition.

Schools and community groups are being offered direct assistance in organising green activities through our new Environmental Education and Information Counter, which opened in August 2002. The counter, located in Revenue Tower, loans out environmental display panels, games, leaflets, videos, CD-Roms and other environmental education materials for free.



**EPD's Environmental  
Education and  
Information Counter**

The ECC also joined forces during the year with the State Environmental Protection Administration of China to organise the Nation-wide Environmental Competition for youths in the Mainland. More than 600 000 mainland students participated in the programme and the winners attended an exchange programme in Hong Kong.

### **Other Community Activities**

- ▶ The CRU organised two major exhibitions in 2002. One celebrated 25 years of environmental protection in Hong Kong and featured 94 workshop sessions for students over three days in July. The second was the Clean Air Exhibition, which attracted 21 000 people to a one-day event in March.
- Environmental Resource Centres are multi-media centres that provide the public with easy access to environmental education. Two centres are located in Wanchai and Tsuen Wan. In 2001 the Mobile Environmental Resource Centre was launched. This was supplemented with a "Green Desk" in 2002, which is set up alongside the mobile centre so passersby can ask questions and get more information about environmental protection. The Green Desk is also brought along for visits under the Community Green Network Programme, which was also launched in 2002. EPD officers visit housing estates in the evening to give talks to residents and answer questions relating to environmental protection. They visited 82 estates during the year.
- The fourth annual Hong Kong Eco-Business Awards attracted 193 organisations in four categories: Green Office Award (Large Organisations), Green Office Award (Small and Medium Enterprises), Green Property Management Award (Private Housing) and Green Innovative Practice. The award was jointly organised by the ECC, Hong Kong General Chamber of Commerce, Chinese Chamber of Commerce and Hong Kong Productivity Council. It is designed to honour businesses in Hong Kong that have demonstrated a commitment to environmental

management. The intention in 2002 was to encourage more small and medium sized organisations to participate.

### Press Releases and Publications

We place much emphasis on making environmental information widely available to the general public. Press releases are issued regularly and we are increasingly making use of the Internet to disseminate information.

- Weekly press releases on water quality at gazetted bathing beaches are issued to the media. The press releases and reports on beach water quality are uploaded on the EPD website.
- Hourly Air Pollution Indexes have been issued since July 1999 via the EPD website and a telephone hotline. Daily API forecasts and hourly API reports are issued to the media.
- Statistics on environmental prosecutions brought by the EPD are released to the media on a monthly basis. A list of environmental impact assessments (EIAs) that are either in progress or about to start is released quarterly to the media. The EIA reports, and the Director of Environmental Protection's decisions on the reports, are placed on the EPD website.
- Monitoring data for rivers and streams and marine waters are published in separate annual reports, as are air and beach water monitoring data.

In addition, we produced 71 publications in 2002 ranging from publicity and training materials to guidelines explaining our new services and initiatives. Most publications and other information we release can be viewed on our website <http://www.epd.gov.hk/>.

In recognition of the important role the media plays in disseminating environmental messages, we organised media visits to a collection point for used mobile phone batteries and to the North West New Territories Refuse Transfer Station in 2002. This gave journalists a first-hand look at the EPD's work. We also handled 6 040 press enquiries, issued 206

press releases, organised nine press conferences and briefings, and arranged 99 press interviews.

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## Professional Development and Research

The EPD employs 1 203 professional and technical staff, making it the largest employer of environmental experts in the HKSAR. Our staff come from a wide variety of backgrounds, such as science, applied science, town planning and engineering, and many of them are active members of learned societies in their spheres of expertise. The EPD contributes to the development of the environmental management profession in Hong Kong and elsewhere, by organising conferences, seminars and staff exchanges, providing advice, collaborating with researchers, continuously training staff and writing for outside publications.

**We will ensure through appropriate training and professional development, that every member of our staff has the knowledge and competency to assume their environmental responsibilities and to participate constructively in environmental activities**

### The highlights of 2002 included:

- Mr. Mike Stokoe, our Deputy Director, leading a delegation of eight EPD colleagues to attend the First China International Conference and Exhibition on Solid Waste Treatment Technology and Equipment, held in Beijing.
- Co-organising a workshop with Environment Canada on "Waste Management" to exchange experience on waste management and contaminated land management. The workshop was also attended by a representative of the Macau SAR government.
- Organising two workshops on wastewater treatment technologies and water reuse to draw in international expertise to enhance EPD staff 's professional competency in these areas.
- Organising a seminar on air quality monitoring, which was attended by 40 people from 5 cities of the Pearl River Delta region

to share experiences on air quality monitoring work.

- Co-organising the "Better Air Quality in Asia and Pacific Rim Cities (BAQ) 2002". BAQ2002 was the largest regional event on air quality management in Asia in 2002. Over 600 senior policy makers and other stakeholders attended the event from 16-18 December at the Hong Kong Convention and Exhibition Centre to review the current status of air quality management in Asia and to formulate recommendations on how cities in Asia can improve their air quality.
- Co-organising with the Hong Kong Construction Association a conference titled Partnership for Green Construction - A New Era of Hong Kong Development, providing a platform for professionals in the industry to share their construction and environmental protection experience.
- Co-organising with the restaurant trade associations the "Environmental Exhibition & Conference for the Food and Restaurant Trade", which was attended by over 5 000 participants.
- Organising a Study Mission to Tokyo and Yokohama on Quality Management Towards Green Restaurant, with a delegation of some 30-members comprising senior professionals in the EPD and other government departments, local restaurant trade associations, academics, public utilities companies and consultants.
- Organising two in-house technical seminars to enhance professional development in the field of environmental noise, with more than 50 professional officers and senior technical officers attending each session to share technical information and experience gathered from work assignments.
- Hosting the EIAO User Group Liaison Congress with more than 160 participants from government departments, consultants, contractors, private developers, public corporations, green groups, academics, and the Advisory Council on the Environment members.

- Setting up the EIA Support Unit to provide assistance to 8 works departments. A seminar with over 180 participants and subsequent tailor-made workshops for the departments have been held.
- Mr. Elvis Au, Assistant Director (Environmental Assessment and Noise), as the President of the International Association of Impact Assessment, chairing an international conference on impact assessment in the Hague, at which more than 600 people from more than 70 countries participated.
- Mr. Elvis Au, Assistant Director (Environmental Assessment and Noise), attending the World Summit on Sustainable Development held in Johannesburg, South Africa. In his capacity as the President of the International Association of Impact Assessment, he contributed to an international submission on impact assessment.
- Contributing to an international conference in Hong Kong on "Reshaping Environmental Assessment Tools for Sustainability". The conference attracted delegates from the Mainland, Europe, North America and Hong Kong. Among the EPD's contributions to the conference were the submission of 13 papers and a technical visit to our waste facilities for the delegates.
- Conducting a workshop on environmental impact assessment in Hong Kong under the Memorandum of Understanding between the EPD and Environment Canada.
- Introducing Hong Kong's EIA system to the Director-General of Supervision & Management Department of the Mainland's State Environmental Protection Administration during his visit to the EPD.
- Producing papers which were published in professional journals or presented at conferences or workshops. The papers were written by EPD staff on various environmental issues.
- Continuing to serve on the fund-vetting committees of the Innovation and Technology Fund and the Environment and

Conservation Fund, which help finance education and research projects in the environmental field.

- Participating in a new staff exchange arrangement agreed by the Hong Kong and Shanghai governments in July. The EPD was among the first batch of Hong Kong government departments to do so.
- Providing training to our professional staff for an average of 7 days each in 2002. Our technical staff each recorded an average of 6.3 days of training in 2002.

### **Environmental Graduate Training Scheme**

More than 240 professional engineers in various fields now work in the EPD. But we are conscious of the need to train future generations of professional environmental engineers. The EPD has been certified for the Hong Kong Institute of Engineers' Scheme "A" Training since 1997. Eighteen environmental engineering graduates have undertaken on-the-job training with us so far. They were provided with opportunities to acquire project management skills, enforcement experience and environmental impact assessment knowledge. Nine of the graduates completed their training in 2002.

### **Workshop for senior management**

To further enhance communication across the whole department and to share expertise amongst senior managers, a series of experience-sharing workshops were arranged for our senior staff.

The first workshop, on sharing knowledge and information through EPD's intranet, was held in September 2002. It was attended by 134 senior staff, ranking from Senior Environmental Protection Officer to the Director of Environmental Protection.



Senior staff discussed how to improve communications at a special workshop held in September 2002

We will continue to invest in staff development in the year 2003.

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## Corporate Environmental Management

### Environmental Management System

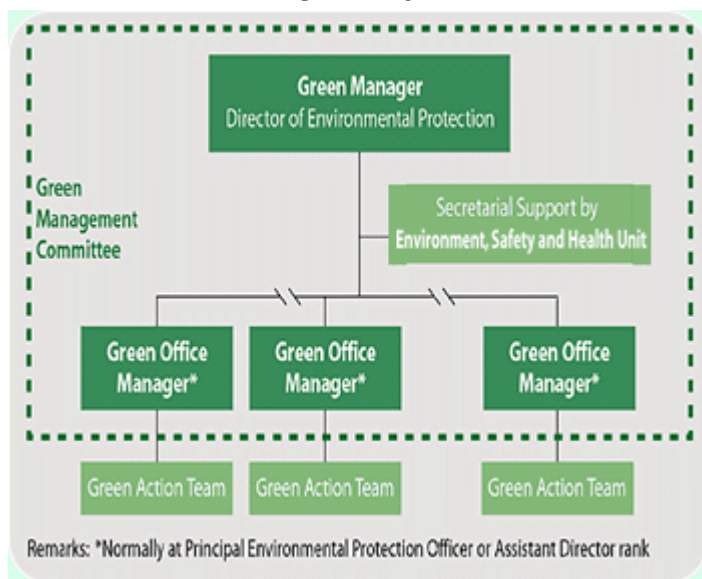
Our environmental management system (EMS) aims to fulfill internally the goals described in our Environmental Policy on compliance, pollution prevention, minimisation of consumption and other issues. The Director of the EPD is our green manager.

**We will ensure that all services and programmes offered by the EPD, as well as our own internal operations, are developed and conducted in an environmentally responsible manner**

**We will implement ISO 14001 environmental management systems to improve continually the environmental performance of our major facilities**

**We will review regularly and seek continual improvement in our Environmental Policy in order to ensure it is adjusted to reflect changing internal and external factors**

Green Management System in EPD



In 2002, our senior management endorsed proposals to improve our environmental management system (EMS). This followed a gap analysis of our EMS in 2001, which used ISO 14001 standards as the benchmark. The proposals covered three areas. First was a merger of the EMS with the existing Safety Management System. Second was the merger of the Green Management Committee and the Departmental Safety and Health Committee, into the new Departmental Environment, Safety and Health Committee (DESHC). The third proposal was to implement a programme for the systematic assessment and management of environmental aspects of our operations.

Meetings of the DESHC are attended by representatives from our six divisions, as well as staff representatives. The committee is supported by the Environment, Safety and Health Unit (ESHU) - formerly the Safety and Health Unit. The ESHU is responsible for developing, implementing and reviewing our environmental management system and practices department-wide. Green practices are carried out by individual groups under their respective divisions. Environmental, safety and health matters are discussed at the DESHC.

All of the EPD's offices are required to complete regular self-audits of their green management practices. In 2002 some 37 self-audits were completed by the groups who used checksheets prepared by the ESHU. The ESHU, in turn, audited 12 groups. The audits revealed that staff were in general very aware of green office housekeeping. They implemented such things as self-initiated paper and electricity saving practices, and they set their own performance targets. They also set up attractive green corners to post information on green measures and on their green housekeeping achievements.

To improve our EMS and make it more effective, we are establishing a system to identify, assess and record the environmental impacts of our internal operations and daily activities, and to manage these impacts.

### **ISO 14001 Certification**

We obtained certification of our Waste Facilities Business Unit (WFBU) in 2000. We see certification as an opportunity to continue improving our environmental performance and to set a good example for other

government departments and the private sector.

The WFBU also requires contractors of new waste management facilities to obtain ISO 14001 EMS certification as part of contractual arrangements.

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## Minimising the Impacts of Our Operations

### Waste Facilities

Our major impact on the environment comes from the operation of waste facilities. The EPD oversees 29 waste facilities and we require our contractors to operate them to a high environmental standard, through both contractual requirements and statutory controls. The contractors must comply with all applicable environmental ordinances, regulations and emission requirements. Air, noise and wastewater emissions from these facilities must be monitored and this is supervised closely by EPD staff on site. Since 1989, we have included a provision in waste facilities contracts to deduct payment for non-compliance with environmental controls.

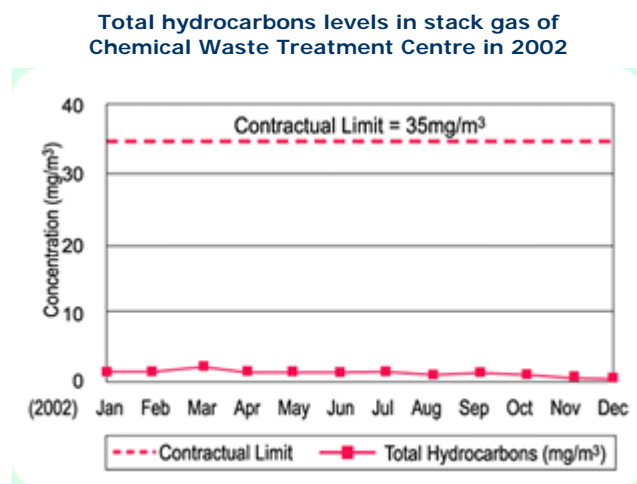
In 2000, our Waste Facilities Business Unit received ISO 14001 certification for its environmental management system (EMS), which has been implemented to develop and promote a sustainable waste management strategy and to plan and provide for waste management facilities in Hong Kong. We have also managed to influence the contractors of waste management facilities to develop and implement similar EMSs to further enhance the environmental performance of these facilities. Since the demonstration of EPD's certification in 2000, similar EMSs were implemented and ISO14001 certificates were obtained in all 12 existing restored landfills, the Northwest New Territories refuse transfer station and the Sha Ling Composting Plant. In 2003, it is planned to further certify the EMS implemented in Shatin refuse transfer station, seven transfer facilities in outlying islands, and the Northeast New Territories and West New Territories landfills.

**We aim to avoid, reduce and control pollution arising from our day-to-day working practices.**

**We will require our contractors to adopt and implement sound environmental management systems and pollution control measures**

## Compliance Rate

In 2002, there were no environmental prosecutions taken against any of our waste management contractors. They also achieved 99.975% compliance with contractual environmental requirements, similar to 2001 and 2000. Each non-compliance was thoroughly investigated and remedial action instigated.



## Complaints

In 2002 there were no complaints received against the Chemical Waste Treatment Centre. Fourteen complaints were received against other waste facilities, concerning odour, noise, dust and fly nuisance. All complaints were dealt with promptly.

## Pollution Control Measures

### Landfills

All new landfills have gas extraction systems installed from the start, and old landfills are being retrofitted. The boundaries of the landfills

**We will provide leadership by complying with not only the letter, but also the spirit of all applicable environmental legislation, standards and regulations, as well as our**

are monitored to ensure landfill gas does not escape. In 2002, an average 450 000 m<sup>3</sup> of landfill gas was collected daily, 53% of which is used to meet nearly all on-site energy consumption. To date, electricity generators with a total capacity of 6.4MW have been installed at landfills.

A construction waste recycling plant has been operating on the Southeast New Territories (SENT) landfill since 1995, to sort and recycle any construction waste delivered for beneficial reuse and to reduce the amount of waste taking up landfill space. At present the plant is recycling about 22 500 tonnes of construction waste monthly, representing 10% of the total waste intake at the landfill.

### ***Refuse Transfer Stations***

Refuse Transfer Stations (RTSs) help to reduce the environmental impact of transporting waste to landfills. Small refuse collection vehicles (RCVs) deliver waste to the RTSs where it is transferred into bulk waste containers that are taken to landfills either by land or by sea. Each container can accommodate the equivalent of three to five RCV-loads. In 2002 some 1 200 RCV trips to landfills were eliminated each day. Bulk waste transfer, by sea in particular, has significantly reduced the traffic, noise and air emission problems that might otherwise be caused by directly hauling waste to landfills.

There are eight RTSs in Hong Kong. Most of the RTSs are located in built-up areas. Ventilation systems and odour scrubbers are installed to remove offensive odour and dust from the exhaust air. The Island West RTS is located within a man-made cavern under Mount Davis which not only reduces its visual impact, but also takes up less land space.

### ***Chemical Waste Treatment Centre***

Stack gas from the incineration system is scrubbed and a spray dry absorber, activated carbon injection and fabric filter baghouses are used to remove pollutants prior to release into the atmosphere. The gas is monitored continuously to ensure complete combustion and

**internal guidelines and procedures. We will endeavour to surpass the applicable environmental legislation, standards and regulations, whenever possible**

removal of air pollutants. In the event of any problem, waste feed to the incinerator will be cut off automatically. The ambient air around the CWTC is monitored twice yearly and measurement of dioxins is carried out monthly. So far, the levels of pollutants measured in the ambient air have fully met the Hong Kong Air Quality Objectives. All process residues, including incineration ash, are chemically treated and confirmed by analysis to be stable before being sent to the SENT landfill for final disposal.

Environmentally friendly practices are encouraged by allowing the contractor to keep revenue generated from the sale of materials recovered from waste. The oil recovered from oil/water waste is used by ocean-going vessels as recovered fuel oil after blending. The copper oxide recovered from waste etchant generated by the electronics industry is sent to overseas smelters to recover the copper. In 2002, 8 400 tonnes of oil and 420 tonnes of copper oxide were recovered by the Centre.

### ***Laboratories***

Our laboratories (air, water sciences and microbiological) are operated in a manner that minimises the impact on the environment and in compliance with the legal requirements and statutory licence conditions. In 2002, routine monitoring of the effluent discharge from our laboratories indicated full compliance. Annual monitoring of the emission of acid fumes from fume cupboards also indicated full compliance.

### ***Field Work***

To minimise the environmental impacts during our investigation work, only non-toxic dye is used to trace the source of pollution. Field samples and used chemicals were sent to the Chemical Waste Laboratory for appropriate action. Safety guidelines are issued to all field staff who are trained in the handling of hazardous materials.

### **Emergency Response at EPD Facilities**

**We have an emergency response system for handling**

The EPD has internal emergency response plans for our own operations, in particular our waste facilities and laboratories. For landfills, the plans cover predictable events such as the unavailability of certain landfills or refuse transfer stations due to power failure, as well as road blockages arising from traffic accidents, congestion, chemical waste spills, etc.

**environmental incidents, and are prepared to respond quickly to minimise the damage to the environment**

The EPD and waste facilities contractors jointly arranged one combined emergency testing in September 2002 for most of the strategic waste management facilities, including RTSs, operating and closed landfills. The testing covered scenarios involving landfill and RTS blockades, landfill slope failure, and landfill gas leakage. In addition, the capabilities of the facilities to deal with emergency situations were fully tested and proven in actual emergency cases, such as the blockage of an RTS due to traffic problems in western Kowloon and the sudden demand to dispose of large amounts of animal waste in North District.

For the CWTC, four emergency drills were carried out in 2002. The first drill was for an accident in the laboratory, the second drill assumed a fire hazard (Fire Services Department was involved), the third drill was for a MARPOL waste fire (a marine-based drill) and the fourth drill assumed the overturning of a waste collection vehicle. The drills were carried out by the contractor and witnessed by EPD staff. It is EPD's requirement that the CWTC contractor carries out at least one drill on marine incidents every year.

For our laboratories, no incidents were reported in 2002.

#### **Measures adopted to prevent pollution from EPD's laboratories:**

##### **Legal measures:**

All necessary licences and permits under the law (e.g. Water Pollution Control Ordinance (WPCO), Waste Disposal Ordinance (WDO), etc.) are obtained and the stipulated conditions are strictly adhered to.

##### **Air pollution:**

Emissions from fume cupboards and safety cabinets are scrubbed or filtered as required to remove pollutants before release into the atmosphere. Laboratories are installed with exhaust hoods which operate round the clock to dilute and extract any emissions of calibration gases (such as carbon monoxide, sulphur dioxide and nitrogen oxides) during equipment calibration to roof level for discharge.

**Water pollution:**

Our laboratory sinks are fitted with buffer tanks to prevent the accidental discharge of unsuitable substances into the sewers. A sink used for handling asbestos is also fitted with a filter to remove the asbestos from the waste water.

**Monitoring:**

Emissions from fume cupboards and discharges from sinks are monitored regularly to ensure compliance with the required standards.

**Hazardous waste:**

Chemical waste is properly treated and disposed of by the CWTC contractor. Biological waste is disinfected and disposed of in accordance with World Health Organisation guidelines. A licensed collector is engaged to deliver asbestos samples from the air laboratory to the SENT landfill for disposal.

**Emergencies:**

Emergency spill kits are provided in all the laboratories and our staff are trained to deal with accidental spills. The general procedures for handling chemical spillage/leakage are documented in the laboratory environmental and safety manuals.

**Audits:**

Environmental audits of the laboratories are carried out regularly by laboratory staff and supplemented with external audits by the EPD's Environment, Safety

and Health Unit.

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## Greener Office

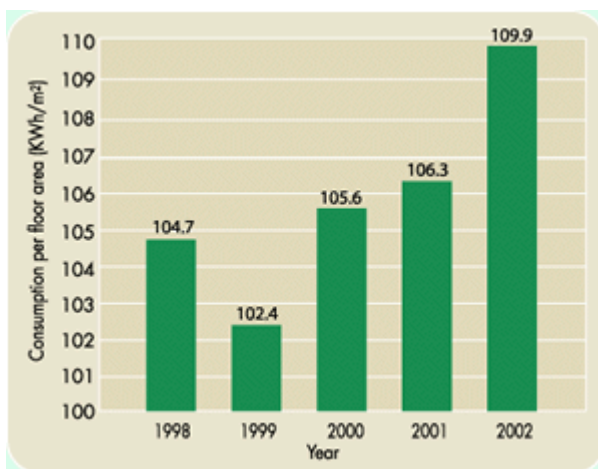
### Experimental Projects

The Energy Efficiency Office of the Electrical and Mechanical Services Department (EMSD) installed occupancy sensors with dimmer controls in our headquarters on the 28/F of Southorn Centre, Wan Chai in March 2002. All offices, corridors, lavatories and common areas on this floor have been fitted with the sensors which deactivate office lights automatically when an area is not in use. Later in mid-2002, EMSD explored the feasibility of replacing the existing inlet guide vanes by variable speed drive (VSD) in the air-handling units of all EPD floors at Southorn Centre. To ensure an objective assessment, it was finally agreed that the VSD will run parallel with the existing system for six months from April to September to compare the performance in energy efficiency. A separate meter has been installed, together with the variable speed drive, for individual assessment.

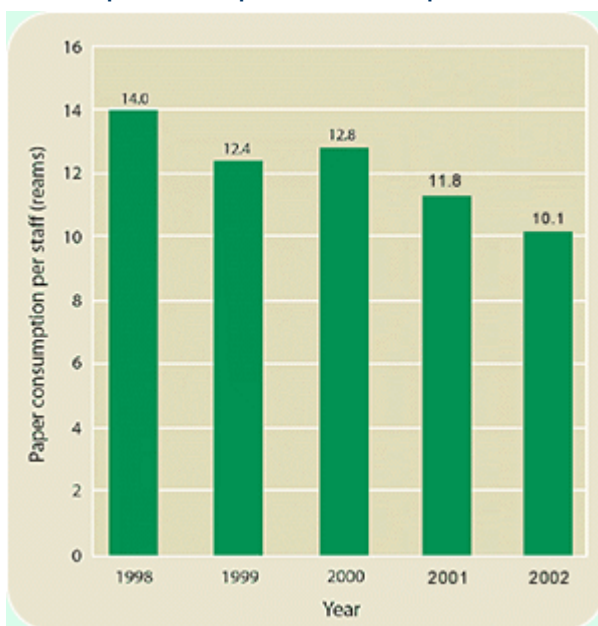
**We aim to exercise the principle of Reduce, Reuse and Recycle in our consumption of materials and to make efficient use of natural resources and energy in all our operations**

**We will avoid, reduce and control environmental pollution arising from our day-to-day working practices**

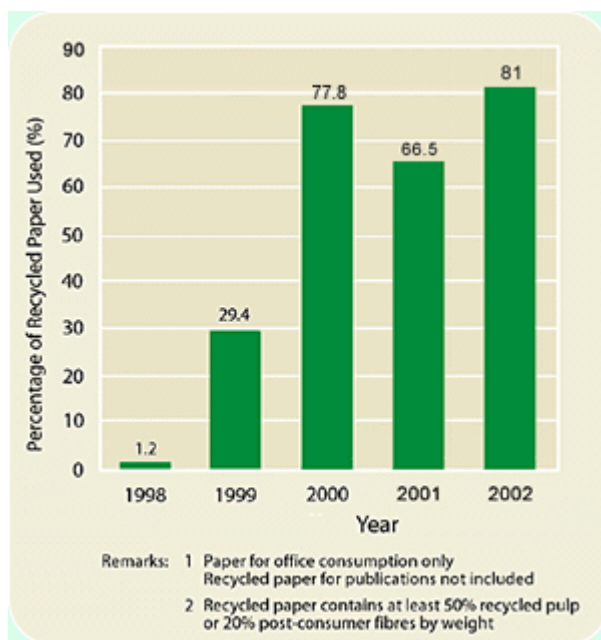
**Electricity consumption for office operations**



Paper consumption for office operations



Use of recycled paper in the office



Added to these initiatives was a research project launched by the City University to evaluate the optical performance of a solar control film coating known as V-Kool. Field measurements of solar heat gain and daylight illumination in two air-conditioned offices (Room 2817 and Room 2803 on the 28/F of Southorn Centre) were conducted to identify the impacts of solar film coating on cooling energy requirements. Through such experimental projects, we hope more opportunities can be explored for achieving energy conservation in an office setting.

#### **Working towards a Paper-less Office - Electronic Workflow**

Riding on the success of the Administrative Daily Bulletin, in which circulars and general notices are issued to most staff by e-mail rather than by conventional hard-copy, more electronic workflow applications were put into place in 2002. These applications enable staff to reserve common meeting rooms and make procurements through our intranet in an efficient and paper-less manner. In 2002, the department used 15 736

reams of photocopy paper, down from 16 300 reams in 2001.

A slight increase in electricity consumption was seen in 2002. This was mainly due to an increase in workloads and longer operating hours for the air-conditioning equipment for our new computer servers.

### **Greener Transport**

Motor vehicle transport is by its nature polluting. To reduce the impacts, we have introduced measures to control emissions and lower fuel consumption. All of our vehicles - mainly medium vans, saloons, and motorcycles - run on petrol or liquefied petroleum gas, rather than the more polluting diesel fuel. We have also initiated a non-idling policy for our vehicles in an effort to reduce air pollution.

Since 2001, the EPD's Administration Group has implemented an internal Vehicle Booking Information System to enable greater efficiency in organising car pools among all of our Groups and offices. All EPD offices are required to combine trips where possible and thereby maximise the use of departmental vehicles. The system logs the mileage and number of passengers for each car trip. This data will be used as a basis for devising a green transport action plan in 2003. As a result of these measures, we have reduced the number of government vehicles from a total of 61 to 56, by returning 4 motorcycles and 1 van to the Government Land Transport Agency.

### **Suppliers and Service Providers**

For out-sourced services, we require our service providers to adopt green measures as much as possible. For example, where hard copies are unavoidable, consultants are required to submit reports that are environmentally friendly, i.e. double-sided printing, simple binding, no excessive use of plastics, etc. The same goes for the production of the education packs used by our Community Relations Unit. Publicity souvenirs such as clips and rulers must be manufactured from recycled plastics. The contractor for our mobile Environmental Resource Centre was required to install environmentally friendly features such as solar fans and energy-saving bulbs. The vehicle is also powered by less polluting liquefied petroleum gas.

**We require our contractors to adopt and implement sound environmental management systems and pollution control measures**

To exert further influence on our contractors and suppliers, we began requiring them in 2000 to provide information on their environmental performance, such as whether they have obtained ISO 14001 certification, whether they avoid the use of hazardous materials in the manufacturing process and whether they will take back spent products such as batteries.

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## Staff Awareness, Training and Participation

The EPD provides training opportunities for all of its staff. Formal environmental management training was introduced for existing staff in 1997, and all new staff are also briefed on the subject. In 2002, 20 Group Environmental Representatives, who are responsible for green management in their own groups, attended an in-house seminar on Environmental Management Systems and six other staff attended courses related to environmental management organised by external organisation. Another 141 staff attended four in-house continuous professional development training programmes organised by the Human Resources Development Unit. The training consisted of talks on environmental subjects by experienced staff members and visits to EPD's facilities and the Stonecutters Island Sewage Treatment Works.

Office managers attended a seminar on Environmental Management Systems for all government departments, which was jointly organised by the EPD and the Civil Service Training and Development Institute in December 2002.

To promote environmental awareness among the family members of our staff and help them to understand more about EPD's operations, the Staff Recreation and Social Committee organised visits to Mai Po, Cape D'Aguilar Marine Reserve and Dolphin Watch in 2002 for staff and their families.

Our colleagues are encouraged to contribute green ideas through a staff suggestion scheme. Winning proposals receive cash prizes and/or departmental commendations, resulting in some innovative ideas being adopted. In 2002, green ideas from our colleagues were received and there were two award-winning suggestions, namely, replacing security sealing tape with a security sealing bag and placing a banner on the EPD

**We will ensure through appropriate training and professional development, that every member of our staff has the knowledge and competency to assume their environmental responsibilities and to participate constructively in environmental activities**

**We will ensure that all our staff are aware of our Environmental Policy, that they will be able to provide detailed information about our Policy and our initiatives to our stakeholders on their particular areas of concern**

website to promote the use of e-cards.

To promote waste recycling among EPD staff, mobile phone batteries have been collected from staff for recovering since May 2002. A trial of recovering plastic bags in EPD was also launched in August 2002.

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## Progress on Year 2002 Targets

### Major Initiatives under EPD's programme:

Reporting Area	Targets for 2002	Progress in 2002
Contribution to Strategic Decision-making	<ul style="list-style-type: none"> <li>To facilitate public access to strategic environmental assessment (SEA) reports through the Internet by 2002.</li> <li>To continue promoting the application of SEAs to major government policies and proposals which might have major environmental implications. Examples on SEAs will be distributed to project proponents for promoting strategic environmental assessments.</li> <li>To liaise closely with the Sustainable Development Unit on the need to further update the various baseline data for the relevant environmental indicators.</li> </ul>	<ul style="list-style-type: none"> <li>Uploaded three SEA reports onto EPD's Website for easy reference by the public.</li> <li>Cleared over 190 Executive Council and Public Works Subcommittee submissions and prepared a folder of SEA examples which was distributed together with CD ROM version to project proponents.</li> <li>Liaised closely with the Sustainable Development Unit on this matter.</li> </ul>
Prevention and Mitigation through Environmental Impact	<ul style="list-style-type: none"> <li>To launch a system to allow public access to environmental monitoring and audit information of</li> </ul>	<ul style="list-style-type: none"> <li>Launched the system on the EIAO Website in February 2002.</li> </ul>

Assessment	major development projects through the Internet in February 2002.	
Better Air Quality	<ul style="list-style-type: none"> <li>● To commence the large-scale retrofit programme for pre-Euro standard diesel vehicles over 4 tonnes.</li> <li>● To finalise the proposal to introduce LPG or electric light buses and phase out diesel light buses, in light of feedback from consultations with the light bus trade and LegCo.</li> <li>● To put forward for LegCo's approval a proposal making the installation of a particulate removal device a requirement for the licence renewal of pre-Euro standard diesel vehicles up to 4 tonnes.</li> <li>● To continue enforcing the perchloroethylene regulation.</li> <li>● To launch the voluntary Indoor Air Quality certification scheme.</li> <li>● To work with Guangdong on plans and measures to improve air quality in the Pearl River Delta Region.</li> </ul>	<ul style="list-style-type: none"> <li>● Commenced the programme in December 2002.</li> <li>● Started to provide incentives to owners of diesel light buses in August 2002 to encourage them to replace their vehicles with LPG/electric ones.</li> <li>● Submitted the legislative proposal for consideration by the policy bureau in 2002, aiming to seek approval from LegCo in 2003.</li> <li>● Continued updating the list of approved dry-cleaning machines for reference by the trade.</li> <li>● Conducted briefings for building owners/ management about the certification scheme to encourage them to participate when the scheme is launched.</li> <li>● Formed a special panel on Pearl River Delta Air Quality Management and Monitoring in September 2002 under the Hong Kong – Guangdong Joint Working Group on Sustainable Development and Environmental</li> </ul>

Quieter Environment	<ul style="list-style-type: none"> <li>● To review 230 planning schemes and strategic proposals to minimise noise problems for about 68 000 people.</li> <li>● To propose an amendment to the vehicle noise control regulation.</li> <li>● To commence detail design work for retrofitting barriers for Phases 1 and 2 of the retrofitting programme and to commence resurfacing work at identified road sections.</li> <li>● To launch a programme to promote better community</li> </ul>	<p>Protection. The special panel has agreed on a list of upcoming tasks including:</p> <ul style="list-style-type: none"> <li>○ Drawing up a regional air quality management plan;</li> <li>○ Establishing and operating a regional air quality monitoring network consisting of a total of 16 stations;</li> <li>○ Updating the regional emission inventory;</li> <li>○ Upgrading the scientific and technological capabilities of staff in dealing with air quality issues in the region through more technical exchanges and training.</li> </ul> <ul style="list-style-type: none"> <li>● Reviewed 198 planning schemes and strategic proposals to minimise noise problems for about 46 000 people.</li> <li>● Completed. The Legislative Council passed the amendment in May 2002.</li> <li>● Commenced the investigation studies and design consultancies for retrofitting barriers for Phases 1 and 2 of the retrofitting programme, and started investigation studies/design work of barriers on 5 roads. Started resurfacing work on the first batch of 24 roads.</li> <li>● Completed. Conducted two briefing sessions for over 150</li> </ul>
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Better Water Quality	<p>understanding of environmental noise.</p>	<p>school teachers, and introduced a new environmental noise education package.</p>
	<ul style="list-style-type: none"> <li>● To commence a study into the effects of environmental noise on people and their health.</li> <li>● To carry out the second phase of the monitoring method validation exercise in connection with the National Marine Environmental Monitoring Network.</li> <li>● To complete fieldwork for the studies recommended by the International Review Panel on the Harbour Area Treatment Scheme, and consult the scientific community on appropriate assessment criteria.</li> <li>● To table the draft new effluent standards in the Legislative Council and subsequently issue the new Technical Memorandum on Effluent Standards.</li> <li>● To finalise the scope of amendments to the Water Pollution Control Ordinance to improve licence application procedures and to enhance enforcement effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>● The study will be carried out in phases. A study brief for the first-phase study on noise levels in Hong Kong has been developed.</li> <li>● Completed.</li> <li>● Completed.</li> <li>● New draft standards could not be introduced into LegCo because of opposition from some sectors.</li> <li>● Submitted a revised proposal to the policy bureau in September 2002 for consideration, which was amended in light of public comments.</li> </ul>
Environmentally-Sound Waste	<ul style="list-style-type: none"> <li>● To develop proposals to tighten up controls on illegal</li> </ul>	<ul style="list-style-type: none"> <li>● Submitted the proposals to the policy bureau for consideration.</li> </ul>

## Management and Facilities

disposal of waste and to enhance waste reduction initiatives.

- To implement on-going and new initiatives under the Waste Reduction Framework Plan. To develop new initiatives including legislative proposals to enhance waste reduction and recovery.
- To complete the study on expanding existing landfills and on potential sites for new waste disposal facilities.
- To prepare a draft Waste Management Plan to identify the long-term waste management needs of Hong Kong.
- To develop the implementation arrangements of the landfill charging scheme and propose the associated legislative framework.

Commissioned a Waste Management Study to examine further waste reduction and management options for several priority waste types.

- Submitted product responsibility proposals to the policy bureau for consideration. Commissioned a Waste Management Study to examine further waste reduction and management options for several priority waste types (tyres, electrical and electronic equipment, batteries, beverage containers).
- Completed.
- Conducted studies to review future waste facility capacities, practices of other countries and legislation and policy drivers. The current task is to devise a mixture of management options that will bring about an integrated waste management system for Hong Kong.
- Discussed the charging proposal at the Legislative Council Environmental Affairs Panel meetings in February, May and June 2002. At the last meeting, 16 organisations were invited to express their views. With the exception of the three associations representing the waste haulers, all other 13

- To complete an expression of interest exercise for recycling waste tyres and glass.
  - To commission a pilot facility for recycling electrical and electronic appliances.
  - To complete an expression of interest exercise in 2002 for the development of integrated waste management facilities for municipal solid waste.
  - To complete a preliminary study for the development and management of a recovery park.
  - To award a contract under a land licence arrangement for composting food waste at Ngau Tam Mei Composting Plant.
- organisations were supportive of landfill charging.
- Completed the expression of interest exercise for waste glass and received four proposals from both local and overseas companies. Received 16 proposals for recycling waste tyres from local recyclers, research institutes and overseas companies.
  - Commissioned the pilot facility at North-West New Territories Refuse Transfer Station.
  - Invited expression of interest (EOI) on 26 April 2002, and received a total of 59 submissions by closing of submission on 26 July 2002. Formed an Advisory Group to assist the government in assessing the EOI submissions in September 2002. The EOI submissions are now being assessed with a view to identifying waste management technologies that are potentially suitable for Hong Kong.
  - Completed.
  - The tender was cancelled, as all tender returns were non-conforming. Other possible alternative uses of the site are now under consideration.

Effective  
Enforcement and  
Emergency  
Response

- To commence construction of a soccer-cum-baseball grass pitch at the former Sai Tso Wan Landfill.
  - To commission the Ma Wan Refuse Transfer Facility.
  - To develop a centralized enforcement information archive as a reference tool for enforcement staff and senior management to use in enhancing enforcement actions.
  - To collaborate with other departments on the implementation of the Integrated Call Centre, which streamlines the handling of pollution complaints and enquiries on environmental pollution issues.
  - To implement a pilot GIS-based pollution complaint database system and review its effectiveness in complaint investigation.
  - To ensure each local control office reviews its main control/enforcement priorities taking into account its
- Commenced construction work on 12 March 2003, under a contract awarded on 12 February 2003 for developing a multi-purpose grass pitch for football and baseball, car park and ancillary facilities.
  - Commissioning was rescheduled to early 2003 to match the housing development on Ma Wan.
  - Completed.
  - Established an in-house Customer Service Centre (CSC) to provide a single-number service to the public for lodging pollution complaints and enquiries. The Centre, which is equipped with a GIS-based Customer Relationship Management system and an on-screen knowledge database system, can provide instant responses to complaints and enquiries.
  - Completed. The review indicated that the system is of great value to the CSC operation.
  - Prepared a work plan for reviewing the progress of enforcement work done in the year and for setting new targets

## Building Partnerships

specific local activities and conditions. Specific intensive enforcement activities will be organised on an as-needed basis.

for the coming year in light of specific local conditions.

- To develop a "Self-Learning / Train-the-Trainer" training package to help construction workers observe and meet environmental law requirements.
  - To further develop the structured partnership programme with the Hong Kong Construction Association aimed at helping the industry to adopt environmentally friendly measures.
  - To continue developing the partnership programme with the property management sector by assisting them in adopting good environmental practices and providing a clean and healthy living environment for the community.
  - To enhance the partnership programme with the vehicle repair trade and promote the adoption of environmentally friendly practices and pollution control technologies by the trade.
- Produced a Train-the-Trainer CD ROM package for construction workers on meeting environmental law requirements.
  - Co-organized major conferences and exhibitions with the Hong Kong Construction Association, and the restaurant trade associations to promote environmental awareness and formalise collaborative efforts.
  - Formed a liaison group with the Hong Kong Association of Property Management Companies to serve as a discussion forum for environmental issues. Organised a study mission to Japan to observe green practices in restaurants there and exchange experiences.
  - Established a formal partnership with the Environmental Vehicle Repair Association which further strengthened collaboration with the trade. Developed an Organic Vapor Absorption Unit together with detailed technical specifications for reference by the trade.

### Environmental Awareness and Education

- To implement Phase VI of the Waste Recycling Campaign in Housing Estates for 2002-2003 to allow 300 additional housing estates to participate.
- To invite 660 schools and over 10 700 students to join the Student Environmental Protection Ambassador Scheme in 2002-2003.
- To conduct 180 training workshops to train 3 600 stakeholders to be green leaders in 2002-2003.
- To conduct seven environmental education training workshops for 170 teachers in 2002-2003.
- To extend the Waste Separation and Recycling Scheme in Schools to allow 200 additional schools to participate.
- To arrange 110 community visits by the Mobile Environmental Resource Centre in 2002-2003.
- Implemented. A total of 1 218 public and private housing estates had participated the Waste Recycling Campaign in Housing Estates by the end of 2002.
- 666 schools and over 11 200 students joined the scheme by the end of 2002.
- 246 training workshops were conducted to train 6 131 stakeholders to be green leaders in 2002.
- Six environmental education training workshops were conducted for 179 teachers by the end of 2002. Also, an environmental awareness training programme for civil servants was launched in December 2002.
- A total of 1 196 schools have joined the Waste Separation and Recycling Scheme in Schools. Also, the Waste Separation Scheme for Pre-schools was launched in December 2002, with over 680 pre-schools provided with waste separating bin demonstration models to use in teaching.
- A total of 150 community visits by the Mobile Environmental Resource Centre were arranged in 2002. Also, the Green Desk community outreach programme

was launched in mid 2002, and 99 Green Desk sessions had been set up by the end of 2002.

### Initiatives to Strengthen the Environmental Performance of Our Internal Operations:

Reporting areas	Target for 2002	Progress in 2002
Corporate Environmental Management	<ul style="list-style-type: none"> <li>To review the environmental aspects of EPD's internal activities.</li> <li>To implement recommendations from the 2001 gap analysis of our Environmental Management System (EMS) and ISO 14001 Standard.</li> </ul>	<ul style="list-style-type: none"> <li>Ongoing. Aim to complete the review in 2003.</li> <li>Merger of EMS and Safety &amp; Health Management System. Merger of Green Management Committee and Departmental Safety &amp; Health Committee to form Departmental Environment, Safety &amp; Health Committee.</li> </ul>
Minimising the Impacts of Our Operations	<ul style="list-style-type: none"> <li>To continue the close supervision of our waste facilities contractors aiming for full compliance with both the legal and contractual environmental requirements.</li> <li>To achieve full compliance with the legal and departmental environmental requirements in our laboratories and field operations.</li> </ul>	<ul style="list-style-type: none"> <li>Achieved full compliance with legal requirements and 99.975 % compliance with contractual environmental requirements.</li> <li>Achieved full compliance.</li> </ul>
Greener Office	<ul style="list-style-type: none"> <li>To implement further energy saving plans for the lighting and air conditioning systems in our Southorn Centre offices.</li> </ul>	<ul style="list-style-type: none"> <li>Occupancy sensors with dimmable controls for lighting were installed in common areas of 28th Floor, Southorn Centre. In addition, variable speed drives were installed</li> </ul>

#### Staff Awareness, Training and Participation

- To devise an action plan to provide a greener transport service for our operations, and promote greater use of efficient and environmentally-friendly means of transport.
  - To explore further energy and paper saving measures for our office operations.
  - To organize more training opportunities for our staff.
  - To promote staff participation and contributions to complement government-wide waste reduction initiatives.
- for the air-conditioning system in all of EPD's Southern Centre offices.
  - Only less polluting vehicles running on petrol or LPG are in use. A car pool system to combine trips made by officers has helped us to reduce our vehicle requirements by one van and four motorcycles.
  - Total paper consumption decreased from 15 736 in 2001 to 15 555 reams as a result of wider application of electronic workflow in the office. Total energy consumption, however, increased slightly due to increased number of computer servers, increased workload of the department and longer working hours.
  - Over 26 staff attended seminars on EMS and 141 staff attended in-house continuous professional development programmes.
  - All EPD offices have set up green corners to raise awareness and to recycle paper, plastics and aluminum cans. In addition, we launched the collection of mobile phone batteries and plastic bags for recycling in May and August respectively.

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## Targets for 2003

### Major Initiatives under EPD's programme:

#### Reporting Area

#### Targets for 2003

Contribution to Strategic Decision-making

- To prepare a strategic environmental assessment (SEA) manual to provide guidelines and technical advice on SEA.
- To produce a CD-ROM to capture the knowledge and experience shared at the “Conference on Reshaping Environmental Assessment Tools for Sustainability”.
- To update various environmental databases for the Computer-aided Sustainability Evaluation Tool (CASET) in 2003.

Prevention and Mitigation through Environmental Impact Assessment

- To launch an additional feature in the EIAO Website to enable searching of environmental monitoring and audit information of major development projects by geographic area or by nature of the project in October 2003.

Better Air Quality

- To continue the large-scale retrofit programme for pre-Euro standard diesel vehicles over 4 tonnes.
- To enforce the regulation to require installation of a particulate removal device in pre-Euro standard diesel vehicles up to 4 tonnes when their licences are renewed, subject to approval of the regulation by LegCo.
- To proceed with the continued enforcement of the perchloroethylene regulation, including the vetting of new dry-cleaning machines for inclusion into the approval list.

- To launch the voluntary Indoor Air Quality Certification Scheme in mid-2003.
- To implement the following tasks, which were agreed by the special panel on Pearl River Delta Air Quality Management and Monitoring set up under the Hong Kong – Guangdong Joint Working Group on Sustainable Development and Environmental Protection:
  - To draw up a regional air quality management plan in 2003;
  - To establish and operate a regional air quality monitoring network consisting of a total of 16 stations by 2004;
  - To compile a 2001 regional emission inventory in 2003;
  - To compile a handbook on preparing regional emission inventories in 2003;
  - To conduct a technical exchange workshop on monitoring techniques for particulate matters and VOCs in February 2003;
  - To evaluate the feasibility of establishing an emission trading pilot scheme in the energy sector in the Pearl River Delta Region by the end of March 2003.
- To finalise and issue the practice notes for managing air quality in air-conditioned public transport facilities.
- To introduce a regulation to require petrol filling stations to install vapour recovery systems to control the emission of petrol vapour during vehicle refueling by end 2003 and to implement the regulation in early 2004.
- To prepare a proposal to amend the Ozone Layer Protection Ordinance to ban the importation of products containing CFCs, tentatively by 2005.
- To review 200 planning schemes and strategic proposals to

#### Quieter Environment

minimise noise problems for about 46 000 people.

- To review the eligibility of 20 existing roads for inclusion in the programme to retrofit barriers.
- To support investigation studies/design work for retrofitting barriers for Phases 1 and 2 of the retrofitting programme, the engineering feasibility studies for Phase 3 and the work for resurfacing the identified road sections.
- To issue codes of practice to guide the industry on good management practices to prevent violations of the Noise Control Ordinance.
- To conduct a study on noise levels in Hong Kong.
- To finalise the report on the 2002 EPD-State Oceanic Administration marine monitoring method validation work and develop a plan to facilitate Hong Kong's participation in the National Marine Environment Monitoring Network.
- To complete the Harbour Area Treatment Scheme (HATS) studies and consult the community on the way forward.
- To introduce the new effluent standards into Legislative Council for negative vetting subject to decision by our policy bureau.
- To propose a biological indicator monitoring strategy for the marine environment.
- To prepare a plan for monitoring pollution by toxic substances in the marine environment.
- To complete the on-going sewerage master plan (SMP) reviews.
- To commission a study on urban stormwater pollution, focusing on the West Kowloon area, and to recommend measures for tackling urban stormwater pollution problems.
- To work out a proposal for an effluent reuse demonstration

#### Better Water Quality

Environmentally-Sound  
Waste Management and  
Facilities

- scheme in the North District area.
- To carry out preparatory work for the first progress review of the Deep Bay Water Pollution Control Joint Implementation Programme in collaboration with the Shenzhen Environmental Protection Bureau.
  - To formulate a Mirs Bay regional water quality management plan jointly with Shenzhen authorities.
  - To submit legislative proposals to tighten up control on illegal disposal of waste to the Legislative Council for consideration.
  - To prepare a draft legislative framework to support waste reduction measures.
  - To continue to implement on-going and new initiatives under the Waste Reduction Framework Plan.
  - To produce the first draft Waste Management Plan.
  - To submit the draft bill on landfill charging for the Legislative Council's consideration.
  - To commission a pilot scheme to recycle waste tyres.
  - To complete a pilot scheme at the North West New Territories Refuse Transfer Station for recycling electrical and electronic appliances.
  - To continue the assessment of submissions received under the Expression of Interest (EOI) on Waste Management Facilities, and to develop integrated waste management facilities options based on the findings of the EOI exercise.
  - To complete a financial service study to examine the best financial arrangements and financial contract terms for the development and management of a recovery park by May 2003.
  - To consider other possible alternative uses of the Ngau Tam Mei Composting Plant site.

- To complete the construction of the grass pitch at the former Sai Tso Wan Landfill and open the facility for use by the public in March 2004.
  - To commission the Ma Wan Refuse Transfer Facility.
  - To test out a new mode of waste separation by implementing the Dry and Wet Waste Separation Pilot Programme in four housing estates in Eastern District.
  - To commission feasibility studies on extension schemes for the WENT and NENT Landfills.
  - To complete a review on the costs and benefits of the refuse transfer station network.
  - To commence tendering for the provision of clinical waste treatment facilities in the Chemical Waste Treatment Centre.
  - To complete the Technical Feasibility Statement of the sludge treatment facilities and to start a feasibility and EIA study for the facilities.
  - To award the contract for the design, construction and operation of a low level radioactive waste storage facility.
- Effective Enforcement and  
Emergency Response
- To develop and implement a departmental prosecution policy and enhance transparency to the public.
  - To develop and implement a new Complaint Management Policy to streamline the handling of pollution complaints.
  - To explore the use of portable digital assistants in routine enforcement work and complaint investigation with a view to enhancing effectiveness.
- Building Partnerships
- To develop guidebooks, train-the-trainer VCDs and websites on good practices for property managers and the construction and vehicle repair trades.
  - To enhance the Restaurant Help Desk service by including Meet-the-Advisor services to provide technical advice on

specific problems and to disseminate new technologies/green practices.

- To develop a partnership with clinical waste stakeholders through workshops and seminars so as to enable them to comply with the new clinical waste legislation.
- To hold 8 Environmental Impact Assessment (EIA) Ordinance User Liaison Group meetings to share experiences and discuss how the EIA process can be improved.
- To issue seven Guidance Notes to provide guidelines on good practices on environmental impact assessment.
- To deliver more EIA training workshops for partnership building and for enhancing understanding of the EIA mechanism.
- To continue the EIA Helpdesk Hotline to advise on EIA matters.
- To promote the EIA training and capacity building programme to the private sector.
- To set up a Property Management Partnership Liaison Group as a one-stop forum for discussing and resolving environmental issues, including waste reduction, which are of concern to the property management sector.
- To implement Phase VII of the Waste Recycling Campaign in Housing Estates in 2003 to recruit 120-150 more housing estates to participate.
- To invite 743 schools and over 12 660 students to join the Student Environmental Protection Ambassador Scheme in 2003.
- To conduct 45 training workshops to train 900 stakeholders to be green leaders in the first quarter of 2003. To complete the Green Leader programme by the end of March 2003.
- To conduct six environmental education training workshops for 300 primary teachers in 2003.

#### Environmental Awareness and Education

- To arrange 110 community visits by the Mobile Environmental Resource Centre in 2003.
- To invite 150 more pre-schools to join the Waste Separation Scheme for Pre-schools in 2003.
- To organize 75 environmental awareness training sessions for civil servants in 2003-04.
- To arrange 120 community outreach visits by Green Desk in 2003-04.

### **Initiatives to Strengthen the Environmental Performance of Our Internal Operations:**

#### **Reporting areas**

#### **Target for 2003**

Corporate  
Environmental  
Management

- To complete the review of environmental aspects of EPD's internal activities.

Minimising the Impacts  
of Our Operations

- To continue close supervision of our waste facilities contractors aiming at full compliance with both legal and contractual environmental requirements.
- To achieve full compliance with legal and departmental environmental requirements in our laboratories and field operations.

Greener Office

- To further reduce photocopy paper consumption by 2.5% in accordance with a government-wide voluntary paper saving target.
- To implement further energy saving measures in conjunction with an energy audit.
- To further pursue green transport arrangements and reduce reliance on Government vehicles.
- To extend the e-request arrangement for purchasing equipment/consumables, and to phase out hard copy submission.
- To explore wider use of mobile computing in field work and operations.

Staff Awareness,  
Training and  
Participation

- To organize workshops and visits for all staff.
- To promote staff participation and contributions to complement government-wide waste reduction initiatives.

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## Verification Statement

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### Verification Objectives

BMT Asia Pacific Limited was commissioned by the EPD in June 2003 to verify the contents of its fourth environmental report, entitled Environmental Performance Report 2003. The objective of the verification was to validate data and claims made in the report, as well as the supporting data collection and information management systems. An assessment of the report's comprehensiveness against EPD's key programme areas and responsibilities was undertaken and recommendations for improving EPD's reporting process were also provided.

This statement presents the findings of the verification and represents a wholly independent opinion of Environmental Performance Report 2003. BMT Asia Pacific was not involved in any aspect of the preparation of the report.

### Verification Approach

During the verification process, meetings were held with EPD's managerial, professional and technical staff. A representative sampling of claims was discussed and substantiated, and supporting data was collected and examined. Where further investigation was necessary to confirm claims, additional information was requested and reviewed.

The following elements of the report were sampled during the verification:

- Management commitment and engagement in the implementation of EPD's policy, programme and continual improvement initiatives;
- EPD's provision of input to major government-wide policies and strategies and management of strategic environmental assessments;
- Major projects in the environmental programmes areas of air, noise, waste and water;
- Enforcement of environmental legislation (i.e. prosecutions);
- Improvements in environmental conditions associated with EPD's implementation of initiatives;

- Legal compliance of EPD facilities (i.e. laboratories);
- Contractor management (i.e. green procurement);
- Emergency preparedness and response;
- Complaints handling and response;
- External awareness raising and training initiatives;
- Hong Kong – China pollution reduction partnerships;
- Internal green management, auditing and greening initiatives (i.e. energy-saving sensors, carpooling); and
- Target setting and implementation.

### **Verification Results**

During the verification process, EPD provided data and information to support the claims made in the report that were selected for verification. The results of the verification process are summarised below.

#### Report Accuracy

- The claims made in Environmental Performance Report 2003 that were examined by BMT represent an accurate account of EPD's actions and performance in the year 2002;
- Claims are supported by data and information that were appropriately extracted from data collection systems; and
- Data collection and information management systems are efficient, organized, robust and effective. Data and information are collected, recorded, stored and analysed in a systematic manner in accordance with specified parameters.

#### Report Coverage and Relevance

- The report provides a balanced overview of EPD's performance with respect to its major areas of responsibility, key programme areas and the significant environmental aspects arising from its daily operations;
- It also provides an extensive account of how EPD engages various authorities, industries/trades, communities and stakeholder groups, both locally and overseas, to form partnerships for improving environmental protection;
- EPD consistently sets improvement targets in line with its policy commitments. Specific actions in the year 2002 against the Department's 2002 targets are presented, and planned targets for the year 2003 are also outlined; and
- The report demonstrates an increased openness in EPD's coverage of controversial issues. In

particular, the receipt of negative public feedback on legislative amendment proposals is described and follow-up actions are explained.

### Recommendations for Future Reports

In future reports, EPD is encouraged to:

- Report progress against targets, policy commitment and goals through an assessment scale that clearly indicates the extent to which a target, or a set of divisional targets has been achieved and relates this progress to overall objectives for specific programmes or environmental conditions;
- Consolidate key performance indicators for each programme area in summary charts to facilitate year-on-year comparisons of performance;
- Enhance the linkages between EPD's environmental performance and improvements in the HKSAR's environmental conditions; and
- Extend environmental data collection and reporting in accordance with leading best practices, in particular, the Global Reporting Initiative's Sustainability Reporting Guidelines, and plan for sustainability reporting.

### 26 June 2002

<b>Norman J. Di Perno Managing Director, BMT Asia Pacific Limited</b>	<b>Anne Copeland Chiu Lead Verifier, BMT Asia Pacific Limited</b>
	<b>Deanna Li Verifier and Lead Data Reviewer, BMT Asia Pacific Limited</b>

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## Feedback Form

We would welcome your valuable feedback on Environmental Protection Department's Environmental Performance Report 2003 (the Report), which would be most useful for improving our report in the coming year. Please complete this form and post it to the Environment, Safety and Health Unit, Environmental Protection Department, 25/F, Southorn Centre, 130 Hennessy Road, Wan Chai, Hong Kong or fax to 2834 8845. You may also send any comments by email to: [enquiry@epd.gov.hk](mailto:enquiry@epd.gov.hk). Thank you.

1. How did you find out about the Report?

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2. Did you find the Report informative?

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3. Did you find the information presented in an easily understandable way?

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4. Which information did you find particularly useful?

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5. Which aspect(s) of the Report would you like more information on?

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6. How can we improve the Report?

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7. Other comments and suggestions:

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8. Please specify your background (general public, green group, professional / academic, other government department / organisation, etc.)

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(optional)

Name: _____ Telephone: _____
Address: _____

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