

Sewage Treatment Strategy and Infrastructure

The Sewage Services Charging Scheme

Based on the polluter pays principle, the sewage services charging scheme was introduced in Hong Kong on 1 April 1995. Dischargers are required to pay the cost of the sewage services according to the pollution level and quantity of their discharge. To maintain a modest charging level, the scheme aims at recovering only the operating and maintenance cost of public sewage facilities. The construction cost of these facilities remains to be funded by the Government.

Sewage services charges have two components: the Sewage Charge (SC) and the Trade Effluent Surcharge (TES). The sewage services charges are calculated based on water consumption readings provided by the Water Authority excluding water supplied specifically for flushing purposes. Only consumers whose premises are connected to the public sewer system are liable to pay sewage services charges.

The SC aims at recovering the cost of collecting and treating wastewater at or below domestic strength. To reduce government subsidy, the SC rate was revised from the original \$1.20 to \$1.31 per cubic metre of water supplied on 1-4-2008 and then to 1.43 on 1-4-2009. The rate will be incrementally increased by 9.3% per annum until \$2.92 per cubic metre of water supplied on 1-4-2017 and onwards.

As for the TES, it is levied on trades and industries which produce effluents with sewage strengths higher than that of domestic sewage to reflect the additional cost required to treat the effluent at higher pollution level. The Government has completed the trade effluent survey for the TES chargeable trades in end 2007. The generic Chemical Oxygen Demand values of the effluent from these trades were reviewed. According to the survey result and the cost recovery principle, the respective TES rates were adjusted with effect from 1 August 2008. The TES rates for the trades and industries are specified in the Sewage Services (TES) Regulation. At present, there are 27 trades which are required to pay the TES.

Fresh water is a scarce resource. Reducing water consumption through rational utilization of water resources would reduce efforts in sewage treatment and impacts on the environment.

For more information on sewerage strategy, sewage treatment facilities, Harbour Area Treatment Scheme, and the sewage services charging scheme, please visit DSD's website: www.dsd.gov.hk

At present, 93 per cent of the population is served by the public sewerage system which collects about 2.6 million m³ of sewage every day. This system includes a network of sewers over 1,500 kilometres in length and around 275 sewage collection and treatment facilities providing preliminary treatment (screening) to tertiary treatment to sewage generated from residential, commercial and industrial premises in the territory prior to disposal to the sea.

To enable the sustainable development of Hong Kong, the Government has a strategy in place to improve our sewage services in a cost-effective and environmentally responsible manner. We will ensure the sewerage facilities are efficiently operated, properly maintained, and duly upgraded to sustain developments in the territory and to meet the latest environmental standards.

Sewage Treatment Levels in Hong Kong

There are five sewage treatment levels in Hong Kong:

Preliminary Treatment (Screening) - removal of grit and solids larger than 6 mm in size from sewage prior to discharge to sea via submarine outfall.

Primary Treatment - removal of settleable suspended solids in screened sewage by physical sedimentation prior to discharge to sea.

Chemically Enhanced Primary Treatment - chemicals are added during the sedimentation process to enhance the removal of suspended solids and the biochemical oxygen demand.

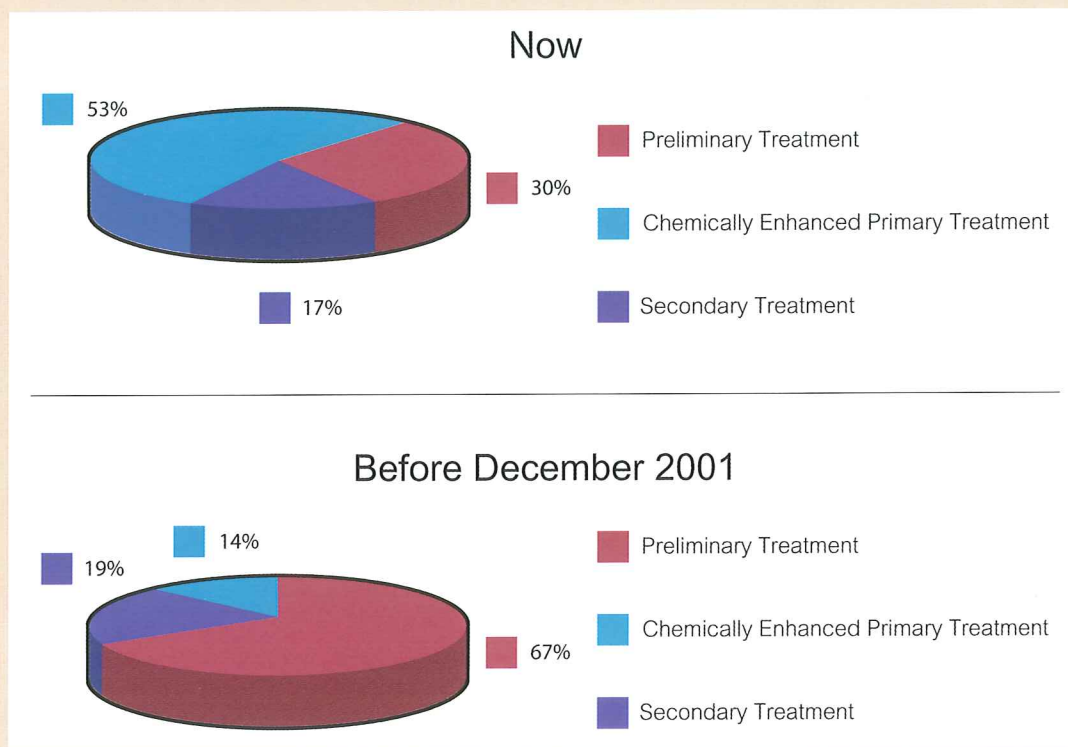
Secondary Treatment - the organic matter in settled sewage is decomposed by micro-organisms in the biological treatment process, achieving about 85% removal of both the total suspended solids and the biochemical oxygen demand.

Tertiary Treatment - residual contaminants after secondary treatment are further removed.

Our Vision

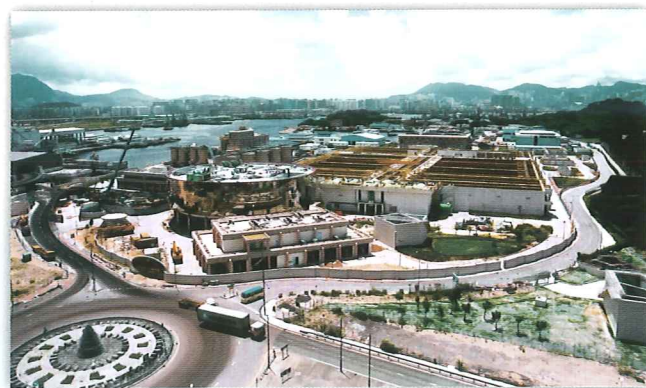
To provide world-class wastewater and stormwater drainage services enabling the sustainable development of Hong Kong.

Out of the sewage being treated, about 30% receives preliminary treatment, 53% receives chemically enhanced primary treatment and 17% receives secondary treatment.



Sewage collected in the New Territories and Southern Hong Kong Island will be conveyed to various sewage treatment works for secondary treatment. The treated effluent will be disposed of to nearby water courses and water bodies. For sewage generated by the population on both sides of Victoria Harbour, the Government has implemented the Harbour Area Treatment Scheme (HATS) which aims to improve the water quality of our Harbour. Stage 1 of the Scheme, which collects and conveys sewage from Urban Kowloon, Kwai Chung, Tsing Yi, Tseung Kwan O, Chai Wan and Shau Kei Wan to Stonecutters Island Sewage Treatment Works for chemically enhanced primary treatment, was commissioned in December 2001. Since full commissioning, about 75% of the sewage discharging into the Victoria Harbour is given chemical treatment in addition to screening and degritting, resulting in significant improvement to the Harbour water quality. In order to sustain the continuous development of Hong Kong and to further improve the Harbour water quality, implementation of HATS Stage 2 is necessary.

Ngong Ping Sewage Treatment Works



Stonecutters Island Sewage Treatment Works

Stage 2 of the Scheme is divided into two phases. Stage 2A will collect sewage from the remaining catchments in the northern and south-western Hong Kong Island and convey to Stonecutters Island Sewage Treatment Works for treatment and disinfection before discharging into the Harbour. Stage 2B will add biological treatment to all HATS flows. The main construction works for Stage 2A is scheduled to commence in mid-2009 and be completed by 2014.

Sewage treatment facilities are progressively built or upgraded to cater for the specific requirements, new demands and needs of different areas. For example, Ngong Ping Sewage Treatment Works (NPSTW) was built and commissioned in late 2005 to cope with the local environment and tourism development. The high quality treated effluent from NPSTW is being used as reclaimed water for toilet flushing at nearby public toilets, toilets in the Ngong Ping Cable Car Terminal and related tourism facilities. Part of the reclaimed water is also used inside the treatment works for rearing fishes and controlled irrigation.



Sewage Master Plan Studies

Sewerage Master Plan

In 1989, a sewage disposal strategy was adopted by the Government. Since then, 16 Sewerage Master Plan Studies have been undertaken covering all areas in the territory. Various projects have been proposed under these Studies and improvements to the sewerage system in the territory are being carried out on a catchment-by-catchment basis. In each of these areas, the existing sewerage network is extended and improved, the existing sewage treatment works are upgraded and new facilities are constructed to ensure sufficient capacity for conveying and treating sewage generated today and in future developments.

Operation and Maintenance of Sewerage System

The Drainage Services Department (DSD) is currently operating about 275 sewage collection and treatment facilities scattered over the territory and maintaining a sewerage network of over 1,500 km in length. As sewers are susceptible to blockage by grease and solids in the sewage, DSD has implemented a preventive maintenance programme of regular inspection and cleansing to ensure that they function properly. In recent years, about 20,000 numbers of blocked sewers were cleared every year with about 5,000 m³ of silt removed.

