

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – Civil Engineering
Environmental Protection – Pollution control
54DP – Further enhancing quality of coastal waters of Victoria Harbour

Members are invited to recommend to the Finance Committee the upgrading of **54DP** to Category A at an estimated cost of \$89.4 million in money-of-the-day prices for carrying out a study on further enhancing quality of coastal waters of Victoria Harbour.

PROBLEM

We need to address the odour and aesthetic problems along the coastal areas of Victoria Harbour which remain a subject of concern to the local community.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to upgrade **54DP** to Category A at an estimated cost of \$89.4 million in money-of-the-day (MOD) prices for carrying out a study on further enhancing the quality of coastal waters of Victoria Harbour (the Study).

/PROJECT

PROJECT SCOPE AND NATURE

3. The scope of the Study comprises –
- (a) field surveys, environmental monitoring and investigations¹;
 - (b) data analysis, preliminary impact assessments², review of best practices and current arrangements to tackle near shore pollution; and
 - (c) formulation of recommendations and programmes to reduce near shore pollution and improve the environment of popular waterfront areas of Victoria Harbour.

_____ A plan showing the study area is at Enclosure 1.

4. Subject to funding approval of the Finance Committee, we plan to commence the Study in early 2016 for completion in early 2018.

JUSTIFICATION

5. With the development of new waterfront promenades on both sides, Victoria Harbour has become increasingly accessible to the public. The Chief Executive has announced in the 2014 Policy Address the commissioning of a consultancy study to enhance the quality of coastal waters of Victoria Harbour, with the long-term objective of enhancing its leisure and amenity value. Under the Study, we will explore various practicable options to effectively reduce near shore pollution, specifically the aesthetic and odour problems, with a view to improving the environment of both sides of the harbour.

6. We are committed to improving the water quality of Victoria Harbour. In the past two decades, we have been implementing the Harbour Area Treatment Scheme (HATS) to collect and treat sewage generated around Victoria Harbour. The commissioning of HATS Stage 1 in 2001 has brought an increase of 10% in dissolved oxygen (DO) and a decrease of 16% in total inorganic nitrogen in 2002-2003. Upon commissioning HATS Stage 2A in 2015, we anticipate that the bulk of Victoria

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¹ Field works include storm water pollution survey, expedient connection survey, manhole inspection, non-point source pollution survey, olfactometry odour assessment and sediment analysis, etc.

² Preliminary impact assessments include environmental, sewerage, drainage, geotechnical, waterworks, traffic and other aspects necessary for preliminary design.

Harbour will comply with the applicable Water Quality Objectives (WQOs)³ such as DO and un-ionised ammonia. HATS Stages 1 and 2A have improved and will further improve the water quality of the main water body of Victoria Harbour. Yet, these improvements are away from coastal waters and may not result in obvious improvement in the quality of coastal waters. Meanwhile, the implementation of HATS Stage 2B will be kept under review taking into account the water quality situation and the latest technological development in biological treatment.

7. There are residual pollution discharges primarily via storm drains into coastal waters, causing odour and aesthetic problems along the coastal areas of Victoria Harbour. Other possible sources of odour include marine refuse, grease and oil at sea, decaying algae, sediments and deposit at drainage outlets and seabed sediments. Odour formed at different locations from various sources will require different solutions to tackle. Nuisance caused by odour also varies with seasons, weather conditions, wind directions, wind speeds and water current. In particular, odour problem is often found more severe in semi-enclosed water bodies such as typhoon shelters.

8. At present, a multi-pronged approach has been adopted to deal with the near shore pollution problems mentioned in paragraphs 1 and 7. The Environmental Protection Department (EPD) takes enforcement actions to stop illegal discharge from buildings to storm drains, and requests the Buildings Department to step in if necessary; the Food and Environmental Hygiene Department (FEHD) takes enforcement actions against food premises conducting scullery activities at rear lanes, and the Drainage Services Department (DSD) replaces broken sewers, rectifies mis-connections between foul sewers and storm drains, desilts storm drains and culverts as well as upgrades or installs dry weather flow interceptors (DWFIs).

9. Despite the concerted efforts of departments concerned, it is difficult to eliminate polluted flow to enter the storm water drainage system, particularly in densely populated areas with many old private buildings. Enforcement actions are unable to fully prevent the various daily activities on the streets from polluting the coastal waters. Desilting of storm drains and culverts and the construction of DWFIs are only ad-hoc mitigation measures. Besides, the installation of DWFIs is subject to space constraints at strategic locations.

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³ WQOs serve as the benchmarks to describe the physical, chemical and biological properties of the marine environment and are designed to measure the “environmental health” of a water body. In general, waters with more sensitive uses require a higher level of protection (i.e. with more stringent WQOs), while water bodies with less sensitive uses require a relatively lower level of protection (i.e. with less stringent WQOs).

10. We therefore need to carry out the Study to identify the specific causes of near shore pollution through evidence-based reviews and various analyses. The Study will then identify targeted solutions through prevention at source and pollution control measures. The major tasks of the Study are –

- (a) initial baseline surveys (e.g. visual inspection, odour patrol, water and sediment sampling) and further investigation on site specific pollution sources to establish overall conditions of near shore pollution levels in Victoria Harbour;
- (b) evidence-based reviews to identify pollution sources affecting regional coastal waters, e.g. storm water pollution survey such as water quality monitoring at storm water outfalls and manholes, survey on mis-connections, manhole inspection and non-point source pollution survey;
- (c) regional environmental investigations including olfactometry odour assessment, headspace analysis, sediment analysis, etc., to assess the nuisance such as aesthetic and odour arising from near shore water pollution;
- (d) review of overseas experience, best practices and current arrangements in combating near shore water pollution;
- (e) exploring practicable measures to prevent pollution at source (e.g. rectify any mis-connections in the sewerage and drainage systems, land use planning, recommendations to increase enforcement efficacy, public education, operation and maintenance of the sewerage or drainage systems) and to reduce pollution discharges with pollution control measures (e.g. clean up actions, engineering solutions such as installation or upgrading of DWFIs, bioremediation treatment and innovative odour removal from storm drains); and
- (f) formulating recommendations and timetable to enhance the water quality of Victoria Harbour and in the long term, its leisure and amenity value. Recommendations have to take into account ongoing improvement works at waterfront areas and practical considerations such as likely reaction from the general public, preliminary environmental, traffic, sewerage and drainage impacts and cost-effectiveness.

11. Management of the Study will involve concerted efforts of all departments concerned. A study steering group will be formed with members from EPD and relevant departments such as DSD, FEHD and Home Affairs Department (HAD).

FINANCIAL IMPLICATIONS

12. We estimate the cost of the Study, including the associated field surveys, environmental monitoring and investigations, to be \$89.4 million in MOD prices (please see paragraph 13 below), broken down as follows –

		\$ million	
(a)	Consultants' fee for	30.0	
	(i) data analysis, preliminary impact assessments, review of best practices and current arrangements	11.5	
	(ii) formulation of recommendations and programmes	11.0	
	(iii) supervision of field surveys, environmental monitoring and investigations	7.5	
(b)	Field surveys, environmental monitoring and investigations	43.0	
(c)	Contingencies	7.0	
	Sub-total	80.0	(in September 2014 prices)
(d)	Provision for price adjustment	9.4	
	Total	89.4	(in MOD prices)

Due to inadequate in-house resources, we propose to engage consultants to undertake the Study and to supervise the associated field surveys, environmental monitoring and investigations. A detailed breakdown of the estimates for the consultants' fees by man-months is at Enclosure 2.

13. Subject to funding approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2014)	Price adjustment factor	\$ million (MOD)
2015 – 2016	25.0	1.05725	26.4
2016 – 2017	40.0	1.12069	44.8
2017 – 2018	10.0	1.18793	11.9
2018 – 2019	5.0	1.25920	6.3
	80.0		89.4

14. We have derived the MOD estimate on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2015 to 2019. We will engage consultants to undertake part of the Study (items in paragraph 3(b) and (c) above) on a lump sum basis with provision for price adjustment. We will deliver field surveys, environmental monitoring and investigations (items in paragraph 3(a) above) under re-measurement contracts because the quantities of works involved will vary depending on actual conditions. The contracts will also provide for price adjustment.

15. The Study and the associated field surveys, environmental monitoring and investigations will not give rise to any recurrent consequences.

PUBLIC CONSULTATION

16. Since the promulgation in the 2014 Policy Address of our initiative to enhance quality of coastal waters of Victoria Harbour, we have from March to May 2014 consulted academics from local universities, professional bodies including the Hong Kong Institution of Engineers, Chartered Institution of Water and Environmental Management Hong Kong, Association of Engineering Professionals in Society, and advocacy bodies including World Wide Fund for Nature Hong Kong and Green Council, on the scope of the Study. From June to August 2014, we have also consulted the relevant committees of nine District Councils (DCs) on both sides of Victoria Harbour (see Enclosure 3 for details), the Advisory Council on the Environment and the Harbourfront Commission.

17. The Study was welcomed by all parties consulted. There was no objection to selecting West Kowloon, East Kowloon, the New Central Harbourfront and Wanchai/Causeway Bay as the priority areas for improvement within the study period. All DCs consulted had no objection to or welcomed the Study. The Sham Shui Po DC and Yau Tsim Mong DC have asked for early completion of the Study and reporting of its progress to the relevant working group in a timely manner. Some DCs further considered that joint departmental efforts with clear demarcation of responsibilities among government departments were necessary to effectively tackle near shore pollution and measures mentioned in paragraph 8 should continue before formulation of medium and long-term solutions under the Study.

18. We consulted the Legislative Council Panel on Environmental Affairs on 24 November 2014 and Members supported the Study. Supplementary information on details in conducting field surveys, environmental monitoring and investigations under the Study, illegal discharge of polluted flow into the coastal waters of Victoria Harbour and HAD and DCs' concerted efforts in rectifying mis-connections in the sewerage and drainage systems was provided to the Panel on 19 March 2015.

ENVIRONMENTAL IMPLICATIONS

19. The Study and the associated field surveys, environmental monitoring and investigations are not designated projects under the Environmental Impact Assessment Ordinance (Cap. 499) and will not cause any adverse environmental impact. We will implement suitable mitigation measures to control any short-term environmental impacts arising from field surveys, environmental monitoring and investigations. The Study will not include any works and will not generate construction waste.

HERITAGE IMPLICATIONS

20. The Study and the associated field surveys, environmental monitoring and investigations will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites or buildings, sites of archaeological interest and government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

21. The Study and the associated field surveys, environmental monitoring and investigations will not require any land acquisition.

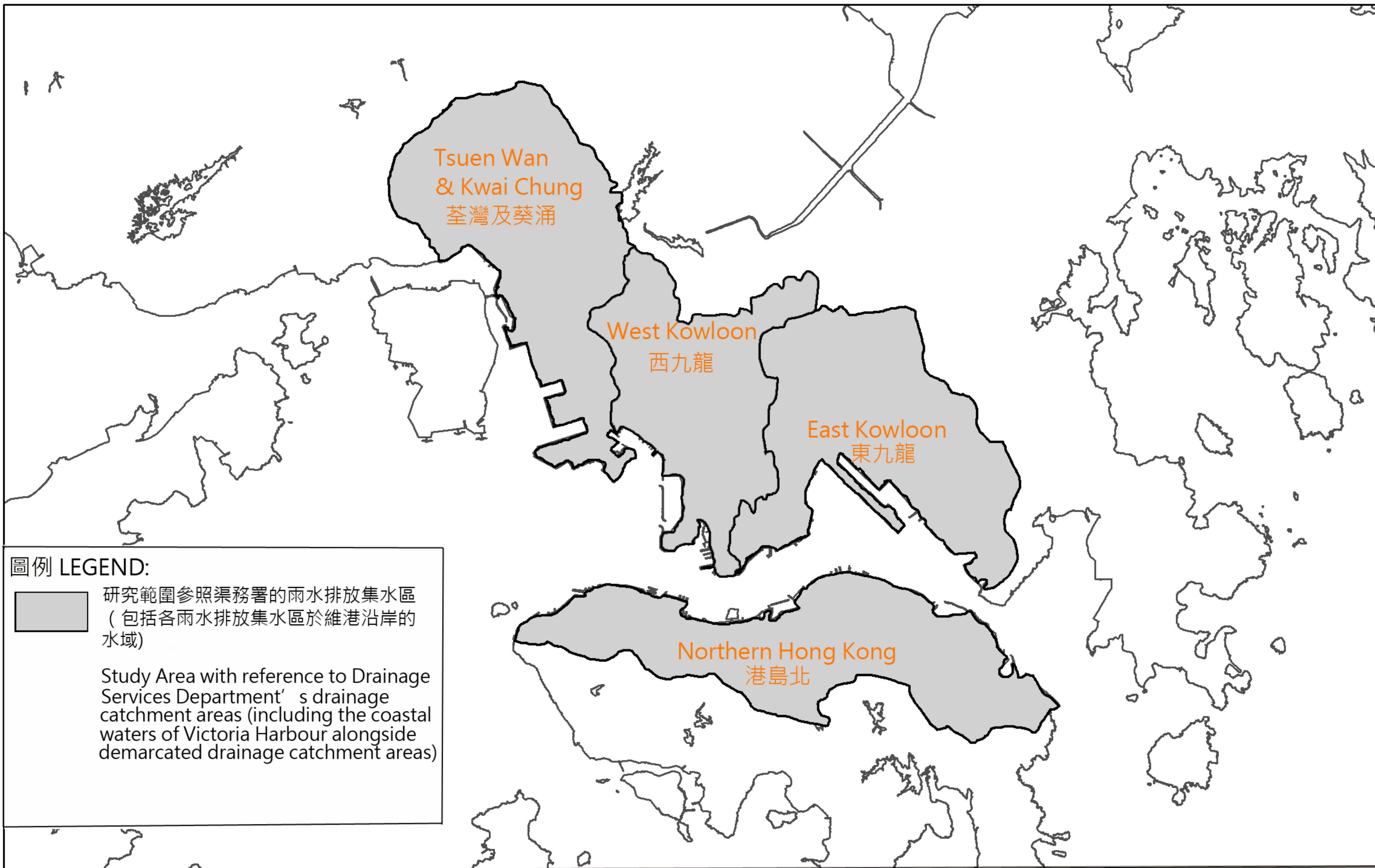
BACKGROUND

22. We upgraded **54DP** to Category B in September 2014.

23. The Study and the associated field surveys, environmental monitoring and investigations will not involve any tree removal or planting proposal.

24. We estimate that the proposed Study and the associated field surveys, environmental monitoring and investigations will create about 91 professional and technical staff jobs, providing a total employment of 1 220 man-months.

Environment Bureau
May 2015



圖例 LEGEND:



研究範圍參照渠務署的雨水排放集水區
(包括各雨水排放集水區於維港沿岸的水域)

Study Area with reference to Drainage Services Department's drainage catchment areas (including the coastal waters of Victoria Harbour alongside demarcated drainage catchment areas)

圖則名稱 Drawing Title

進一步提升維港沿岸水質—研究範圍

Further enhancing quality of coastal waters of Victoria Harbour Study Area

54DP – Further enhancing quality of coastal waters of Victoria Harbour

Breakdown of the estimate for consultants' fees (in September 2014 prices)

Consultants' staff costs ^(Note 2)			Estimated man- months	Average MPS* salary point	Multiplier ^(Note 1)	Estimated fee (\$ million)
(a)	Data analysis,	Professional	64	38	2.0	9.1
	preliminary impact assessments, review of best practices and current arrangements	Technical	49	14	2.0	2.4
(b)	Formulation of recommendations and programmes	Professional	60	38	2.0	8.6
		Technical	49	14	2.0	2.4
(c)	Supervision of field surveys, environmental monitoring and investigations	Professional	24	38	2.0	3.4
		Technical	85	14	2.0	4.1
Total						30.0

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS point to estimate the full staff costs of consultants' staff, including overhead and profit, as the staff will be employed in the consultants' offices (as at now, MPS point 38 = \$71,385 per month and MPS point 14 = \$24,380 per month).
2. The actual man-months and fees will only be known when we have selected the consultants through the usual competitive fee bidding system.

Details of Consultation with District Councils (DCs)

<i>DC</i>	<i>Committee consulted</i>	<i>Date</i>
Wanchai District	Food and Environmental Hygiene Committee	17 June 2014
Eastern District	Food, Environment and Hygiene Committee	27 June 2014
Tsuen Wan District	Environmental and Health Affairs Committee	3 July 2014
Kwun Tong District	Environment and Hygiene Committee	10 July 2014
Sham Shui Po District	Environment and Hygiene Committee	17 July 2014
Yau Tsim Mong District	Food and Environmental Hygiene Committee	17 July 2014
Kowloon City District	Food and Environmental Hygiene Committee	17 July 2014
Central and Western District	Food, Environment, Hygiene and Works Committee	24 July 2014
Kwai Tsing District	Community Affairs Committee	29 July 2014