

DEVB's response to LegCo Panel on Development

Flood prevention and contingency measures

At the meeting on 27 July 2010 discussing Sha Po Tsai Village flooding incident and flood prevention and contingency measures, the Administration was requested to provide information on the measures recommended in the Drainage Master Plan Studies that had been or would be put in place to prevent flooding in the territory. Our responses are as follows.

To provide a comprehensive solution to the flooding problem in the territory, DSD has commissioned a series of eight Drainage Master Plan Studies since 1996. The Stormwater Drainage Master Plan Studies not only cater for the most severe flooding areas in North and Northwest New Territories such as Sheung Shui and Yuen Long, they also cover all the flood prone areas of the whole territory. In fact, different areas would experience different degree of flooding. Details of the coverage areas for the eight Drainage Master Plan Studies are shown in **Enclosure 1**.

During the course of the Stormwater Drainage Master Plan Studies, a number of drainage improvement options have been adopted for the existing system. These can be categorised as follows:

(a) Enhancement to Existing Drainage System

This involves the local drainage improvement of the pipelines, rivers, nullahs or culverts by means of widening, enlargement or replacement of the existing drainage system. It is the most commonly adopted option in drainage improvement projects and has been implemented in various part of the territory.

(b) Flood Storage

This involves the provision of flood storage tanks to retain the flow from upland catchment such that the peak runoff for the downstream drainage system can be attenuated. This improvement option was adopted in the project such as Sheung Wan stormwater pumping station.

(c) Tunnelling

This involves the construction of a tunnel system to divert storm flows from upland catchment directly into the sea instead of passing through the downstream urbanised areas. This can relieve the capacity of the drainage system in the downstream urbanised areas. This improvement option was adopted in the project such as Hong Kong West drainage tunnel.

(d) Pumping

This involves the installation of pumps to draw down the water level at the flood prone areas and to bring the stormwater directly into the sea through the rising mains. This improvement option was adopted in the project such as Drainage improvement works in Shuen Wan, Tai Po.

The choice of improvement options depends upon the characteristics of individual catchment area. Various constraints such as the configuration of the drainage system, land requirements, environmental consideration, traffic impact, interface with other projects, the location of major utilities and underground structures, etc are needed to be catered for in developing the improvement measure.

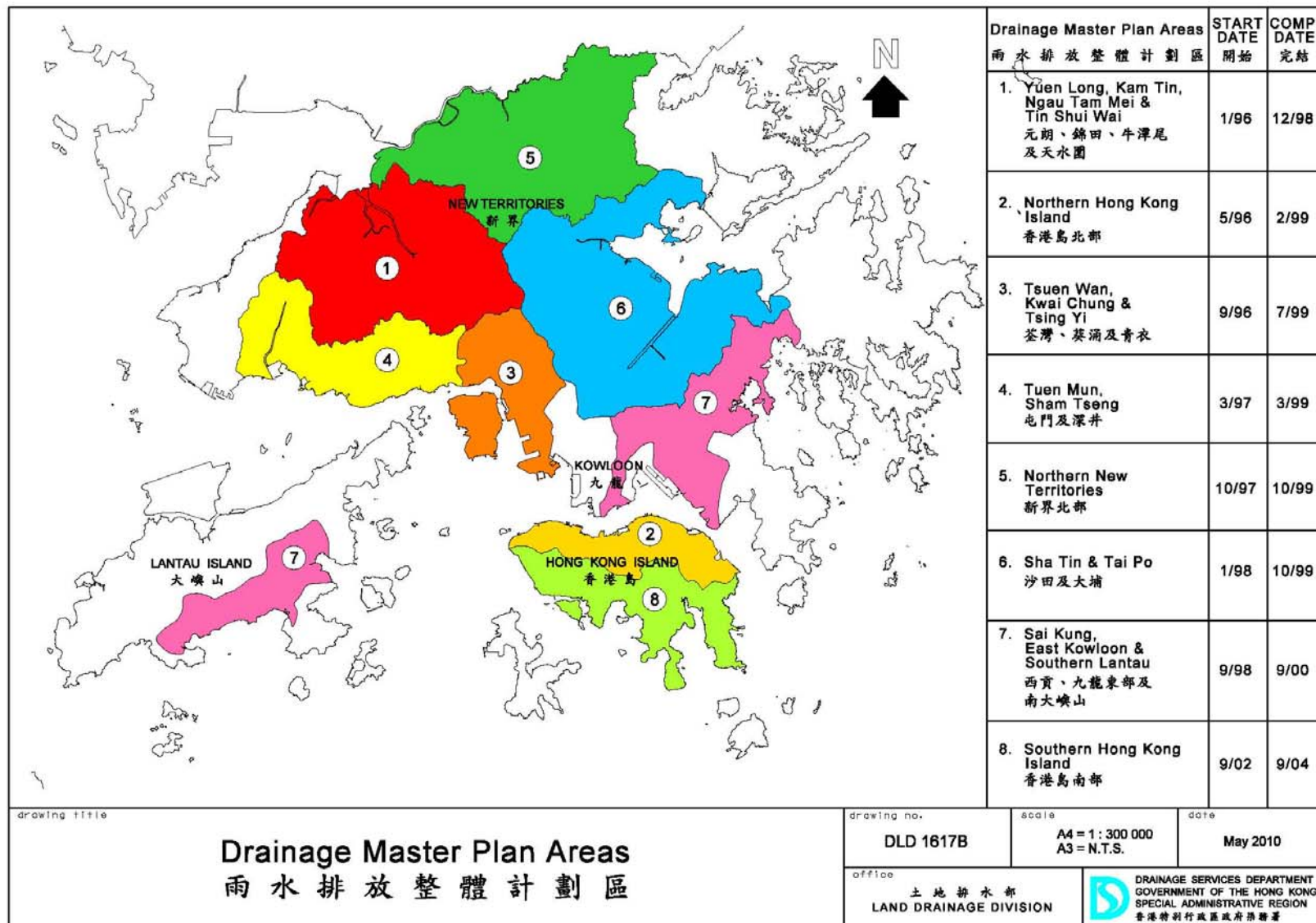
The recommendations of the eight Drainage Master Plan Studies have been implemented progressively since 2001. Based on the recommendations of Drainage Master Plan Studies, 15 projects, such as drainage improvement for Ma Wat River at Kau Lung Hang and Sheung Wan stormwater pumping station, having the total cost of \$2,006M have been completed. Construction works of 14 projects, including Hong Kong West drainage tunnel, Tsuen Wan drainage tunnel, drainage improvement works in upper Lam Tsuen River, She Shan River, upper Tai Po River, and Shuen Wan, having the total cost of \$6,727M are in progress. The planning and design of the 6 flood prevention projects in Happy Valley, San Tin West, Ping Che, Tsung Yuen and Southern Hong Kong Island as recommended in the Studies is continuing.

All ongoing, planned and completed projects arising from Drainage Master Plan Studies are detailed in Table 1, 2 and 3 at **Enclosure 2** respectively.

With the progressive completion of major flood prevention projects, the flooding situation in some flooding blackspots and flood prone areas has been significantly improved. Total number of flooding blackspots was decreased from 90 in 1995 to 18 in 2010. The change in the number of flooding blackspots in past years is detailed in **Enclosure 3**.

DSD will continue to monitor and review other existing drainage systems for hydraulic adequacy. To ensure that the Drainage Master Plan Studies match with the latest development in the districts, DSD has commenced the first Drainage Master Plan Review Study for the Yuen Long and North District in March 2008 for completion in 2011. New drainage improvement schemes will be formulated in due course to meet the required flood protection standards and future development.

**Development Bureau
Drainage Services Department
December 2010**



drawing title

Drainage Master Plan Areas
雨水排放整體計劃區

drawing no.

DLD 1617B

scale

A4 = 1: 300 000
A3 = N.T.S.

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土地排水部
LAND DRAINAGE DIVISION



DRAINAGE SERVICES DEPARTMENT
GOVERNMENT OF THE HONG KONG
SPECIAL ADMINISTRATIVE REGION
香港特別行政區政府排水署

Table 1 - On-going drainage improvement projects**表 1 現正進行建造的雨水排放系統改善工程計劃**

PWP Item 工務工程 計劃項目	Drainage Master Plan (DMP)	Cost 費用 (\$M 百萬元)	Project Name
4092CD	Yuen Long, Kam Tin Ngau Tam Mei & Tin Shui Wai	202	Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai drainage improvements, stage 1 phase 2B — remaining works
4102CD	Tuen Mun & Sham Tseng	86	Drainage improvement in Tuen Mun and Sham Tseng — package B
4103CD	Northern Hong Kong Island	3045	Drainage improvement in Northern Hong Kong Island — Hong Kong West drainage tunnel
4104CD	Northern Hong Kong Island	373	Drainage improvement in Northern Hong Kong Island — Western lower catchment works
4111CD	Tsuen Wan, Kwai Chung & Tsing Yi	1260	Drainage improvement in Tsuen Wan, Kwai Chung and Tsing Yi — Tsuen Wan drainage tunnel
4151CD	Northern New Territories	120	Drainage improvement works in Lung Yeuk Tau, Kwan Tei South and Leng Tsai, Fanling
4153CD	Northern New Territories	162	Drainage improvement works in Tai Po Tin and Ping Che of Ta Kwu Ling, and Man Uk Pin and Lin Ma Hang of Sha Tau Kok
4156CD	Northern New Territories	222	Drainage improvement in Ki Lun Tsuen, Ma Tso Lung, Ying Pun, Shek Tsai Leng and Sha Ling in New Territories
4109CD	Sha Tin & Tai Po	253	Drainage improvement works in Shuen Wan, Tai Po
4148CD	Sha Tin & Tai Po	261	Drainage improvement works in Ping Kong, Kau Lung Hang, Yuen Leng, Nam Wa Po and Tai Hang areas
4152CD	Sha Tin & Tai Po	426	Drainage improvement works in upper Lam Tsuen River, She Shan River, upper Tai Po River, Ping Long and Kwun Hang
4126CD	Sai Kung, East Kowloon & Southern Lantau	191	Drainage improvement in East Kowloon — package B phase 2
4128CD	Sai Kung, East Kowloon & Southern Lantau	98	Drainage improvement in Southern Lantau
4158CD	Southern Hong Kong Island	28	Drainage improvement in Southern Hong Kong Island — package 1

Table 2 - Planned drainage improvement projects**表 2 計劃的雨水排放系統改善工程計劃**

PWP No. 工務工程 項目	Drainage Master Plan (DMP)	Cost 費用 (\$M 百萬元)	Project Name
4160CD	Northern Hong Kong Island	727	Happy Valley underground stormwater storage scheme
4112CD-1	Northern New Territories	24	Drainage improvement in Northern New Territories — package A reconstruction of a box culvert underneath Castle Peak Road at San Tin
4112CD-2	Northern New Territories	110	Drainage improvement in Northern New Territories — package A drainage improvement at San Tin
4118CD	Northern New Territories	49	Drainage improvement in Northern New Territories — package B (remaining works)
4119CD	Northern New Territories	135	Drainage improvement in Northern New Territories — package C (remaining works)
4144CD	Southern Hong Kong Island	248	Drainage improvement in Southern Hong Kong Island — package 2

Table 3 - completed drainage improvement projects

表 3 完成的雨水排放系統改善工程計劃

PWP No. 工務工程 項目	Drainage Master Plan (DMP)	Cost 費用 (\$M 百萬元)	Project Name
4110CD	Tsuen Wan, Kwai Chung & Tsing Yi	81	Drainage improvement in Tsuen Wan and Kwai Chung
4114CD	Yuen Long, Kam Tin Ngau Tam Mei & Tin Shui Wai	148	Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai drainage improvements, stage 1 phase 1—Yuen Long and Tin Shui Wai
4120CD	Sai Kung, East Kowloon & Southern Lantau	158	Drainage improvement in Sai Kung
4127CD	Northern Hong Kong Island	199	Drainage improvement in Northern Hong Kong Island—Sheung Wan stormwater pumping station
4133CD	Yuen Long, Kam Tin Ngau Tam Mei & Tin Shui Wai	139	Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai drainage improvements, stage 1 phase 2A—Kam Tin and Ngau Tam Mei
4134CD	Sai Kung, East Kowloon & Southern Lantau	252	Drainage improvement in East Kowloon—package A
4136CD	Sha Tin & Tai Po	72	Drainage improvement works in Sha Tin
4137CD	Sha Tin & Tai Po	233	Drainage improvement for Ma Wat River at Kau Lung Hang
4141CD	Sha Tin & Tai Po	92	Drainage improvement works in Tai Po town area
4142CD	Sai Kung, East Kowloon & Southern Lantau	242	Drainage improvement in East Kowloon—package B phase 1
4143CD	Northern Hong Kong Island	46	Drainage improvement in Northern Hong Kong Island—intercepting drains at Queen's Road Central
4145CD	Northern New Territories	92	Upgrading of stormwater drains in Sheung Shui and Fanling
4146CD	Northern Hong Kong Island	38	Drainage improvement in Northern Hong Kong Island—eastern lower catchment works
4147CD	Northern New Territories	58	Drainage improvement works in Kwu Tung South and Fu Tei Au, Sheung Shui
4149CD	Yuen Long, Kam Tin Ngau Tam Mei & Tin Shui Wai	156	Yuen Long, Kam Tin, Ngau Tam Mei and Tin Shui Wai drainage improvements, stage 1 phase 2B—Cheung Chun San Tsuen and Kam Tsin Wai

Enclosure 3

