

CHAPTER 1

**Food and Health Bureau
Food and Environmental Hygiene Department
Architectural Services Department**

**Planning, provision and management
of public toilets by the
Food and Environmental Hygiene Department**

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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PLANNING, PROVISION AND MANAGEMENT OF PUBLIC TOILETS BY THE FOOD AND ENVIRONMENTAL HYGIENE DEPARTMENT

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.20
Audit review	1.21
Acknowledgement	1.22
PART 2: PLANNING AND PROVISION OF PUBLIC TOILETS	2.1
Utilisation of public toilets	2.2 – 2.8
Audit recommendation	2.9
Response from the Government	2.10
Planning and provision of sanitary fitments in public toilets	2.11 – 2.18
Audit recommendations	2.19
Response from the Government	2.20 – 2.21
Planning for new and reprovisioning of public toilets	2.22 – 2.29
Audit recommendations	2.30
Response from the Government	2.31

	Paragraph
Planning for refurbishment of public toilets	2.32 – 2.41
Audit recommendations	2.42
Response from the Government	2.43 – 2.45
Provision of public toilet facilities	2.46 – 2.57
Audit recommendations	2.58
Response from the Government	2.59 – 2.60
PART 3: MANAGEMENT OF PUBLIC TOILET WORKS PROJECTS	3.1
Construction, reprovisioning and refurbishment projects	3.2 – 3.12
Audit recommendations	3.13 – 3.15
Response from the Government	3.16 – 3.17
Aqua privy conversion programme	3.18 – 3.25
Audit recommendations	3.26 – 3.27
Response from the Government	3.28 – 3.29
PART 4: MANAGEMENT OF PUBLIC TOILETS	4.1
Monitoring of cleanliness and conditions of facilities in public toilets	4.2 – 4.30
Audit recommendations	4.31
Response from the Government	4.32 – 4.33
Working arrangements and facilities for outsourced workers performing cleansing duties in public toilets	4.34 – 4.41
Audit recommendations	4.42
Response from the Government	4.43 – 4.44

	Paragraph
Handling of complaints on public toilets	4.45 – 4.52
Audit recommendations	4.53
Response from the Government	4.54
Publicity work	4.55 – 4.61
Audit recommendations	4.62
Response from the Government	4.63

Appendices	Page
A : Food and Environmental Hygiene Department: Organisation chart (extract) (30 June 2019)	102
B : Number of public toilets in 18 districts (June 2019)	103
C : List of minor repair and maintenance works under responsibility of cleansing contractors for public toilets	104
D : Audit checklist for assessing conditions of facilities in public toilets	105
E : Acronyms and abbreviations	106

PLANNING, PROVISION AND MANAGEMENT OF PUBLIC TOILETS BY THE FOOD AND ENVIRONMENTAL HYGIENE DEPARTMENT

Executive Summary

1. In the olden days of Hong Kong, the dwellings of many residents were not provided with toilets and, in general, their hygiene conditions were poor. In 1867, following the outbreaks of cholera between 1865 and 1866, the Government began to provide public toilets. Public toilets were provided by the Government at squatter areas, rural areas and locations without proper sanitary facilities for the sake of protecting public health.

2. According to the Public Health and Municipal Services Ordinance (Cap. 132), the Food and Environmental Hygiene Department (FEHD) may provide and maintain latrines (i.e. toilets) for the use of the public. According to FEHD, public accessible toilet facilities are now mainly provided in different venues/locations (e.g. restaurants and shopping malls). FEHD is no longer the main provider of public accessible toilet facilities and its provision of public toilets is mainly to supplement the general need of the public and tourists. As of June 2019, FEHD managed 798 public toilets (with flushing systems) over the territory and 51 aqua privies (i.e. village-type dry toilets without any flushing system) in the New Territories and on outlying islands. Public toilets and aqua privies managed by FEHD are available for public use free of charge and open 24 hours a day.

3. FEHD sets out the criteria for provision of public toilets under its management in FEHD's Handbook on Standard Features for Public Toilets (FEHD Toilet Handbook). In general, consideration will be given to providing public toilets at tourist spots and locations with anticipated high utilisation rates and without adequate alternative toilet facilities in the vicinity (e.g. toilets within public/commercial venues like parks, playgrounds or shopping arcades) to serve the public/tourists.

Executive Summary

4. FEHD has implemented various works projects for provision of public toilets. Apart from constructing new ones and reprovisioning existing ones, since 2000, FEHD has also implemented a Public Toilet Refurbishment Programme to give a new look to public toilets with enhancements in design and facilities. From 2016-17 to 2018-19, 13 new public toilets were built, 10 public toilets reprovisioned and 27 public toilets refurbished, and the estimated total project costs for these projects were \$282.8 million (comprising \$97.8 million for new construction, \$56.9 million for reprovisioning and \$128.1 million for refurbishment). FEHD also implemented a programme to convert aqua privies into flushing toilets between February 2005 and November 2014. A total of 441 aqua privies were converted into flushing toilets and the total expenditure was \$740.2 million. FEHD mainly engages the Architectural Services Department (ArchSD) as its works agent in implementation of public toilet works projects.

5. FEHD manages public toilets and aqua privies to upkeep the conditions of toilet facilities and hygiene. The cleansing services for these toilets are outsourced to contractors under the related contracts for street cleansing services or provided by FEHD staff. According to FEHD, the cleansing frequency of public toilets and aqua privies depends on the public demand and usage of the toilets. In addition, toilet attendant services are provided in public toilets with high utilisation rates or at tourist spots. Starting from March 2019, FEHD has also procured the services of dedicated deep cleansing teams for such toilets to improve their cleansing condition and to relieve the workload of toilet attendants. In 2018-19, FEHD's expenditure in providing public cleansing services was \$3,096 million (which included, for example, street cleansing and household waste collection). According to FEHD, no breakdown of the expenditure showing the figures solely for provision and management of public toilets was available.

6. As announced in the 2018 Policy Agenda of the Chief Executive of the Hong Kong Special Administrative Region, comprehensive refurbishment works would be carried out for those public toilets of FEHD with high utilisation rates or located at tourist hotspots. The Financial Secretary also announced in the 2019-20 Budget that the Government would allocate more resources to FEHD for refurbishing its public toilets by phases. It is estimated that a total expenditure of about \$600 million will be incurred, involving about 240 (30% of 798) public toilets in the coming five years (i.e. 2019-20 to 2023-24). The Audit Commission (Audit) has recently conducted a review to examine the planning, provision and management of public toilets by FEHD.

Executive Summary

Planning and provision of public toilets

7. *Need to continue to enhance the use of technology to assess and review utilisation rates of public toilets on a regular basis.* Utilisation rate is a key criterion for considering the provision of public toilets by FEHD. According to FEHD, public toilets are classified by utilisation rate (measured by average number of daily visitors) into different categories (e.g. a toilet with 300 or more daily visitors on average is classified as having a high utilisation rate). Audit noted that, in 2018 or earlier, FEHD collected data on average number of daily visitors by manual counting. Since early 2019, FEHD has progressively conducted an infrared sensor counting exercise to count the number of visitors to public toilets. Audit compared the results of infrared sensor counting and manual counting for 149 public toilets. For 93 (62%) public toilets, there were considerable variances between the utilisation rates found by the two counting methods. Audit considers that FEHD needs to review the effectiveness of the technology and continue to enhance the use of technology to assess and review the utilisation rates of public toilets on a regular basis for planning and management purposes (paras. 2.2, 2.4 to 2.6 and 2.8).

8. *Male-to-female toilet compartment ratio stated in FEHD guidelines not fully met.* According to FEHD Toilet Handbook, the ratio of 1 male to 2 female toilet compartments should be used as a general guideline (the ratio has been adopted by FEHD since April 2004). Regarding the male-to-female toilet compartment ratios for the 798 public toilets managed by FEHD as of June 2019, Audit found that 421 (53%) toilets did not meet the 1:2 ratio (i.e. with fewer female compartments than required). Of these 421 public toilets, 360 toilets were constructed or refurbished after 2004, with male-to-female toilet compartment ratios between 1:0 (i.e. without female compartment) and 1:1.9, averaging 1:1.3. According to FEHD, the reasons for not meeting the 1:2 ratio were mainly due to site constraints for expansion. In Audit's view, FEHD needs to, in consultation with ArchSD, take measures to meet the male-to-female toilet compartment ratio as stated in its guidelines as far as practicable (paras. 2.11 to 2.14).

9. *Need to consider reviewing guidelines on provision of sanitary fitments for males and females.* From 2016-17 to 2018-19, a total of 23 public toilets were newly built or reprovisioned and they all met the 1:2 male-to-female toilet compartment ratio (not including urinals for male). Audit noted that: (a) in terms of sanitary fitments (i.e. including both compartments and urinals), 16 (70%) of these 23 public toilets had fewer female sanitary fitments than male sanitary fitments; and

Executive Summary

(b) FEHD's existing guidelines only covered compartments, but not urinals. Audit considers that there is merit for FEHD to consider reviewing its guidelines on provision of sanitary fittings (paras. 2.15, 2.17 and 2.18).

10. ***Some public toilets not refurbished for a long time.*** FEHD shortlists a specific number of public toilets for refurbishment works annually under the Public Toilet Refurbishment Programme which has been implemented since 2000. Audit noted that, as of June 2019, 138 (17%) of the 798 public toilets managed by FEHD had not been included in the Refurbishment Programme in the past 10 years, including 29 (21% of 138) toilets with high utilisation rates. According to FEHD, the key criteria for including a public toilet in the Refurbishment Programme were always its utilisation rate and overall condition. Audit noted that additional resources of about \$600 million would be allocated under the Enhanced Public Toilet Refurbishment Programme for refurbishment works of public toilets (see para. 6). In Audit's view, FEHD needs to, in collaboration with ArchSD, prioritise public toilets for inclusion in the Refurbishment Programme having regard to their utilisation rates and conditions (paras. 2.32 and 2.36 to 2.39).

11. ***Some public toilets not provided with accessible unisex toilets.*** According to FEHD Toilet Handbook, accessible unisex toilets should, where possible, be provided. Audit noted that, as of June 2019, 418 (52%) of the 798 public toilets managed by FEHD were not provided with accessible unisex toilets. Audit noted that, while some of the 418 public toilets could not be provided with accessible unisex toilets (e.g. due to site constraints and technical feasibility issues), further studies would be conducted on 139 public toilets by ArchSD. In Audit's view, FEHD needs to, in collaboration with ArchSD, take measures to provide accessible unisex toilets (e.g. under the Public Toilet Refurbishment Programme) as far as practicable (paras. 2.48 and 2.50).

Management of public toilet works projects

12. FEHD mainly engages ArchSD as its works agent in implementation of public toilet works projects. In general, the construction and reprovisioning of public toilet projects implemented by ArchSD and refurbishment projects under the Public Toilet Refurbishment Programme are funded under two block votes (controlled by ArchSD) of the Capital Works Reserve Fund (paras. 3.2 and 3.3).

Executive Summary

13. *Scope for improvement in construction and reprovisioning of public toilets.* From 2016-17 to 2018-19, ArchSD completed construction of two public toilets and reprovisioning of five public toilets. The seven projects were completed about 1 month to 11 months later than their respective original target completion dates. Audit examination found that for a project with delay of about 8 months in completing the construction works, the delay was due to unsatisfactory performance and slow progress of the contractor. Inadequate resource was one of the contributory factors for the contractor's unsatisfactory performance. There is a need for ArchSD to closely monitor to ensure that adequate resources are deployed by term contractors to carry out public toilet works projects (para. 3.7).

14. *Long time taken in completing refurbishment works of some public toilets.* As of August 2019, there were 84 public toilets included in the Refurbishment Programmes with works not yet completed, including 44 toilets which had been included in the Programmes for about four to eight years after obtaining funding approval. Audit noted a case with refurbishment works still in progress for eight years after inclusion in the Refurbishment Programme, taking about seven years to work out the design for the refurbishment (due to land allocation/acquisition and ad hoc requests arising from local consultations). ArchSD needs to take measures to complete public toilet works projects as soon as practicable (para. 3.9).

15. *Need to convert aqua privies into flushing toilets as soon as practicable.* From February 2005 to November 2014, FEHD implemented a programme to convert aqua privies into flushing toilets by seven phases. The initiative was included in the Policy Agenda in 2007-08, with the target of converting all aqua privies into flushing toilets in phases by 2012-13. However, there were still 51 aqua privies as of June 2019. According to FEHD and ArchSD, 18 aqua privies had been planned for demolition and the conversion works for the remaining 33 aqua privies were at different stages (e.g. under study or in progress). FEHD needs to, in collaboration with ArchSD, expedite actions in converting aqua privies into flushing toilets as far as practicable (paras. 3.18 and 3.23 to 3.25).

Management of public toilets

16. FEHD has 19 District Environmental Hygiene Offices (DEHOs) for monitoring and management of district environmental hygiene services and facilities in the 18 districts, including public toilets and aqua privies. As of June 2019, the

Executive Summary

cleansing services of 625 (78% of 798) public toilets and 31 (61% of 51) aqua privies were outsourced to contractors under the related contracts for street cleansing services, and the remaining 173 (22% of 798) public toilets and 20 (39% of 51) aqua privies were provided by FEHD in-house cleansing workmen. To monitor the performance of contractors and in-house cleansing workmen, FEHD staff periodically conduct inspections of conditions of hygiene, cleanliness and facilities of the public toilets and aqua privies, including routine inspection by DEHO Foreman grade staff and supervisory check by DEHO Health Inspector grade staff (paras. 4.2, 4.6 and 4.7).

17. ***Scope for improvement in conducting inspections of cleansing services and documenting inspection results.*** FEHD guidelines have set out the frequency of routine inspections (which depends on the toilet location and availability of toilet attendant services) and for facilities in remote area, DEHO can exercise discretion to determine the most suitable minimum inspection frequency. According to FEHD guidelines, for public toilets with cleansing services provided by contractors, results of routine inspections should be recorded in a computer system (i.e. Contract Management System (CMS)). Audit examined the inspection records of four DEHOs from January 2018 to June 2019 and noted that: (a) two DEHOs had exercised discretion under FEHD guidelines to adjust downwards the frequencies of routine inspections for 104 public toilets. As the adjustment involved a large number of public toilets converted from aqua privies (which were usually located at remote locations with low utilisation rates), there is merit for FEHD to review the guidelines on the inspection frequency of such toilets; (b) the actual numbers of routine inspections conducted by two DEHOs were fewer than scheduled by 11% and 24% respectively; (c) for one DEHO: (i) the results of 81% of the routine inspections conducted were recorded in CMS, but the results of the remaining 19% inspections conducted were recorded on manual inspection form; and (ii) for inspections conducted on public toilets with attendant services, the results of only 2% of the inspections were recorded in the inspection reports for such toilets (according to FEHD, the results of some of such inspections were recorded in reports for toilets without toilet attendants); and (d) the standard inspection record for public toilets with cleansing services provided by in-house cleansing workmen was in manual form (paras. 4.8 and 4.9).

18. ***Need to take measures to address the issues leading to the increasing number of defects requiring repair and maintenance.*** Audit noted that the number of defects of public toilets and aqua privies referred to the maintenance agents (mainly ArchSD) for rectification increased by 33% from 13,290 in 2015 to 17,732 in 2018,

Executive Summary

while the number of public toilets and aqua privies only increased by 1%. Based on the repair and maintenance requests received by ArchSD for public toilets and aqua privies from January 2015 to June 2019, Audit found that some public toilets required frequent repair and maintenance. For example, for six public toilets, the number of their repair and maintenance requests averaged 89 to 128 requests per year (paras. 4.11 and 4.12).

19. ***Scope for improvement in facilities of some public toilets.*** Audit conducted two rounds of site visits in late May and late June 2019 respectively to 30 public toilets. The toilets were managed by the four DEHOs with inspection records examined by Audit (see para. 17). The site visits found that some toilets had a large number of defective facilities involving various types of defects (e.g. one toilet was identified with 29 defective items involving six types of defects in June 2019 site visits). Moreover, in the June 2019 site visits, Audit noted that 181 defective items identified in May 2019 had not yet been rectified (including 150 items involving minor repairs which should have been rectified by cleansing contractors within 24 hours after being informed by FEHD staff) (paras. 4.20 to 4.22).

20. ***Scope for reviewing provision of toilet attendant services.*** According to FEHD, toilet attendant services are provided in public toilets with high utilisation rates or at tourist spots. As of June 2019, 264 (33%) of the 798 public toilets were provided with attendant services. Audit examination revealed that: (a) 24 (12%) of the 207 public toilets with high utilisation rates were not provided with attendant services; (b) 5 (22%) of the 23 public toilets located at tourist spots were not provided with attendant services; and (c) 77 (29%) of the 264 public toilets provided with attendant services were not having high utilisation rates nor located at tourist spots (para. 4.37).

21. ***Some public toilets with attendant services not provided with attendant rooms.*** According to FEHD Toilet Handbook, a small cubicle should be provided in each male toilet and female toilet for the attendant, and a power socket and an oscillating fan should be provided inside the attendant room. Audit examination of FEHD records revealed that, as of June 2019, 33 (13%) of the 264 public toilets provided with attendant services were not provided with attendant rooms. Of the remaining 231 (87%) public toilets with attendant rooms, there were 53 toilets with only one toilet attendant room and 178 toilets without power socket, fan or exhaust fan inside the attendant rooms (paras. 4.39 and 4.40).

Executive Summary

22. *Scope for enhancing analysis of complaints received on public toilets.*

From 2016 to 2018, FEHD received an average of about 2,800 complaints on public toilets annually. Audit reviewed the information kept by FEHD's computer system (i.e. Complaints Management Information System (CMIS)) on complaints on public toilets, and noted that there was no dedicated field for capturing the name of a public toilet under complaint and FEHD had not made use of the data field "subject" (containing brief information about the content of complaint) to analyse the nature of complaint (paras. 4.49 and 4.50).

23. *Need to enhance publicity on proper use of public toilets.* According to FEHD, in addition to hardware improvement and enhancement of cleansing services, public awareness about the importance of toilet hygiene as well as the proper use of toilet facilities are equally vital in upkeeping cleanliness of public toilets. During Audit's site visits of public toilets in May and June 2019, Audit noted that some toilets were not properly used by the public, e.g. some toilets remained unflushed after use (paras. 4.55 and 4.56).

Audit recommendations

24. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

Planning and provision of public toilets

- (a) **review the effectiveness of the infrared sensor counting technology and continue to enhance the use of technology to assess and review the utilisation rates of public toilets on a regular basis (para. 2.9);**
- (b) **consider reviewing FEHD guidelines on provision of sanitary fitments (including urinals and compartments), and subject to the review, in consultation with the Director of Architectural Services, take measures to meet the male-to-female toilet compartment ratio as stated in FEHD guidelines as far as practicable (para. 2.19(a) and (b));**
- (c) **in collaboration with the Director of Architectural Services, prioritise public toilets for inclusion in the Enhanced Public Toilet Refurbishment**

Executive Summary

Programme having regard to their utilisation rates and conditions (para. 2.42(a));

- (d) in collaboration with the Director of Architectural Services, take measures to provide accessible unisex toilets as far as practicable (para. 2.58(a));**

Management of public toilet works projects

- (e) in collaboration with the Director of Architectural Services, expedite actions in converting aqua privies into flushing toilets as far as practicable (para. 3.27);**

Management of public toilets

- (f) review FEHD guidelines on the inspection frequency of public toilets converted from aqua privies (para. 4.31(a));**
- (g) take measures to ensure that routine inspections are conducted as scheduled and inspection results are timely input to CMS (para. 4.31(b));**
- (h) remind DEHO staff to strictly follow FEHD's requirements to input the inspection results in CMS (para. 4.31(c));**
- (i) explore the use of information technology for keeping inspection records of cleansing services provided by in-house cleansing workmen (para. 4.31(d));**
- (j) in collaboration with the Director of Architectural Services, take measures to address the issues leading to the increasing number of defects in public toilets requiring repair and maintenance (para. 4.31(f)(i));**
- (k) strengthen actions to ensure that defects in public toilets are timely identified and referred to contractors and relevant maintenance agents for repair and maintenance, and closely monitor the progress and take appropriate follow-up actions (para. 4.31(i));**

Executive Summary

- (l) **review the provision of toilet attendant services, having regard to the up-to-date utilisation rates of public toilets assessed with the use of technology and other relevant factors (para. 4.42(b));**
 - (m) **in collaboration with the Director of Architectural Services, strengthen actions to provide attendant rooms and related facilities for toilets with attendant services as far as possible (para. 4.42(c));**
 - (n) **consider enhancing CMIS and strengthen the regular analysis of complaints received on public toilets (para. 4.53(b)); and**
 - (o) **continue to enhance publicity on proper use of public toilets (para. 4.62(a)).**
25. **Regarding management of public toilet works projects, Audit has also recommended that:**
- (a) **the Director of Architectural Services should:**
 - (i) **closely monitor to ensure that adequate resources are deployed by term contractors to carry out public toilet works projects (para. 3.13(a)); and**
 - (ii) **take measures to complete public toilet works projects as soon as practicable (para. 3.13(b)); and**
 - (b) **the Director of Food and Environmental Hygiene and the Director of Architectural Services should endeavour to take forward refurbishment projects under the Public Toilet Refurbishment Programme in a timely manner (para. 3.15).**

Response from the Government

26. The Director of Food and Environmental Hygiene and the Director of Architectural Services agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 In Hong Kong, the provision of public toilets by the Government has a long history dating back to the nineteenth century. In the olden days of Hong Kong, the dwellings of many residents were not provided with toilets and, in general, their hygiene conditions were poor. In 1867, following the outbreaks of cholera between 1865 and 1866, the Government began to provide public toilets. Public toilets were provided by the Government at squatter areas, rural areas and locations without proper sanitary facilities for the sake of protecting public health.

1.3 According to the Public Health and Municipal Services Ordinance (Cap. 132), the Food and Environmental Hygiene Department (FEHD) may provide and maintain latrines (i.e. toilets) for the use of the public where FEHD considers such toilets to be required having regard to the general benefit of the public, and may equip any such toilets with all requisite furnishings, fittings and mechanical or other appliances for the use, convenience or assistance of persons resorting thereto.

1.4 According to FEHD, regarding the provision of public toilets under its management:

- (a) the living and public health standards of Hong Kong have improved significantly over the years, and the vast majority of buildings in Hong Kong are provided with proper sanitary facilities. Public accessible toilet facilities are now mainly provided in different venues/locations (e.g. restaurants and shopping malls) to cater for the need of the public at large;
- (b) FEHD is no longer the main provider of public accessible toilet facilities. Nowadays, the provision of public toilets by FEHD is mainly to supplement the general need of the public and tourists. Making reference to Singapore, no standalone public toilets are built and maintained by its government.

Introduction

Based on FEHD's observation of the behavioural pattern of the public nowadays, people often use public accessible toilets provided in shopping malls, food centres, markets, restaurants, etc; and

- (c) if land is reserved for construction of public toilets under FEHD's management based on population, it is likely that there will be a duplication of facilities and waste of resources.

1.5 As of June 2019, FEHD managed 798 public toilets (with flushing systems) over the territory and 51 aqua privies (i.e. village-type dry toilets without any flushing system) in the New Territories and on outlying islands. Public toilets and aqua privies managed by FEHD are available for public use free of charge and open 24 hours a day (Note 1). For a public toilet/aqua privy, it normally comprises a male toilet and a female toilet. For 380 (48%) of the 798 public toilets, accessible unisex toilet facilities are also provided.

1.6 Public toilets managed by FEHD are provided throughout the territory, mainly at transport facilities, tourist spots, and any place where crowds are likely to congregate or transient pedestrian traffic is heavy. While most public toilets take the form of a free-standing building (see Photograph 1 for an example), some of them form part of a building with independent entrance at the street level (see Photograph 2 for an example).

Note 1: *FEHD also provides toilets for use by the public in venues under its management which are not open 24 hours a day (e.g. toilets at public markets). In addition, apart from FEHD, other government departments may provide toilet facilities for use by the public in venues/facilities under their management (e.g. parks and sports centres under the Leisure and Cultural Services Department, and country parks under the Agriculture, Fisheries and Conservation Department). Venue toilets under the management of FEHD and toilet facilities under the management of other government departments are not covered in this audit review.*

Photograph 1

A free-standing public toilet at Yuen Long



Source: Photograph taken by Audit staff in June 2019

Photograph 2

A public toilet forming part of a building at Sheung Wan



Source: Photograph taken by Audit staff in October 2019

Planning for public toilets

1.7 The Hong Kong Planning Standards and Guidelines (HKPSG — Note 2) provides general guidelines to ensure that, during the planning process, the Government will reserve adequate land to facilitate social and economic development and provide appropriate public facilities (e.g. community facilities and internal transport facilities) to meet the needs of the public. There are no population-based nor other planning standards for the provision of public toilets by FEHD in HKPSG. According to FEHD, new public toilets under FEHD's management are provided on a need basis (e.g. in new cross-boundary control points), and it is not necessary to provide in HKPSG for the provision of public toilets under FEHD's management (see para. 1.4) with reference to a planning standard.

1.8 ***FEHD's planning criteria for public toilets.*** FEHD sets out the criteria for provision of public toilets under its management in FEHD's Handbook on Standard Features for Public Toilets (hereinafter referred to as FEHD Toilet Handbook). In general, consideration will be given to providing public toilets at tourist spots and locations with anticipated high utilisation rates and without adequate alternative toilet facilities in the vicinity (e.g. toilets within public/commercial venues like parks, playgrounds or shopping arcades) to serve the public/tourists.

1.9 The Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap. 123I — B(SF)R) under the Buildings Ordinance (Cap. 123) govern the standards for the provision of sanitary fitments (including the number of waterclosets, urinals and lavatory basins) in regulated buildings (e.g. cinemas, places of public entertainment, restaurants and workplaces). The minimum standard for the provision of sanitary fitments in regulated buildings is prescribed with reference to the numbers of males and females that are present (or likely to be present) in a building. As the number of male/female persons reaches different levels, the prescribed number of sanitary fitments (e.g. waterclosets and urinals) required is increased accordingly.

Note 2: *HKPSG, published by the Planning Department, is a Government manual of criteria for determining the scale, location and site requirements of various land uses and facilities. According to the Planning Department, it is responsible for coordinating the compilation of HKPSG, and the respective government bureaux and departments will from time to time formulate/review their planning standards and guidelines in HKPSG, taking into account their policies and requirements.*

1.10 According to the Architectural Services Department (ArchSD), being the works agent of the Government, there are no comparable regulated buildings for FEHD's public toilets and no defined methodology to determine population size they serve (Note 3). Provision of sanitary fitments for public toilets should be determined according to individual project needs and specific design requirements from FEHD subject to site constraints. According to FEHD, B(SF)R is not applicable to FEHD's public toilets which are not confined to only serving users in a particular building. FEHD Toilet Handbook sets out the standard of provision of sanitary fitments in public toilets under FEHD's management.

Public toilet works projects

1.11 FEHD has implemented various works projects for provision of public toilets. Apart from constructing new ones and reprovisioning existing ones, since 2000, FEHD has also implemented a Public Toilet Refurbishment Programme to give a new look to public toilets with enhancements in design and facilities. In addition, as the absence of a flushing system in aqua privies may create hygiene, pest and odour problems, FEHD implemented a programme to convert aqua privies into flushing toilets between February 2005 and November 2014. FEHD mainly engages ArchSD as its works agent in implementation of public toilet works projects (Note 4).

1.12 ***Construction, reprovisioning and refurbishment projects.*** Construction, reprovisioning and refurbishment projects of public toilets implemented by ArchSD are usually funded under block votes for Category D projects in the Public Works Programme under the Capital Works Reserve Fund (see also Note 4 to para. 1.11). The Director of Architectural Services is the vote controller of the related block votes. FEHD, as the project proponent, determines the need for such projects and submits

Note 3: *According to ArchSD, the methodology of B(SF)R is to determine the sanitary provisions for toilet facilities ancillary to the regulated buildings based on the population sizes served by the regulated buildings or their areas. Such methodology cannot be applied for FEHD's public toilets because a public toilet is not ancillary to any building.*

Note 4: *ArchSD is FEHD's works agent for implementation of Public Toilet Refurbishment Programme and conversion of aqua privies into flushing toilets. For construction and reprovisioning of public toilets, in addition to ArchSD which provides funding for the related works under the Capital Works Reserve Fund, other works departments may also be responsible for the construction and reprovisioning works during implementation of other projects and the works are funded under the related project votes.*

Introduction

through ArchSD for funding approval for Category D projects (see paras. 3.4(b) and 3.5). FEHD will also consult District Councils (DCs) and the local communities on the project plans for the construction works. From 2016-17 to 2018-19, 13 new public toilets were built and 10 public toilets reprovisioned, and the estimated total project costs for these projects were \$154.7 million (comprising \$97.8 million for new construction and \$56.9 million for reprovisioning — Note 5). In addition, 27 public toilets were refurbished from 2016-17 to 2018-19 with estimated total project costs of \$128.1 million.

1.13 ***Aqua privy conversion programme.*** FEHD implemented the conversion programme from February 2005 to November 2014 and the works were funded under Category A projects in the Public Works Programme (Note 6). A total of 441 aqua privies were converted into flushing toilets and the total expenditure was \$740.2 million.

Management of public toilets and aqua privies

1.14 FEHD manages public toilets and aqua privies to upkeep the conditions of toilet facilities and hygiene. As of June 2019, of the total 798 public toilets, the cleansing services for 625 (78%) public toilets were outsourced to contractors under the related contracts for street cleansing services (Note 7). Besides, of the total

Note 5: *For the 13 public toilets newly built and 10 public toilets reprovisioned from 2016-17 to 2018-19, the construction works for:*

- (a) 2 new public toilets (with project cost of \$14.9 million) and 5 reprovisioned public toilets (with project cost of \$20.7 million) were completed by ArchSD under the related block vote for which ArchSD was the vote controller; and*
- (b) the remaining 11 new public toilets (with project cost of \$82.9 million) and 5 reprovisioned public toilets (with project cost of \$36.2 million) were completed under other departments' projects and the costs were charged to the related project votes. The project management of these projects was not covered in this audit review as the project management was under the purview of other departments and, in general, the works involved for public toilets were not the main works of the projects.*

Note 6: *A project is upgraded to a Category A project when funding approval is granted by the Finance Committee of the Legislative Council.*

Note 7: *The Audit Commission had conducted a review on "Hiring of service contractors and professionals", the results of which (covering FEHD's street cleansing services) were included in Chapter 8 of the Director of Audit's Report No. 63 of October 2014.*

51 aqua privies, the cleansing services for 31 (61%) aqua privies were outsourced to contractors. The cleansing services for the remaining 173 (22%) public toilets and 20 (39%) aqua privies were provided by FEHD staff.

1.15 According to FEHD, the cleansing frequency of public toilets and aqua privies depends on the public demand and usage of the toilets. All public toilets and aqua privies are cleansed at least twice a day. In addition, toilet attendant services are provided in public toilets with high utilisation rates or at tourist spots. In general, toilet attendants work on day and evening shifts at different working hours at a maximum of not exceeding 10 hours per shift per day. As of June 2019, 264 (33% of 798) public toilets were provided with toilet attendants.

1.16 To improve the cleansing condition of public toilets and to relieve the workload of toilet attendants, FEHD has procured the services of dedicated deep cleansing teams starting from March 2019 for toilets with high utilisation rates or located at tourist spots. As of June 2019, services of deep cleansing teams were provided at 186 (23% of 798) public toilets. FEHD has planned to extend such services to all public toilets upon renewal of the respective cleansing services contracts.

1.17 To monitor the performance of contractors providing cleansing services, FEHD staff periodically conduct inspections of the conditions of hygiene, cleanliness and facilities of the public toilets and aqua privies. If deficiencies in cleanliness are found, FEHD would request cleansing contractors to rectify within a short time. If defects in toilet facilities are identified, FEHD would request rectification by cleansing contractors (for minor defects) or its maintenance agents (mainly ArchSD for complicated defects or serious damage — Note 8).

1.18 In 2018-19, FEHD's expenditure in providing public cleansing services was \$3,096 million, which included street cleansing and household waste collection, and management of public cleansing facilities such as public toilets and refuse collection points. As of June 2019, a total of 11,866 staff, including 3,106 FEHD staff and 8,760 contractors' staff, were involved in providing these services. According to

Note 8: *For defects in respect of mechanical equipment (such as malfunctioned hand dryer), FEHD will report the defects to the Electrical and Mechanical Services Department for repair works.*

Introduction

FEHD, no breakdown of the expenditure and staff showing the figures solely for provision and management of public toilets was available (Note 9).

Responsible sections and offices

1.19 The main sections and offices of FEHD responsible for the planning, provision and management of public toilets (including aqua privies) are as follows:

- (a) the Headquarters Cleansing and Pest Control Section under Operations Division 3 is responsible for formulating departmental policies and guidelines on environmental hygiene services, including those for public toilets;
- (b) the 19 District Environmental Hygiene Offices (DEHOs — Note 10) under three Operations Divisions are responsible for monitoring and management of district environmental hygiene services and facilities, including public toilets;
- (c) the Planning and Development Section of the Administration Division is responsible for planning, development and coordination of implementation of FEHD capital and minor works projects, including those for public toilets; and
- (d) the Quality Assurance Section of the Grade Management and Development Division is responsible for conducting quality assurance inspections on the services provided by FEHD and service contractors, including public toilets.

Note 9: *According to FEHD, public cleansing services include various services such as street cleansing, household waste collection and management of public cleansing facilities. As of April 2019, there were a total of 34 contracts for street cleansing services (for a 2-year period) at a total cost of about \$2,584 million. According to these 34 contracts, the direct costs related to cleansing services of public toilets were about \$210 million (about 8% of the total contract cost). However, according to FEHD, other costs (e.g. management and administrative costs) were shared by all public cleansing services and could not be separately allocated to public toilet cleansing services.*

Note 10: *Of the 19 DEHOs, 2 DEHOs (Yau Tsim and Mong Kok) serve one DC/district (Yau Tsim Mong). Each of the remaining 17 DEHOs serves one DC/district.*

An extract of FEHD's organisation chart as at 30 June 2019 is at Appendix A.

Additional funding for the Public Toilet Refurbishment Programme

1.20 As announced in the 2018 Policy Agenda of the Chief Executive of the Hong Kong Special Administrative Region, comprehensive refurbishment works would be carried out for those public toilets of FEHD with high utilisation rates or located at tourist hotspots. The Financial Secretary also announced in the 2019-20 Budget that the Government would allocate more resources to FEHD for refurbishing its public toilets by phases, improving ventilation and other facilities, as well as enhancing their cleanliness and hygiene. It is estimated that a total expenditure of about \$600 million will be incurred, involving about 240 (30% of 798) public toilets in the coming five years (i.e. 2019-20 to 2023-24).

Audit review

1.21 In May 2019, the Audit Commission (Audit) commenced a review to examine the planning, provision and management of public toilets by FEHD. The audit review has focused on the following areas:

- (a) planning and provision of public toilets (PART 2);
- (b) management of public toilet works projects (PART 3); and
- (c) management of public toilets (PART 4).

Audit has found room for improvement in the above areas, and has made a number of recommendations to address the issues.

Acknowledgement

1.22 Audit would like to acknowledge with gratitude the full cooperation of the staff of FEHD and ArchSD during the course of the audit review.

PART 2: PLANNING AND PROVISION OF PUBLIC TOILETS

2.1 This PART examines FEHD's actions in planning and provision of public toilets, focusing on:

- (a) utilisation of public toilets (paras. 2.2 to 2.10);
- (b) planning and provision of sanitary fitments in public toilets (paras. 2.11 to 2.21);
- (c) planning for new and reprovisioning of public toilets (paras. 2.22 to 2.31);
- (d) planning for refurbishment of public toilets (paras. 2.32 to 2.45); and
- (e) provision of public toilet facilities (paras. 2.46 to 2.60).

Utilisation of public toilets

2.2 Utilisation rate is a key criterion for considering the provision of public toilets by FEHD (see para. 1.8). According to FEHD, public toilets are classified by utilisation rate (measured by average number of daily visitors) into three categories, i.e. high (300 or more daily visitors on average), normal (100 to 299 daily visitors on average) and low (below 100 daily visitors on average).

Need to continue to enhance the use of technology to assess and review utilisation rates of public toilets on a regular basis

2.3 Audit noted that, in 2003, FEHD conducted a review and identified 16 public toilets to be closed down after considering that their utilisation rates were on the low side and toilet facilities were already provided in the vicinity. In September 2003, in consulting a DC regarding the closure of a public toilet, FEHD informed the DC that it had regularly reviewed the need for public toilets in new development areas and whether the existing public toilets were still required in view of changes in circumstances over time, and the regular review could ensure that the need of the

public could be met and existing resources no longer required could be reallocated for better use. According to FEHD, it had conducted regular reviews on the need for public toilets and aqua privies during the Public Toilet Refurbishment Programme and aqua privy conversion programme respectively and consulted DCs for demolition or conversion accordingly, and had also reviewed individual cases for new, reprovisioning or proposed closure of toilet facilities to assess the local need, local objections and other toilet facilities provided in the vicinity.

2.4 *Manual counting of utilisation rates.* In April 2019, in response to an enquiry by a Member of the Legislative Council (LegCo), FEHD informed LegCo that 207 public toilets had a high utilisation rate (i.e. with 300 or more daily visitors on average). In response to Audit's enquiries, FEHD provided the utilisation rates (in terms of average number of daily visitors) of all public toilets (see Table 1). In August 2019, FEHD informed Audit that:

- (a) the average number of daily visitors shown in Table 1 was collected by manual counting in 2018 or earlier;
- (b) manual counting was usually conducted by FEHD staff on a need basis and in various specific periods due to operational need (e.g. when a toilet was planned for refurbishment or upon local requests for enlargement or closure); and
- (c) combined means of actual counting and estimation were involved in the manual counting methodology and sampling basis (e.g. number of days selected for counting) and there was no single rule. The related documentation could not be retrieved as different points in time were involved.

Table 1**Utilisation rates of public toilets
(Manual counting by FEHD in 2018 or earlier)**

Average no. of daily visitors	No. of public toilets	
High	} 207 (26%)	
(3,000 or above)	14	(2%)
(2,000 - 2,999)	17	(2%)
(1,000 - 1,999)	54	(7%)
(300 - 999)	122	(15%)
Normal (100 - 299)	216	(27%)
Low (< 100)	375	(47%)
Total	798	(100%)

Source: FEHD records

2.5 ***Infrared sensor counting technology introduced.*** FEHD has progressively conducted infrared sensor counting since early 2019. In February and March 2019, FEHD hired a contractor to install infrared sensors at 149 public toilets (Note 11) to count the number of visitors. According to FEHD, infrared sensor counting technology was introduced to collect more precise and useful data for analysis of the utilisation rates of public toilets to facilitate review of cleansing frequency and planning of maintenance of toilet facilities and refurbishment of public toilets. The use of infrared sensor counting technology would be extended to cover all public toilets in late 2019.

2.6 Audit compared the results of infrared sensor counting and manual counting for the 149 public toilets. For 93 (62%) public toilets, there were considerable variances between the utilisation rates found by the two counting methods (see

Note 11: *The contractor was hired at a cost of \$240,000 to install infrared sensors at the entrances of both male and female public toilets/bathroom (covering 149 public toilets at tourist spots or having very high usage rates and 1 bathroom) for seven days for counting the number of persons passing the entrances. The contractor was required to remove all installed devices and submit a statistical report showing the daily/hourly headcount after the seven-day counting period.*

Planning and provision of public toilets

Table 2). For example, a public toilet at Tai Po with a high utilisation rate (1,000 to 1,999 daily visitors on average) revealed by manual counting was found to have a low utilisation rate (91 daily visitors on average) by infrared sensor counting.

Table 2

**Public toilets with variances between the utilisation rates found by
manual counting (in 2018 or earlier)
and infrared sensor counting (in early 2019)**

Utilisation rate		No. of toilets classified by utilisation rate found by infrared sensor counting						Total
		High				Normal	Low	
		(3,000 or above)	(2,000- 2,999)	(1,000- 1,999)	(300- 999)	(100- 299)	(<100)	
No. of toilets classified by utilisation rate found by manual counting	High (3,000 or above)		3	—	1	—	—	4
	(2,000-2,999)	2		5	4	—	—	11
	(1,000-1,999)	—	7		18	3	1	29
	(300-999)	8	6	22		3	—	39
	Normal (100-299)	2	2	1	2		1	8
	Low (<100)	—	—	—	2	—		2
Total		12	18	28	27	6	2	93

Legend: Public toilets with a lower utilisation rate found by infrared sensor counting (39 toilets in total)

Public toilets with a higher utilisation rate found by infrared sensor counting (54 toilets in total)

Source: *Audit analysis of FEHD records*

2.7 In September and October 2019, FEHD informed Audit that:

- (a) for the public toilet at Tai Po in paragraph 2.6, the manual counting data (i.e. 1,000 to 1,999 daily visitors on average) was collected during the 2018 National Day Holidays with a huge inflow of tourists while the

Planning and provision of public toilets

infrared sensor counting data (i.e. 91 daily visitors on average) was collected in summer which was not a peak season for tourists. No toilet attendant service was provided at the public toilet;

- (b) some public toilets were located near tourist attractions. The sudden surge of tourists at specific periods or during festive events might contribute to a high utilisation rate in manual counting which was conducted on a need basis to assess the situations. Some toilets were located in the areas previously associated with parallel trade activities or neighbouring construction works. The changes in these activities or projects over time had also affected the utilisation rates of the toilets and led to the variances between manual counting and infrared sensor counting; and
- (c) FEHD was conducting a trial on using the Smart Toilet System with fixed laser ranging sensors at two public toilets to collect continuous utilisation data of the toilets.

2.8 According to FEHD, utilisation rate is a key criterion for considering the provision of public toilets (see para. 1.8) and reviewing cleansing frequency and planning of maintenance of toilet facilities (see para. 2.5), and infrared sensor counting technology would be able to collect more precise and useful utilisation data (see para. 2.5). As FEHD has started to apply the infrared sensor counting technology since early 2019 and would extend the use of it to cover all public toilets in late 2019, Audit considers that FEHD needs to review the effectiveness of the technology and continue to enhance the use of technology to assess and review the utilisation rates of public toilets on a regular basis for planning and management purposes.

Audit recommendation

2.9 **Audit has *recommended* that the Director of Food and Environmental Hygiene should review the effectiveness of the infrared sensor counting technology and continue to enhance the use of technology to assess and review the utilisation rates of public toilets on a regular basis for planning and management purposes.**

Response from the Government

2.10 The Director of Food and Environmental Hygiene agrees with the audit recommendation. She has said that FEHD will continue to adopt new technology for people counting on trial use of Smart Toilet System and review the effectiveness of all technologies and the utilisation rates of public toilets on a regular basis.

Planning and provision of sanitary fitments in public toilets

2.11 According to FEHD Toilet Handbook, the ratio of 1 male to 2 female toilet compartments should be used as a general guideline, unless otherwise specified, and the actual number of toilet compartments should depend on site condition, space availability, usage pattern and operational need. Since April 2004, FEHD has adopted 1:2 male-to-female toilet compartment ratio. Audit noted that this ratio was not fully met (see paras. 2.12 to 2.14) and there was scope for reviewing the guidelines on provision of sanitary fitments (see paras. 2.15 to 2.18).

Male-to-female toilet compartment ratio stated in FEHD guidelines not fully met

2.12 Regarding the male-to-female toilet compartment ratios for the 798 public toilets managed by FEHD as of June 2019, Audit found that 376 (47%) toilets met the 1:2 ratio as stated in its guidelines, 421 (53%) toilets did not meet the 1:2 ratio (i.e. with fewer female compartments than required), and the remaining toilet only had an accessible unisex toilet without male or female toilet. Audit noted that, of the 421 public toilets not meeting the 1:2 ratio, 360 public toilets were constructed or refurbished after 2004 (i.e. after adopting the 1:2 ratio in 2004). The male-to-female toilet compartment ratios of these 360 public toilets were between 1:0 (i.e. without female compartment) and 1:1.9, averaging 1:1.3.

2.13 In September and October 2019, FEHD and ArchSD informed Audit the following:

FEHD

- (a) although FEHD had adopted the 1:2 male-to-female toilet compartment ratio since 2004, the standard could not immediately be seen in public toilets

Planning and provision of public toilets

with works completed in 2004 and the subsequent few years as the design and layout of these toilets had been finalised before 2004;

- (b) most public toilets not meeting the 1:2 ratio were located in the New Territories, which were usually small in size with 4 to 5 compartments in total and subject to site constraints for expansion. These toilets were mainly converted from aqua privies and, in most cases, the walls and ceiling structures of aqua privies were retained during the conversion works to avoid engineering problems and safety issues. In addition, some toilets were with multi-storey design and rearranging part of the male toilet into the female toilet to change the male-to-female toilet compartment ratio to or closer to 1:2 was not practicable;
- (c) a number of public toilets were refurbished or improved under the retrofitting programme for upgrading the barrier-free facilities. The improvement works carried out under this programme might not involve a complete overhaul to the layout of the toilets. Therefore, the male-to-female toilet compartment ratio would not be improved; and

ArchSD

- (d) the numbers of various sanitary fitments to be provided in each toilet project were first proposed by FEHD. ArchSD, as the works agent of the toilet project, would offer technical advice on whether the site could accommodate the sanitary fitments proposed. FEHD, as the project proponent, would consider whether the design options meet its requirements. After this interactive process, the final layout design, including the number of sanitary fitments, would be endorsed by the Working Group on Upgrading of Public Toilets (see para. 3.2).

2.14 In Audit's view, subject to the review on provision of male and female sanitary fitments in public toilets (see para. 2.18), FEHD needs to, in consultation with ArchSD, take measures to meet the male-to-female toilet compartment ratio as stated in its guidelines as far as practicable.

Need to consider reviewing guidelines on provision of sanitary fitments for males and females

2.15 Since April 2004, FEHD has adopted the ratio of male-to-female toilet compartments (i.e. urinals for male are not included) of 1:2 (from 1:1.5) as a general guideline in planning for construction, reprovisioning and refurbishment of public toilets under its management.

2.16 In September 2019, FEHD informed Audit that, according to its recent infrared sensor counting of 338 public toilets (mainly of higher utilisation rates) in 2019, the average ratio of male-to-female users was 1.8:1. The ratio was 7:1 in one of these public toilets.

2.17 From 2016-17 to 2018-19, a total of 23 public toilets were newly built or reprovisioned. Audit noted the following:

- (a) ***Ratio based on toilet compartments.*** All 23 public toilets met the 1:2 male-to-female toilet compartment ratio according to FEHD Toilet Handbook; and
- (b) ***Ratio based on sanitary fitments.*** For the 23 public toilets, in terms of sanitary fitments (i.e. including both compartments and urinals), the male-to-female ratios were between 1:0.5 and 1:1. For 16 (70%) of these 23 public toilets, the number of female sanitary fitments was smaller than that of male sanitary fitments. Table 3 shows examples on provision of sanitary fitments in five public toilets.

Table 3

**Provision of sanitary fitments in five public toilets
newly built or reprovisioned from 2016-17 to 2018-19**

Toilet	No. of sanitary fitments				Ratio	
	Male compartment (a)	Urinal (b)	Male compartment and urinal (c) = (a) + (b)	Female compartment (d)	Sanitary fitments for male to female (e) = 1:[(d) ÷ (c)]	Compartment for male to female (f) = 1:[(d) ÷ (a)]
A	3	8	11	6	1:0.5	1:2
B	2	4	6	4	1:0.7	1:2
C	4	6	10	8	1:0.8	1:2
D	6	7	13	12	1:0.9	1:2
E	4	4	8	8	1:1	1:2

Source: Audit analysis of FEHD records

2.18 Audit noted that FEHD's existing guidelines only covered compartments (adopting 1:2 male-to-female toilet compartment ratio), but not urinals. In Audit's view, there is merit for FEHD to consider reviewing its guidelines on provision of sanitary fitments (including urinals and compartments), taking into account up-to-date information on usage pattern of compartments and urinals, and male and female users of public toilets.

Audit recommendations

2.19 Audit has *recommended* that the Director of Food and Environmental Hygiene should:

- (a) subject to the review in (b) below, in consultation with the Director of Architectural Services, take measures to meet the male-to-female toilet compartment ratio as stated in FEHD guidelines as far as practicable; and

- (b) consider reviewing FEHD guidelines on provision of sanitary fitments (including urinals and compartments), taking into account up-to-date information on usage pattern of compartments and urinals, and male and female users of public toilets.

Response from the Government

2.20 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD will:

- (a) work with ArchSD to take measures to meet the male-to-female toilet compartment ratio as stated in FEHD guidelines as far as practicable; and
- (b) further review the guidelines on the provision of sanitary fitments in public toilets with consideration to usage patterns of compartments and urinals as well as the ratio of male and female users.

2.21 The Director of Architectural Services agrees with the audit recommendation in paragraph 2.19(a). She has said that ArchSD will provide assistance and technical advice to FEHD in implementing this recommendation.

Planning for new and reprovisioning of public toilets

2.22 According to FEHD, in planning for new and reprovisioning of public toilets, consideration is given to the following:

- (a) ***Requests from the public (including local residents, DC Members and LegCo Members).*** ArchSD is FEHD's works agent for implementation of these projects and the Director of Architectural Services is the vote controller of the related block vote of the Capital Works Reserve Fund. After receiving requests for provision of public toilets, FEHD will consider relevant factors and check the availability of suitable sites and, for justified cases, FEHD will submit through ArchSD requests for funding approval and implementation of works projects (see para. 3.4(b)); and

Planning and provision of public toilets

- (b) *Need for public toilets in new works projects of other government departments.* Construction or reprovisioning of public toilets may be included in new works projects initiated by other government departments after consultation with FEHD, such as provision of public toilets at new public transport interchanges. The initiating department will apply for funding under the related project votes and the related works departments will be responsible for construction and reprovisioning of public toilets during implementation of the projects.

From 2016-17 to 2018-19, 13 new public toilets were built and 10 public toilets were reprovisioned (see Note 5 to para. 1.12).

2.23 According to FEHD Toilet Handbook:

- (a) the need for new and reprovisioned public toilets should be critically examined and fully justified having regard to all relevant factors, including but not limited to existing and anticipated utilisation rates and availability of similar facilities in the vicinity; and
- (b) in general, consideration will be given to providing public toilets at tourist spots and locations with anticipated high utilisation rates and without adequate alternative toilet facilities in the vicinity (e.g. toilets within public/commercial venues like parks, playgrounds or shopping arcades) to serve the public/tourists.

Need to provide more guidelines on the criteria for assessing the need for new and reprovisioning public toilets

2.24 Regarding the criteria concerning existing and anticipated utilisation rates and availability of similar facilities in the vicinity (see para. 2.23(a)), Audit noted that FEHD had no guidelines elaborating the application of such criteria, including:

- (a) the basis (in terms of utilisation and other toilet facilities in the vicinity) for determining the need for a toilet and the scale of its facilities (e.g. number of waterclosets/urinals when the number of male/female visitors reaches different levels) (see also paras. 2.12 to 2.18 for Audit's findings related to provision of male and female toilet compartments); and

- (b) the basis to determine availability of other toilet facilities in the vicinity (e.g. distance from a proposed public toilet).

2.25 Regarding the criterion concerning the provision of public toilets at tourist spots (see para. 2.23(b)), Audit noted that in March 2017, in response to a LegCo Member's enquiry, the Food and Health Bureau informed LegCo that FEHD had not laid down criteria for defining whether certain public toilets were located within the areas of tourist hotspots.

2.26 In Audit's view, FEHD needs to consider providing more guidelines on the application of the criteria for assessing the need for new and reprovisioning public toilets under the management of FEHD.

Need to keep under review the adequacy of public toilets at tourist spots

2.27 According to FEHD Toilet Handbook, consideration will be given to providing public toilets at tourist spots. Specific considerations for public toilets at tourist spots include providing feature wall on the exterior of the toilets to create a lively atmosphere and providing more pedestal type waterclosets to cater for the needs of overseas tourists.

2.28 Some LegCo Members and DC Members have expressed concerns on inadequate public toilets at tourist spots from time to time. In August and September 2019, FEHD informed Audit that:

- (a) FEHD had assessed the adequacy of the number and facilities of the public toilets at tourist spots having regard to the up-to-date level of utilisation and alternative toilet facilities in the vicinity, and had made best endeavours to address any inadequacy problem of the number and facilities whenever circumstances permit;
- (b) however, owing to the inherent factors of site constraints, the fact that public toilets were never popular with the public at large and the "not in my backyard" mindset of the general public, FEHD could hardly be able

Planning and provision of public toilets

to address the inadequacy problems of number and facilities, especially at tourist spots;

- (c) the number of tourists had increased drastically in recent years with over 65 million tourists having visited Hong Kong in 2018. They visited nearly each district of Hong Kong. For traditional tourist attractions, it was quite difficult for FEHD to expand the existing public toilets to keep up with the increase in tourists at these locations as most of these attractions were located in developed areas; and
- (d) to tackle the problem, FEHD endeavoured to ameliorate the inadequacy problem through the use of more efficient facilities/features such as using more powerful hand dryer to dry hands more speedily and using flushing valve system for flushing waterclosets after use to enhance the turnover of using toilets.

2.29 In Audit's view, FEHD needs to make continued efforts to address the problem of inadequate public toilets at tourist spots as far as practicable.

Audit recommendations

2.30 Audit has *recommended* that the Director of Food and Environmental Hygiene should:

- (a) consider providing more guidelines on the application of the criteria for assessing the need for new and reprovisioning public toilets under the management of FEHD; and
- (b) make continued efforts to address the problem of inadequate public toilets at tourist spots as far as practicable.

Response from the Government

2.31 The Director of Food and Environmental Hygiene generally agrees with the audit recommendations. She has said that:

- (a) FEHD will keep under review FEHD guidelines and criteria in considering the provision of new and reprovisioning public toilets under its management; and
- (b) there is no specific definition for “tourist spots” in Hong Kong. For new tourist attractions, the planners and operators of these attractions should be responsible for planning the provision of enough toilet facilities to serve the tourists. FEHD will continue to consult the Tourism Commission in reviewing the adequacy of public toilets at tourist spots with a view to better serving the needs of tourists.

Planning for refurbishment of public toilets

2.32 Since 2000, FEHD has implemented a Public Toilet Refurbishment Programme to give a new look to public toilets with enhancements in design and facilities. Under the Programme, FEHD shortlists a specific number of public toilets for refurbishment works annually. According to FEHD, in drawing up the shortlist, priority is given to public toilets (Note 12) fulfilling the following prevailing criteria:

- (a) of old design which have not undergone major refurbishment;
- (b) with high utilisation rates;
- (c) located in popular scenic areas or at tourist spots; and
- (d) with unsatisfactory internal condition/state of wear and tear.

Note 12: *According to FEHD, priority is also given to aqua privies which are infeasible to be converted into flushing toilets and subject to in-situ refurbishment.*

Planning and provision of public toilets

2.33 According to FEHD, prior to 2018-19, only full-scale refurbishment works (Note 13) for public toilets were carried out. However, as only a small number of public toilets could be approved for full-scale refurbishment works each year, and conditions of some public toilets with high utilisation rates might deteriorate rapidly before they would be due for another round of full-scale refurbishment works (see para. 2.35(b)), in 2018-19, refurbishment works of a smaller-scale, namely facelifting was introduced. Public toilets are selected for facelifting works based on the following criteria:

- (a) public toilets with high utilisation rates, which have been dilapidated rapidly but are premature for another round of refurbishment, and subject to overwhelming complaints/criticisms; and
- (b) public toilets which have not undergone refurbishment for quite a long period of time, with unsatisfactory internal condition/state of wear and tear but without structural defects (e.g. spalling), and can be simply made good by facelifting without change of layout.

2.34 ArchSD is FEHD's works agent for implementation of the Public Toilet Refurbishment Programme and the Director of Architectural Services is the vote controller of the related block votes of the Capital Works Reserve Fund. After drawing up a list of proposed public toilets for inclusion in the Refurbishment Programme, FEHD will submit the list to ArchSD for funding approval and implementation. Table 4 shows the number of public toilets included in the Refurbishment Programme from 2016-17 to 2018-19.

Note 13: *According to FEHD, there are two types of refurbishment works, namely full-scale refurbishment and smaller-scale facelifting: (a) full-scale refurbishment will adopt new design, improve toilet layout, beautify exterior wall and replace facilities; and (b) for facelifting of public toilets, the scope of works covers mainly replacement of aged facilities and installation of new features, with the prevailing layout and exterior wall remaining unchanged.*

Table 4

Number of public toilets included in Public Toilet Refurbishment Programme (2016-17 to 2018-19)

Year of Refurbishment Programme	No. of public toilets included in Refurbishment Programme
2016-17	20
2017-18	7
2018-19	15 (Note)
Total	42

Source: FEHD records

Note: There were 15 public toilets with full-scale refurbishment works under the 2018-19 Public Toilet Refurbishment Programme. In addition, according to FEHD, ArchSD had acceded to its additional requests for carrying out facelifting works for 17 toilets in 2018-19.

Some public toilets not refurbished for a long time

2.35 According to FEHD:

- (a) to facilitate the planning and estimation of the resources required, it has, since 2018, set a target that every public toilet will undergo major refurbishment every 10 years. The 10-year refurbishment cycle is a planning target and not a rigid standard for refurbishing each and every public toilet. FEHD has all along taken into consideration all relevant factors, including internal conditions, state of wear and tear, utilisation rates and location of public toilets as well as the time lapse since the last refurbishment, in deciding whether and when to put a public toilet into the Public Toilet Refurbishment Programme; and
- (b) as the condition of public toilets with higher utilisation rates tends to deteriorate more rapidly and will require more frequent refurbishment, consideration should be given to include these heavily-used public toilets in the annual refurbishment programme at a shorter interval so that they can be refurbished before being dilapidated.

Planning and provision of public toilets

2.36 As of June 2019, FEHD managed 798 public toilets over the territory. Audit found that:

- (a) 599 (75%) toilets had been built or refurbished within the past 10 years; and
- (b) 199 (25%) toilets had not been refurbished for more than 10 years. Of these 199 toilets:
 - (i) 61 toilets had been included in the Public Toilet Refurbishment Programme in the past 10 years but refurbishment works were yet to be completed; and
 - (ii) 138 toilets had not been refurbished for 11 to 18 years (averaging 13 years) and had not been included in the Refurbishment Programme in the past 10 years, of which 29 toilets (21%) had high utilisation rates (see Table 5).

Table 5

Public toilets not refurbished for more than 10 years and not included in Public Toilet Refurbishment Programme in the past 10 years (June 2019)

Time counting from last refurbishment date to June 2019	No. of public toilets		
	With low to normal utilisation rate (Note) (a)	With high utilisation rate (Note) (b)	Total (c) = (a) + (b)
More than 10 to 12 years	70	9	79
More than 12 to 15 years	35	10	45
More than 15 to 18 years	4	10	14
Total	109 (79%)	29 (21%)	138 (100%)

Source: Audit analysis of FEHD records

Note: The utilisation rates were based on manual counting by FEHD in 2018 or earlier (see para. 2.4).

2.37 In September and October 2019, FEHD informed Audit that:

- (a) the key criteria for including a public toilet in the Public Toilet Refurbishment Programme were always the utilisation rate and overall condition of the public toilet; and
- (b) regarding the 138 public toilets not refurbished for more than 10 years and not included in the Refurbishment Programme in the past 10 years (see Table 5 in para. 2.36):
 - (i) of the 109 toilets with low to normal utilisation rates, the vast majority of them were converted from aqua privies with low utilisation rates and hence were given a lower priority for refurbishment; and
 - (ii) of the 29 toilets with high utilisation rates, 20 toilets had not been refurbished for more than 12 years to 18 years. FEHD would consider including 19 of the 20 toilets in the 2020-21 Refurbishment Programme. For the remaining toilet, FEHD considered it not cost-effective to refurbish this toilet as it would be closed in 2019 for demolition. A temporary toilet would be put in place until the completion of the reprovisioned toilet in 2022.

2.38 Under the Enhanced Public Toilet Refurbishment Programme (see para. 1.20), the Government will allocate additional resources of about \$600 million to commence full-scale refurbishment or facelifting works for about 240 public toilets of FEHD by phases in the five years from 2019-20 to 2023-24. According to FEHD:

- (a) for the Enhanced Public Toilet Refurbishment Programme, as the condition of the public toilets would vary over time, FEHD would adopt an incremental approach to make the best decision in the selection of toilets for refurbishment each year based on the latest observations; and

Planning and provision of public toilets

- (b) 42 public toilets (comprising 20 toilets for full-scale refurbishment and 22 toilets for facelifting works) had been selected with funding approved for implementation under the Enhanced Public Toilet Refurbishment Programme in 2019-20. In selecting the 42 public toilets, FEHD had considered both the updated manual headcount data (see para. 2.4) about utilisation rates collected by DEHOs and infrared sensor counting (where available) as well as overall condition of the public toilets.

2.39 Audit noted that some public toilets had not been refurbished for a long time (see para. 2.36(b)). In Audit's view, FEHD needs to, in collaboration with ArchSD, prioritise public toilets for inclusion in the Enhanced Public Toilet Refurbishment Programme having regard to their utilisation rates and conditions, particularly those with high utilisation rates and in ageing conditions.

Need to consult stakeholders of tourism industry regarding conditions of public toilets at tourist spots

2.40 According to FEHD, in planning for refurbishment of public toilets, priority will be given to public toilets located in popular scenic areas or at tourist spots (see para. 2.32(c)). Audit noted that, to implement the initiative of improving facilities and cleansing services of public toilets at major tourist spots as announced in the 2018 Policy Agenda, FEHD consulted the Tourism Commission and came up with a list of 23 public toilets that would require improvements in December 2018. However, prior to this, FEHD had not regularly consulted the Tourism Commission or other stakeholders of the tourism industry regarding conditions of public toilets at tourist spots.

2.41 Standard of provision and cleanliness of public toilets plays a part in shaping tourists' view of the environmental hygiene of Hong Kong. In Audit's view, FEHD needs to consult stakeholders of tourism industry (e.g. the Tourism Commission) on a regular basis for planning the related refurbishment works.

Audit recommendations

2.42 **Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

- (a) **in collaboration with the Director of Architectural Services, prioritise public toilets for inclusion in the Enhanced Public Toilet Refurbishment Programme having regard to their utilisation rates and conditions, particularly those with high utilisation rates and in ageing conditions; and**
- (b) **consult stakeholders of tourism industry (e.g. the Tourism Commission) on a regular basis for planning the related refurbishment works.**

Response from the Government

2.43 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD will:

- (a) collaborate with ArchSD to continue to work out the priority list of public toilets for refurbishment at appropriate interval having regard to their utilisation rates, services/overall conditions and locations, as well as the time lapse since they were last refurbished; and
- (b) continue to consult the Tourism Commission on a regular basis for planning the public toilet refurbishment works.

2.44 The Director of Architectural Services agrees with the audit recommendation in paragraph 2.42(a). She has said that ArchSD will provide assistance and technical advice to FEHD in implementing this recommendation.

2.45 The Commissioner for Tourism shares the view that standard of provision and cleanliness of public toilets may alter tourists' perception on Hong Kong and concurs with the audit recommendation in paragraph 2.42(b).

Provision of public toilet facilities

2.46 Audit examination found that there was scope for improvement in the provision of accessible unisex toilets (see paras. 2.47 to 2.50) and portable toilets (see paras. 2.51 to 2.54), and in exploring new toilet facilities and technologies (see paras. 2.55 to 2.57).

Some public toilets not provided with accessible unisex toilets

2.47 It is the Government's established policy objective to provide barrier-free facilities for persons with disabilities, thereby facilitating them to live independently and fully integrate into the community. In addition, barrier-free facilities could benefit the elderly. According to FEHD Toilet Handbook:

- (a) provision of accessible unisex toilet should comply with the requirements in the prevailing "Design Manual: Barrier Free Access" (issued by the Buildings Department in 2008 — Note 14);
- (b) the accessible unisex toilet should, where possible, be accessible from a public corridor or directly from outside the building so that the toilet can be used by persons with a disability, wheelchair users, the elderly and the elderly with frailty, with assistance from members of either sex if necessary; and
- (c) the accessible unisex toilet should normally be at ground floor level. If not, it should be accessible by wheelchair users with special designs (i.e. an accessible route should be provided for wheelchair users by provision of an accessible ramp or lift).

Note 14: *The Buildings Department is responsible for updating a Design Manual concerning barrier-free access and the latest version is "Design Manual: Barrier Free Access 2008". According to the Design Manual, where toilet is provided on a floor, at least one shall be designed as an accessible unisex sanitary facility for use by persons of both sexes and access to which does not necessitate traversing an area reserved for one sex only.*

2.48 Audit noted that, as of June 2019, of the 798 public toilets managed by FEHD, only 380 (48%) toilets were provided with accessible unisex toilets. Of the remaining 418 (52%) public toilets not provided with accessible unisex toilets, 292 (70% of 418) toilets had been either constructed (15 toilets) or refurbished (277 toilets) after 2008 (i.e. after the promulgation of the “Design Manual: Barrier Free Access” in 2008 — see para. 2.47(a)).

2.49 In September 2019, FEHD and ArchSD informed Audit of the following:

- (a) **FEHD.** Of the 798 public toilets, 441 were converted from aqua privies, which had five compartments or below. Most of these toilets were at remote areas or within the boundary of rural villages with difficulty for provision of additional accessible unisex toilets due to site constraints. The reasons for not providing accessible unisex toilets also included restriction by the building structures, local objection received and land restriction for provision of accessible unisex toilets; and
- (b) **ArchSD.** Of the 418 public toilets not provided with accessible unisex toilets:
 - (i) 263 toilets had already been considered in the Retrofitting Programme for barrier-free facilities but the majority of them had been found infeasible;
 - (ii) 16 toilets had been included in the Public Toilet Refurbishment Programme; and
 - (iii) further studies of the remaining 139 toilets would be conducted.

2.50 According to FEHD Toilet Handbook, accessible unisex toilets (which could also be used by the elderly) should, where possible, be provided (see para. 2.47(b)). Audit noted that 418 (52%) of the 798 public toilets managed by FEHD were not provided with accessible unisex toilets (see para. 2.48). While some of the 418 public toilets could not be provided with accessible unisex toilets (e.g. due to site constraints and technical feasibility issues — see para. 2.49(a) and (b)(i)), further studies would be conducted on 139 public toilets (see para. 2.49(b)(iii)). In Audit’s view, FEHD needs to, in collaboration with ArchSD, take measures to

Planning and provision of public toilets

provide accessible unisex toilets (e.g. under the Public Toilet Refurbishment Programme) as far as practicable.

Need to keep under review the provision of portable toilets

2.51 According to FEHD, portable toilets are provided in various situations, including during temporary closure of public toilets for refurbishment, for public functions/events, and where no toilet facilities are available and the need for a public toilet is established but there are constraints on construction of a public toilet (e.g. site constraints). FEHD engages a contractor to supply and manage (e.g. cleansing and repair services) the portable toilets. The cleansing frequency of portable toilets varies among locations, ranging from three times a day to twice a week.

2.52 The current portable toilet management contract was awarded to a contractor at a contract value of \$45 million for three years from March 2018 to February 2021. According to the contract, portable toilets are provided at 145 locations for long-term service (Note 15). Audit noted that 120 (83%) of 145 locations were also included in the previous 3-year contract (with contract period from March 2015 to February 2018), indicating that portable toilets had been provided at some locations for a long time, with the longest case at Central and Western District for 15 years.

2.53 In September and October 2019, FEHD informed Audit that it had:

- (a) initiated in February 2019 a mechanism involving FEHD's Headquarters and DEHOs to review the provision of portable toilets, and issued new guidelines on portable toilets in September 2019 to request DEHOs to conduct regular review and gather objective utilisation data of portable toilets to ascertain the service needs, and whether the provision of portable toilets can be terminated or whether permanent public toilets are warranted; and

Note 15: *According to the contract, long-term service means provision of portable toilet services throughout the contract period or for a continuous duration of more than 180 days.*

- (b) hired contractors to install infrared sensors at all 179 portable toilets at 100 locations in the third quarter of 2019 to review the utilisation rates of portable toilets. Based on the assessment criteria, FEHD would consider ceasing the portable toilet service with very low public demand and providing new public toilets to replace the portable toilets in case the demand is high.

2.54 In Audit's view, as the hygiene condition and facilities/features of portable toilets are substandard compared with other permanent toilets, FEHD needs to keep under review the provision of portable toilets with a view to assessing the need for the service and for replacing them with permanent toilets.

Need to continue to explore new toilet facilities and technologies to enhance public toilet services

2.55 According to FEHD, in addition to the prevailing design guidelines set out in FEHD Toilet Handbook, FEHD will gradually provide or retrofit new and refurbished toilets with enhanced design features/installations to improve public toilet services, including:

- (a) light-emitting diode lighting with replaceable light bulbs;
- (b) automatic sensor soap dispenser for each wash hand basin;
- (c) at least two electric hand dryers of more powerful model with drip tray and waterproof power sockets at suitable places in the common areas;
- (d) lockable stainless steel jumbo roll toilet paper holders in toilet compartments;
- (e) blower fans of high drying speed (with timer control) fitted with air-boot with enhanced design to assist evaporation of moisture underneath the wash hand basins;
- (f) drinking water dispensers outside public toilets as far as practicable subject to site condition; and

Planning and provision of public toilets

- (g) placing manhole covers of public toilets at inconspicuous locations and away from the toilet entrances as far as practicable.

2.56 In September and October 2019, FEHD informed Audit that FEHD:

- (a) would adopt the enhanced features/installations of cabinet wash hand basin system and air-conditioning systems with air curtain on a trial basis to assess and confirm their feasibility and cost-effectiveness; and
- (b) had put on trial a number of new technologies such as atomised ozonated water technology and nano bubble technology in the flushing system to inhibit bacteria growth and degrade odour molecules, nano plasma driven catalyst air purification and nano confined catalytic oxidation technology to abate odour and improve air quality, microalgae green wall to absorb carbon dioxide for air purification and enhance the aesthetic aspect as well as Smart Toilet System to improve toilet management for assessing their effectiveness. FEHD had also been exploring the application of other new technologies such as the use of antibacterial coating on urinals and waterclosets to inhibit bacterial growth and self-sanitising handles to provide sterilisation on the surface.

2.57 In Audit's view, FEHD needs to continue to explore new toilet facilities and technologies to enhance public toilet services, taking into account FEHD's and counterparts' experiences in provision and maintenance of public toilets.

Audit recommendations

2.58 **Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

- (a) **in collaboration with the Director of Architectural Services, take measures to provide accessible unisex toilets (e.g. under the Public Toilet Refurbishment Programme) as far as practicable;**

- (b) **keep under review the provision of portable toilets with a view to assessing the need for the service and for replacing them with permanent toilets; and**
- (c) **continue to explore new toilet facilities and technologies to enhance public toilet services, taking into account FEHD's and counterparts' experiences in provision and maintenance of public toilets.**

Response from the Government

2.59 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD:

- (a) will collaborate with ArchSD under the Public Toilet Refurbishment Programme to endeavour to provide accessible unisex toilets as far as practicable;
- (b) has embarked on exploring the feasibility of turning those portable toilets with long-term need into permanent toilets, with regard to the utilisation rates of the toilets, technical feasibility of construction works, availability of resources and public support; and
- (c) will continue to explore the application of up-to-date toilet facilities and new technologies, taking into account experiences in provision and maintenance of public toilets to enhance the toilet services.

2.60 The Director of Architectural Services agrees with the audit recommendation in paragraph 2.58(a). She has said that ArchSD will provide assistance and technical advice to FEHD in implementing this recommendation.

PART 3: MANAGEMENT OF PUBLIC TOILET WORKS PROJECTS

3.1 This PART examines actions taken by ArchSD and FEHD in managing public toilet works projects, focusing on:

- (a) construction, reprovisioning and refurbishment projects (paras. 3.2 to 3.17); and
- (b) aqua privy conversion programme (paras. 3.18 to 3.29).

Construction, reprovisioning and refurbishment projects

3.2 FEHD mainly engages ArchSD as its works agent in implementation of public toilet works projects. Since 2000, FEHD and ArchSD have set up a Working Group on Upgrading of Public Toilets (hereinafter referred to as the Working Group — Note 16) which holds frequent discussions on how to optimise FEHD's public toilets to ensure that the design of public toilet facilities can blend well with the surrounding environment and keep up with the times, with a view to making the public toilet facilities hygienic, clean, safe and decent. The Working Group will consider the following matters relating to public toilets:

- (a) planning and implementation of the Public Toilet Refurbishment Programme;
- (b) reviewing the prevailing public toilet standard features prescribed by FEHD in relation to the layout/elevation plan and the colour/material scheme for public toilets under FEHD; and
- (c) application of prevailing public toilet standard features prescribed by FEHD to new construction, refurbishment or reprovisioning projects under FEHD.

Note 16: *The Working Group is chaired by a Deputy Director of FEHD, with members from FEHD and ArchSD.*

3.3 The construction, reprovioning and refurbishment of public toilets are carried out through the following channels:

- (a) for construction and reprovioning of public toilets (including the conversion of some aqua privies not covered by the aqua privy conversion programme mentioned in paras. 3.18 and 3.19), the projects implemented by ArchSD (Note 17) are usually funded under the block vote for minor building works (Head 703 (Buildings), Subhead 3101GX controlled by ArchSD — Note 18) of the Capital Works Reserve Fund, or as Category A projects in the Public Works Programme funded under the Capital Works Reserve Fund (e.g. the aqua privy conversion programme or any district-wide bundled public toilet projects in future); and
- (b) for refurbishment projects under the Public Toilet Refurbishment Programme, they are implemented by ArchSD and funded under the block vote for refurbishment works (Head 703 (Buildings), Subhead 3004GX controlled by ArchSD — Note 19) of the Capital Works Reserve Fund.

3.4 ***Procedures in implementation of public toilet projects.*** For construction or reprovioning of a public toilet implemented by ArchSD, the procedures are, in general, as follows:

- (a) ***Consultation and feasibility study.*** After examining the need for construction or reprovioning of a public toilet (see para. 2.23(a)), FEHD will conduct consultation with local communities and DC Members, and

Note 17: *Construction and reprovioning of public toilets implemented under other departments' projects are funded by the related project votes with works carried out by the related works departments.*

Note 18: *Minor building works (including alterations, additions, improvement works and fitting-out works) are funded under this block vote (Head 703, Subhead 3101GX). The Minor Building Works Committee, chaired by the Director of Architectural Services, is authorised to approve expenditure for individual items not exceeding \$20 million.*

Note 19: *Refurbishment works (including renewing or replacing building elements and facilities to enhance health and hygiene, public safety and security, and upgrading building standards and planned maintenance works) are funded under this block vote (Head 703, Subhead 3004GX). The Director of Architectural Services is authorised to approve expenditure for individual items not exceeding \$30 million.*

Management of public toilet works projects

check the availability of suitable site and apply for land allocation. Upon receiving the proposal with project scope from FEHD, ArchSD will carry out technical feasibility study and preliminary design;

- (b) ***Funding approval.*** After obtaining local support and approval for land allocation and completion of technical feasibility study, FEHD will submit a funding request to the Minor Building Works Committee through ArchSD for the construction or reprovisioning project;
- (c) ***Detailed design.*** After obtaining funding approval, ArchSD will carry out detailed design for the construction or reprovisioning works and seek approval from the Working Group. FEHD will consult local communities and DC Members on the approved project plan and, if necessary, handle land allocation issues; and
- (d) ***Implementation of works and handover.*** After the project plan is finalised, ArchSD will implement the construction or reprovisioning works. After the works are completed, ArchSD will hand over the public toilet to FEHD for public use.

3.5 For refurbishment projects under the Public Toilet Refurbishment Programme, upon determining the list of public toilets and aqua privies to be included in the Refurbishment Programme annually, FEHD will submit a funding request to ArchSD for inclusion in the block vote in annual Estimates for LegCo's approval in the coming financial year for implementation. After obtaining funding approval, the procedures will be the same as those for implementing construction or reprovisioning projects (see para. 3.4(c) and (d)).

3.6 ***Works arrangement for implementation of public toilet projects.*** According to ArchSD, there are different ways to implement public toilet projects. ArchSD has a list of term consultants, term contractors and term design-and-build contractors, which have been engaged through open tender, for implementation of minor building works and refurbishment works. In general, public toilet projects will be implemented as follows:

- (a) ArchSD normally issues assignment letters and works orders to the term consultants and contractors respectively as appropriate for implementation of public toilet projects;

- (b) for public toilet projects designed by consultants, when the construction or refurbishment works are properly specified after detailed design, apart from issuing works orders to the term contractors to carry out the works, ArchSD may also engage contractors for carrying out the works through open tender; and
- (c) for projects assigned to term design-and-build contractors, ArchSD will monitor the design development for meeting various requirements.

ArchSD is responsible for administering consultancy agreements and works contracts (including issuing works orders, monitoring the progress and quality of works, and certifying completion of works).

Scope for improvement in construction and reprovisioning of public toilets

3.7 According to ArchSD, the target works period for construction or reprovisioning of a public toilet is usually nine months (which does not provide any allowance for slippage — Note 20). From 2016-17 to 2018-19, for the construction and reprovisioning of public toilets initiated by FEHD, ArchSD completed construction of two public toilets (involving project cost of \$14.9 million) and reprovisioning of five public toilets (involving project cost of \$20.7 million) (see Note 5 to para. 1.12). For the two new public toilet projects, they were completed about 1 month and 9 months later than their respective original target completion dates (Note 21). For the five public toilet reprovisioning projects, they were carried out by

Note 20: *According to ArchSD: (a) there are various causes for a construction contract or works order to be completed beyond the target completion date stated in the contract or works order. Some causes (e.g. inclement weather or disruption due to local issues) are outside the control of the contractor and extensions of time will be granted to the contractor; (b) for proper contract management, the target completion date in a contract or works order will not include allowance for such extensions of time; and (c) these events are common in construction and therefore contracts completed beyond the original target completion dates due to the encountering of such events cannot be regarded as delay.*

Note 21: *According to ArchSD, after assessment of all extensions of time (see Note 20) entitled by the contractors, one of the two new public toilet projects was completed within the extended completion date and the remaining new project was completed 4 months later than the extended completion date.*

Management of public toilet works projects

the same term contractor and were completed about 7 to 11 months later than their respective original target completion dates (Note 22). Audit noted that there was scope for improvement in management of a public toilet reprovisioning project which was completed 11 months later than the original target completion date (see Case 1).

Case 1

Delay in completing the works for reprovisioning a public toilet (May 2012 to October 2019)

1. In May 2012, FEHD conducted local consultation for reprovisioning of a public toilet in the North District (Toilet F — Note) and no adverse comment was received. In October 2013, land allocation of a new site for reprovisioning of Toilet F was approved. In January 2015, the funding request for reprovisioning of Toilet F was approved. In August 2015, ArchSD engaged a consultant (Consultant X) for works design and contract administration.

2. In July 2016, ArchSD planned to issue a works order to a contractor (Contractor A) for implementation of the reprovisioning works of Toilet F with commencement date in the same month (target to be completed in 9-month period by April 2017). However, due to shortage of labour resources of Contractor A, ArchSD finally issued a works order of \$4.7 million to Contractor A with commencement date in October 2016 and target completion date in July 2017. In November 2016 and February 2017, ArchSD issued two letters to Contractor A expressing concern on slow progress of works.

3. In March 2017, in response to an objection received from a village representative stating that the new Toilet F would cause “Fung Shui” problem, the construction works were suspended. After several rounds of discussion with the village representative and villagers, FEHD agreed to conduct enhanced beautification works at Toilet F, and the construction works resumed in June 2017.

Note 22: *According to ArchSD, after assessment of all extensions of time entitled by the contractor for three of the five public toilet reprovisioning projects, the three public toilets were completed 5 to 10 months later than their respective extended completion dates. As of September 2019, extension of time assessment for the remaining two public toilet reprovisioning projects was still in progress and the delay period was yet to be ascertained.*

Case 1 (Cont'd)

4. Between February and June 2018, Consultant X issued four warning letters to Contractor A for unsatisfactory performance, including applying uncertified structural materials, site progress slippage, inadequate resources and unsatisfactory management and coordination.

5. In June 2018, after receiving Contractor A's undertaking to carry out the outstanding works for Toilet F (including 21 items of defective or outstanding works, such as defective wall partition and outstanding testing and commissioning works of electrical system), ArchSD certified that the works were substantially completed. In August 2018, Consultant X issued two warning letters to Contractor A for slow progress in completing certain critical outstanding items (e.g. water quality test). In the same month, ArchSD issued a warning letter to Contractor A for slow progress in completing the critical outstanding items for Toilet F.

6. In September 2018, the new Toilet F was handed over to FEHD. However, the villagers objected to the opening of the toilet until completion of beautification works. In December 2018, the scope of the beautification works (e.g. fence wall and greening) was finalised. In January 2019, ArchSD issued a works order of \$370,000 to another contractor for the beautification works (at location outside the toilet). The beautification works were substantially completed in May 2019 and handed over to FEHD in July 2019. Toilet F has been opened for public use since 11 October 2019.

7. In September and October 2019, ArchSD and FEHD informed Audit of the following:

- (a) **ArchSD.** The works were targeted to be completed in July 2017 and were eventually completed in June 2018, which involved a period of 334 days (about 11 months) comprising: (i) 95 days (3.1 months) of works suspension due to villagers' objection; (ii) 9 days (0.3 month) due to inclement weather; and (iii) 230 days (7.6 months) of delay due to unsatisfactory performance of Contractor A, which had been reflected in the contractor's performance reports; and
- (b) **FEHD.** As time was required for liaising with ArchSD and village representatives on the delivery of the beautification works, the opening of Toilet F for public use could only take effect from 11 October 2019.

Case 1 (Cont'd)

Audit comments

8. While the construction works for the new Toilet F were targeted to be completed in July 2017 (see para. 2), the toilet was eventually opened in October 2019. Audit noted a delay of about 8 months in completing the construction works due to unsatisfactory performance and slow progress of Contractor A (see paras. 4, 5 and 7(a)). Inadequate resource was one of the contributory factors for Contractor A's unsatisfactory performance. In Audit's view, ArchSD needs to closely monitor to ensure that adequate resources are deployed by term contractors to carry out public toilet works projects.

Source: Audit analysis of ArchSD and FEHD records

Note: The reprovisioning included demolition of an aqua privy (which was excluded from the aqua privy conversion programme as the concerned villagers objected to the proposed in-situ conversion and proposed relocation of the aqua privy to another site) and construction of a new flushing toilet at a new site.

Long time taken in completing refurbishment works of some public toilets

3.8 FEHD conducted reviews in 2016 and 2018 on the workflow of the Public Toilet Refurbishment Programme with a view to expediting the completion of projects. Based on the reviews conducted, the overall timeline for taking forward a refurbishment project was about 4 to 5 years, comprising:

- (a) 1 year from recommending inclusion of a public toilet in the Refurbishment Programme to obtaining funding approval of relevant block vote in annual Estimates by LegCo in the coming financial year for implementation;
- (b) 2 to 3 years for detailed design, including designing the toilet layout and seeking approval from the Working Group, conducting local consultation and handling land allocation issues; and
- (c) 1 year for implementing the construction works.

According to FEHD, the timeline was a rough estimation based on experience for reference of members of the Working Group.

3.9 As shown in Table 6, as of August 2019:

- (a) for 160 public toilets included in the Public Toilet Refurbishment Programmes between 2011-12 and 2018-19 (Note 23) after obtaining funding approval, 58 (36%) were under design, 26 (16%) with works in progress, 68 (43%) completed and 8 (5%) withdrawn from the Programmes; and
- (b) of the 84 (i.e. 58 under design + 26 with works in progress) public toilets with works not yet completed, 44 (i.e. 25 under design + 19 with works in progress) toilets had been included in the Refurbishment Programmes between 2011-12 and 2015-16 for about four to eight years after obtaining funding approval.

Audit examined a public toilet project with works still in progress for eight years after inclusion in the Refurbishment Programme in 2011-12, and found that there was room for improvement in implementing the refurbishment works (see Case 2).

Note 23: *As of August 2019, the refurbishment projects prior to the 2011-12 Refurbishment Programme were completed.*

Management of public toilet works projects

Table 6

**Progress of works for public toilets included in
Public Toilet Refurbishment Programme
(August 2019)**

Year of Refurbishment Programme	Number of public toilets				Total number of public toilets included in Refurbishment Programme (e) = (a) + (b) + (c) + (d)
	With works under design (Note 1)	With works in progress (Note 2)	With works completed (c)	Withdrawn from the Programme (Note 3) (d)	
	(a)	(b)	(c)	(d)	
2011-12	1	3	23	1	28
2012-13	1	2	24	4	31
2013-14	25 { 8	19 { 7	15	—	30
2014-15	6	2	4	2	14
2015-16	9	5	—	1	15
2016-17	13	5	2	—	20
2017-18	5	2	—	—	7
2018-19	15	—	—	—	15
Total	58 (36%)	26 (16%)	68 (43%)	8 (5%)	160 (100%)

Source: ArchSD and FEHD records

Note 1: According to ArchSD, the public toilets with works under design included those at tender stage.

Note 2: According to ArchSD, the public toilets with works in progress included those awaiting site possession to commence works.

Note 3: According to ArchSD, the public toilets were withdrawn from the Refurbishment Programme due to various reasons, such as objections received or the toilets going to be demolished.

Case 2

Long time taken in refurbishing a public toilet (January 2011 to October 2019)

1. In January 2011, ArchSD approved funding for refurbishing a public toilet in Yuen Long (Toilet G) in the 2011-12 Public Toilet Refurbishment Programme. In August 2012, the layout plan for Toilet G was completed and approved by the Working Group, which included provision of an accessible unisex toilet. In July 2013 and January 2014, local consultation was conducted on refurbishment of Toilet G and no adverse comment was received. In February 2014, land allocation for Toilet G (including additional area for accessible unisex toilet) was approved.

2. In July 2014, when ArchSD planned to commence the refurbishment works at Toilet G, FEHD received local objections requesting refurbishment works to be carried out without extending the toilet block for accessible unisex toilet. In November 2014, ArchSD engaged a consultant (Consultant Y) to revise the layout plan without accessible unisex toilet. In April 2015, Consultant Y informed ArchSD that the refurbishment scheme for Toilet G was structurally feasible based on available information and visual inspection.

3. In October 2015, the Working Group approved the revised design (i.e. without accessible unisex toilet) after considering the local objections and that the accessible unisex toilet might impose adverse impacts on the manoeuvring of desludging vehicle (as the open space for parking might be reduced).

4. In May and July 2016, when seeking local views on the approved revised design, local residents and a DC Member requested a bio-treatment plant (for treating waste by a biological process and recirculating the treated effluent for flushing purpose) to be installed at Toilet G. ArchSD advised that installation of the bio-treatment plant was beyond the ambit of the Refurbishment Programme (which involved refinishing and renewal works to the existing facilities), and FEHD needed to submit funding request under minor building works. Between July 2016 and November 2017, ArchSD liaised with FEHD and followed up with Consultant Y to explore the feasibility of installing the bio-treatment plant. In November 2017, FEHD noted that the DC Member no longer insisted on installing the bio-treatment plant in Toilet G.

Case 2 (Cont'd)

5. In January 2018, FEHD informed ArchSD to proceed with the refurbishment works of Toilet G based on the revised design approved in October 2015 (see para. 3). In August 2018, ArchSD awarded a works contract of \$1.97 million to a contractor by open tender (Contractor B) for the refurbishment works, and the works commenced in the same month with target completion date in February 2019.

6. In September 2018, Contractor B notified ArchSD that the structural brick walls of Toilet G were in poor condition after removal of finishes and rendering, and the works had to be suspended due to safety concern. Consultant Y recommended replacing the defective bricks to rectify the existing unsatisfactory condition. In April 2019, ArchSD accepted Consultant Y's recommendation but considered that the quotation of Contractor B for replacing the defective bricks of structural brick walls at \$1.35 million was exceptionally high, and decided to terminate the contract and assign another contractor to carry out the remaining works. Contractor B was paid an amount of \$0.3 million for the works carried out when the contract was terminated.

7. In May 2019, ArchSD issued a works order of \$1.5 million to another contractor for carrying out the remaining refurbishment works for Toilet G, with revised target completion date of November 2019.

8. In September and October 2019, ArchSD and FEHD informed Audit of the following:

- (a) **ArchSD.** It took about seven years (from January 2011 to January 2018) to work out the design due to various factors beyond ArchSD's control including land allocation/acquisition and ad hoc requests arising from several local consultations. In addition, ArchSD had to engage another contractor to continue the works in May 2019 in order to avoid the excessive variation cost claimed by Contractor B; and
- (b) **FEHD.** From January 2011 to January 2018, ArchSD and FEHD had worked out the design which could finally address all concerns raised by different stakeholders throughout the period and resolve local objections for implementation of refurbishment works. For the delay in refurbishment works due to some unexpected structural safety concerns relating to the poor brick wall condition of Toilet G, the deferment of the project in addressing the structural safety concerns was inevitable and considered necessary to ensure safety. The delay in completion of Toilet G was an isolated case.

Case 2 (Cont'd)

Audit comments

9. As of October 2019, refurbishment works for Toilet G had not yet been completed (i.e. eight years after funding was approved in January 2011). Audit noted that, in April 2015, Consultant Y informed ArchSD that the refurbishment scheme of Toilet G was structurally feasible based on available information and visual inspection (see para. 2). However, in September 2018, the refurbishment works needed to be suspended due to structural integrity concern arising from the poor conditions of structural brick walls after removal of finishes and rendering (see para. 6). In the event, ArchSD had to engage another contractor to continue the works in May 2019 with revised target completion date of November 2019 (see para. 7).

10. In Audit's view:

- (a) ArchSD needs to take measures to complete public toilet works projects as soon as practicable, including assessment of the latest conditions of structural brick walls of public toilets under refurbishment; and
- (b) FEHD needs to, in collaboration with ArchSD, expedite actions in opening Toilet G for public use.

Source: Audit analysis of ArchSD and FEHD records

3.10 In April 2019, FEHD informed LegCo Panel on Food Safety and Environmental Hygiene that:

- (a) the overall timeline for refurbishment took about 2 to 3 years, while the whole process for facelifting works required about 1 to 1.5 years; and
- (b) the actual time required to complete a refurbishment project depended on its complexity, including the site conditions, site area, location, design, land allocation and views of the local community.

Management of public toilet works projects

3.11 During August to October 2019, FEHD and ArchSD informed Audit of the following:

- (a) **FEHD.** The timeline for taking forward a standard refurbishment project would be expedited (from about 4 to 5 years — see para. 3.8) to 2 to 3 years due to the concerted efforts by ArchSD and FEHD in implementing improvement measures. The expedited timeline would be applied to the projects under the Enhanced Public Toilet Refurbishment Programme from 2019-20 onwards. The timeline for taking forward a facelifting project would be about 1 to 1.5 years. Occasionally, some incidents might happen and interrupt the progress of refurbishment projects which were beyond the control of FEHD; and
- (b) **ArchSD.** Subject to smooth local consultation, necessary land acquisition and no unforeseeable site constraints, ArchSD would provide technical support to and work closely with FEHD with a view to meeting the timeline for taking forward refurbishment projects under the Public Toilet Refurbishment Programme.

3.12 Audit noted that, as of August 2019, some public toilets had been included in the Public Toilet Refurbishment Programme for a long time but works were still not completed (see para. 3.9). Audit welcomes the efforts of FEHD and ArchSD to expedite the timeline in taking forward a refurbishment project from 2019-20 Refurbishment Programme onwards (see para. 3.11). In Audit's view, FEHD and ArchSD need to endeavour to take forward refurbishment projects under the Public Toilet Refurbishment Programme in a timely manner.

Audit recommendations

3.13 Audit has *recommended* that the Director of Architectural Services should:

- (a) **closely monitor to ensure that adequate resources are deployed by term contractors to carry out public toilet works projects; and**

- (b) take measures to complete public toilet works projects as soon as practicable, including assessment of the latest conditions of structural brick walls of public toilets under refurbishment.

3.14 Audit has *recommended* that the Director of Food and Environmental Hygiene should, in collaboration with the Director of Architectural Services, expedite actions in opening Toilet G for public use.

3.15 Audit has *recommended* that the Director of Food and Environmental Hygiene and the Director of Architectural Services should endeavour to take forward refurbishment projects under the Public Toilet Refurbishment Programme in a timely manner.

Response from the Government

3.16 The Director of Architectural Services agrees with the audit recommendations in paragraphs 3.13 to 3.15. She has said that ArchSD will:

- (a) monitor the adequacy of resources deployed by the term contractor in carrying out public toilet projects;
- (b) when conducting feasibility studies on public toilet refurbishment projects, verify the presence of structural brick walls and assess their conditions before proceeding with the refurbishment works on site;
- (c) closely monitor and supervise the consultants and contractors for timely completion of works for Toilet G; and
- (d) provide technical support to and work closely with FEHD with a view to meeting the timeline for taking forward refurbishment projects under the Public Toilet Refurbishment Programme.

3.17 The Director of Food and Environmental Hygiene generally agrees with the audit recommendations in paragraphs 3.14 and 3.15.

Aqua privy conversion programme

3.18 Aqua privy is a village-type dry latrine without any flushing system. The absence of a flushing system may create hygiene, pest and odour problems. To meet the rising expectation of the public over the standard of public toilet facilities, from February 2005 to November 2014, FEHD implemented a programme to convert aqua privies in the New Territories and outlying islands into flushing toilets by seven phases. The initiative was included in the Policy Agenda in 2007-08, with the target of converting all aqua privies into flushing toilets in phases by 2012-13.

3.19 The aqua privy conversion programme was funded under Category A projects in the Public Works Programme. ArchSD, as FEHD's works agent, engaged term contractors for carrying out the conversion works and was responsible for administering the term contracts (including issuing works orders, monitoring the progress and quality of works, and certifying completion of works). Table 7 shows the implementation of the conversion programme. The salient points are as follows:

- (a) **Completion of works.** The works for the seven phases (Phase 2 included 2A and 2B) of aqua privy conversion programme were completed between March 2007 and November 2014. Except for Phases 1, 2A and 7, the works for other phases were completed by their target completion dates. For Phases 1, 2A and 7, the works were completed about 3 months (Phases 1 and 2A) and 11 months (Phase 7) later than their target completion dates;
- (b) **Aqua privies converted.** FEHD targeted to convert 465 aqua privies under the conversion programme. In the event, a total of 441 aqua privies were converted into flushing toilets and 11 aqua privies not converted (due to site constraints) were in-situ refurbished; and
- (c) **Expenditure.** The total expenditure incurred was \$740.2 million. The actual expenditures for all phases, except Phase 1, were within the approved funding. According to ArchSD, for Phase 1, the excess in expenditure of \$0.5 million (or 2%) was due to contract-price fluctuation.

Management of public toilet works projects

Table 7

Implementation of aqua privy conversion programme

Phase	Works commencement date	Target completion date	Actual completion date	Approved funding (Note 1) (\$ million)	Actual expenditure (\$ million)	Target no. of aqua privies to be converted (Note 1)	Actual no. of aqua privies converted
1	2/2005	12/2006	3/2007	26.6	27.1	30	30
2A	7/2005	3/2007 (Note 2)	6/2007	30.1	22.8	40	39
2B	1/2006	12/2007	12/2007	36.1	22.5	30	28
3	11/2007	5/2009	5/2009	66.0	52.4	30	30
4	11/2007	5/2009	5/2009	42.6	35.6	20	20
5	11/2008	6/2010	5/2010	189.6	134.3	80	80
6	11/2009	6/2011	6/2011	221.1	178.7	90	90
7	2/2011	12/2013	11/2014	383.3	266.8	145	124 (Note 3)
Total				995.4	740.2	465	441

Source: FEHD and ArchSD records

Note 1: The approved funding was funded under Category A projects in the Public Works Programme as approved by the Finance Committee of LegCo. The target number of aqua privies to be converted referred to those stated in the related papers seeking funding approval.

Note 2: According to a funding paper submitted to LegCo for approval, the target completion date was in early 2007.

Note 3: Under Phase 7 of the conversion programme, in addition to 124 aqua privies converted into flushing toilets, 11 aqua privies not converted (due to site constraints such as lack of water supply) were in-situ refurbished.

Long time taken in converting some aqua privies into flushing toilets

3.20 For the seven phases of aqua privy conversion programme, the works for Phases 1, 2A and 7 were completed about 3 months (Phases 1 and 2A) and 11 months

Management of public toilet works projects

(Phase 7) later than their target completion dates. For Phase 7 of the conversion programme (i.e. longest among the three phases completed later than their target completion dates — Note 24), ArchSD had issued 135 works orders for carrying out conversion works for 124 aqua privies and in-situ refurbishment works for 11 aqua privies. Audit examination revealed that, of the 135 works orders, the actual completion dates for 119 (88%) works orders were later than their respective original target completion dates specified in the works orders (see Table 8). In September 2019, ArchSD informed Audit that after consideration of the extensions of time granted (e.g. due to inclement weather or other events outside the contractor's control), there was delay in only 23 (17% of 135) works orders (with liquidated damages imposed).

Table 8

**Comparison of target and actual completion dates of works orders
under Phase 7 of aqua privy conversion programme**

Number of months later than target completion date	Number of works orders
No delay	16 (12%)
3 months or less	87 (64%)
More than 3 to 6 months	24 (18%)
More than 6 to 9 months	2 (2%)
More than 9 to 12 months	3 (2%)
More than 12 to 15 months	3 (2%)
Total	135 (100%)

Source: Audit analysis of ArchSD records

3.21 In Audit's view, in implementing the conversion works of aqua privies, ArchSD needs to monitor the works progress and endeavour to complete the works as soon as practicable.

Note 24: *According to FEHD, Phase 7 was the last phase of the aqua privy conversion programme which involved the largest number of aqua privies, and the most difficult cases were left to this phase because of land, technical, local objection or other issues to be resolved.*

*Scope for improvement in
planning of water connection works*

3.22 Audit noted a case (Case 3) showing that there was scope for improving the planning of water connection works for converting an aqua privy into a flushing toilet.

Case 3

**Room for improvement in planning of water connection works
for converting an aqua privy into a flushing toilet
(March 2012 to October 2019)**

1. In March 2012, ArchSD issued a works order to a contractor (Contractor C) for conversion of an aqua privy in Cheung Chau into a flushing toilet (Toilet H) under the conversion programme. In August 2012, the Water Supplies Department (WSD) approved Contractor C's design proposal to install a new water main for the supply of fresh water for general ablution, cleansing and flushing purposes (with three water meters) to Toilet H. WSD also requested ArchSD to undertake the design and laying of the water main outside the lot boundary of Toilet H as entrusted works.
2. In February 2013, after receiving Contractor C's undertaking to carry out the water connection works for the new water main to Toilet H, ArchSD certified that the conversion works were substantially completed. The flushing water supply to Toilet H was connected from the existing water main (mainly for hand washing) previously serving the aqua privy. In April 2013, Toilet H was handed over to FEHD for public use.
3. In August 2013, ArchSD submitted drawings to WSD showing the proposed alignment of new water main. In the same month, WSD conducted an inspection and found that the plumbing works were completed generally in order. In October 2013, WSD approved the proposed alignment for the new water main. However, the proposed alignment of the water main was later considered not feasible due to land and substantial geotechnical issues.
4. In September 2014, Contractor C submitted a revised alignment of the water main which was approved by WSD in October 2014. According to ArchSD, the proposed alignment was later also found not feasible due to the underlying geotechnical problems. In September 2015, Contractor C submitted a proposal of plumbing installation works due to change in layout of Toilet H and the proposal was approved by WSD in November 2015.

Case 3 (Cont'd)

5. In March and July 2016, WSD requested Contractor C, ArchSD and FEHD to complete the new water main and report completion of plumbing installation works in Toilet H. In September 2016, as requested by ArchSD, FEHD informed WSD that it decided to cancel the application of the new water main connection. WSD had no objection to the cancellation.

6. In January 2017, Contractor C submitted a new application to WSD for flushing water supply connection from the existing water main for approval. In February 2017, WSD carried out an inspection at Toilet H and found that the source of water supply for flushing was an extension from the existing potable water main to the flushing system instead of adopting the proposal approved in November 2015 (see para. 4) and hence considered as not conforming to the Waterworks Ordinance (Cap. 102 — Note). WSD requested FEHD to rectify the non-conformance.

7. In September 2017, WSD informed Contractor C that WSD had no objection to its proposal for flushing water supply for Toilet H, including flushing water supply to be branched off from the existing potable water main and provision of a meter to the existing water main for flushing purpose. In February 2018, Contractor C completed the related works and the water supply for flushing was then authorised by WSD.

8. In September and October 2019, ArchSD informed Audit that:

- (a) as a temporary measure to facilitate earliest opening of Toilet H for public use, the flushing water supply to the toilet was connected from the existing water main previously serving the aqua privy;
- (b) during 2013 to 2016, FEHD, ArchSD and Contractor C had explored different alignments for the water main connection but all alignments were eventually found not feasible. Upon confirmation that the new water main connection could not be made, FEHD, ArchSD and Contractor C had proactively negotiated with WSD to call off the originally proposed new water main connection and re-submit a formal application to adopt the as-fitted temporary flushing water supply connection from the existing water main as the permanent water main connection;

Case 3 (Cont'd)

- (c) when the construction works of Toilet H were completed in 2013, adequate measures (i.e. provision of flushing water tank) were already provided to separate the flushing water supply system from the fresh water supply system to prevent contaminations; and
- (d) in February 2018, WSD inspected and authorised the water supply for flushing upon receipt of all the related documents and minor modification at the connection point from Contractor C. The plumbing works made for flushing water supply when Toilet H was completed in 2013 did in fact comply with the Waterworks Ordinance from technical point of view while the procedural non-compliance lasted for nearly five years (counting from opening of the toilet in April 2013 to authorisation of flushing water supply in February 2018).

Audit comments

9. Toilet H had not fully conformed to the Waterworks Ordinance since its opening in April 2013 and up to the completion of the modification works in February 2018 (i.e. nearly five years — see paras. 2 and 6 to 8). In Audit's view, in implementing public toilet works projects, ArchSD needs to take measures to enhance the planning of water main connection works and ensure that the requirements of the Waterworks Ordinance are complied with.

Source: Audit analysis of ArchSD, FEHD and WSD records

Note: According to the Waterworks Regulation (Cap. 102A) under the Waterworks Ordinance, application shall be made to the Water Authority (i.e. the Director of Water Supplies) for construction, installation, alteration or removal of an inside service (which includes pipes and fittings in premises, and those between premises and those connecting to the public mains). According to the Waterworks Ordinance, WSD may disconnect an inside service if it is satisfied that waste, misuse or pollution of the supply has occurred or is likely to occur.

Need to convert aqua privies into flushing toilets as soon as practicable

3.23 As announced in the Policy Agenda in 2007-08, the target of converting all aqua privies into flushing toilets was by 2012-13 (see para. 3.18). However, there were still 51 aqua privies as of June 2019. According to FEHD, the reasons for not converting the 51 aqua privies under the conversion programme (which was completed in 2014) were as follows:

- (a) for 17 (33%) aqua privies, conversion would result in encroachment upon private lot;
- (b) for 15 (29%) aqua privies, there were constraints for the conversion (e.g. lack of water supply and geographical limitation);
- (c) for 8 (16%) aqua privies, local objections were received for the conversion;
- (d) for 5 (10%) aqua privies, the conversion works were affected by other public or private projects; and
- (e) the remaining 6 (12%) aqua privies would be demolished.

3.24 Audit noted that, in November 2011, FEHD informed LegCo Panel on Food Safety and Environmental Hygiene that, although some aqua privies were not included in the conversion programme, FEHD had, on the premise of enhancing environmental hygiene, been actively exploring suitable follow-up options, including proposals for conversion of individual aqua privies into flushing toilets, in-situ refurbishment, demolition or reprovisioning. In September and October 2019, FEHD and ArchSD informed Audit of the following:

FEHD

- (a) the progress of the conversion works for 45 aqua privies (excluding the 6 aqua privies to be demolished (see para. 3.23 (e)) was as follows:
 - (i) for 13 (29%) aqua privies, conversion works were under study by FEHD;

- (ii) for 11 (24%) aqua privies, FEHD had been conducting local consultation and checking the availability of suitable site for conversion works;
 - (iii) for 7 (16%) aqua privies, the conversion works were planned or in progress;
 - (iv) for 2 (4%) aqua privies, they would be reprovisioned into flushing toilets under public or private development; and
 - (v) the remaining 12 (27%) aqua privies had been planned for demolition;
- (b) to improve the hygiene condition of the aqua privies, FEHD had applied Microbiological Odour Arresting Agent in the aqua privies to control odour problem. Moreover, contractors and FEHD in-house staff would conduct routine and ad hoc cleansing operations at the aqua privies to ensure that their hygiene conditions were satisfactory. The above remedial measures had effectively reduced hygiene, pest and odour problems of aqua privies and very few related complaints were received from January 2016 to April 2019; and

ArchSD

- (c) ArchSD would provide technical support to FEHD in expediting actions in converting aqua privies into flushing toilets as far as practicable.

3.25 In Audit's view, in order to meet the rising expectation of the public over the standard of public toilet facilities, FEHD needs to, in collaboration with ArchSD, expedite actions in converting aqua privies into flushing toilets as far as practicable.

Audit recommendations

3.26 Audit has *recommended* that the Director of Architectural Services should:

- (a) in implementing the conversion works of aqua privies, monitor the works progress and endeavour to complete the works as soon as practicable; and
- (b) in implementing public toilet works projects, take measures to enhance the planning of water main connection works and ensure that the requirements of the Waterworks Ordinance are complied with.

3.27 Audit has *recommended* that the Director of Food and Environmental Hygiene should, in collaboration with the Director of Architectural Services, expedite actions in converting aqua privies into flushing toilets as far as practicable.

Response from the Government

3.28 The Director of Architectural Services agrees with the audit recommendations in paragraphs 3.26 and 3.27. She has said that ArchSD will:

- (a) when handling the conversion works of aqua privies, monitor the works progress and endeavour to complete the works as soon as practicable according to programme;
- (b) when handling public toilet works projects, enhance the planning of water main connection works and ensure that the requirements of the Waterworks Ordinance are complied with; and
- (c) provide technical support to FEHD in expediting actions in converting aqua privies into flushing toilets as far as practicable.

3.29 The Director of Food and Environmental Hygiene generally agrees with the audit recommendation in paragraph 3.27. She has said that:

- (a) FEHD and ArchSD had successfully completed the conversion works of 452 (441 aqua privies converted to flushing toilets and 11 aqua privies in-situ refurbished) out of 465 aqua privies under the conversion programme and another 18 aqua privies which were not covered by the conversion programme (see para. 3.3(a)); and
- (b) for the remaining aqua privies, they are the most difficult cases with complications in terms of local objections, site or technical constraints. FEHD will continue to take a positive and proactive approach and work closely with concerned parties and stakeholders to tackle these vexing problems.

PART 4: MANAGEMENT OF PUBLIC TOILETS

- 4.1 This PART examines FEHD's management of public toilets, focusing on:
- (a) monitoring of cleanliness and conditions of facilities in public toilets (paras. 4.2 to 4.33);
 - (b) working arrangements and facilities for outsourced workers performing cleansing duties in public toilets (paras. 4.34 to 4.44);
 - (c) handling of complaints on public toilets (paras. 4.45 to 4.54); and
 - (d) publicity work (paras. 4.55 to 4.63).

Monitoring of cleanliness and conditions of facilities in public toilets

4.2 FEHD has 19 DEHOs for monitoring and management of district environmental hygiene services and facilities in the 18 districts (see Note 10 to para. 1.19(b)), including public toilets and aqua privies. As of June 2019, FEHD managed 798 public toilets over the territory (see Appendix B for the number of public toilets in the 18 districts) and 51 aqua privies in the New Territories and on outlying islands. Of the 798 public toilets and 51 aqua privies, the cleansing services of:

- (a) 625 (78% of 798) public toilets and 31 (61% of 51) aqua privies were outsourced to contractors under the related contracts for street cleansing services (Note 25); and
- (b) 173 (22% of 798) public toilets and 20 (39% of 51) aqua privies were provided by FEHD in-house cleansing workmen.

Note 25: *As of April 2019, FEHD had outsourced the cleansing services of the public toilets and aqua privies to contractors under 34 contracts for street cleansing services (for a 2-year period) at a total cost of about \$2,584 million.*

4.3 According to FEHD, the cleansing frequency of public toilets and aqua privies depends on the public demand and usage of the toilets. Generally speaking, toilet attendant services are provided in public toilets with high utilisation rates or at tourist spots. As of June 2019, 264 (33%) of the 798 public toilets were provided with attendant services. For public toilets with attendant services, cleansing services are provided continuously during duty hours, while other public toilets and aqua privies are cleansed at least twice a day. Furthermore, to address the rising concerns and complaints on poor hygiene condition of public toilets with very high utilisation rates (particularly those at tourist spots), FEHD had selected 83 public toilets as target public toilets for service enhancement in September 2018 (revised to 94 toilets in May 2019), including enhanced inspection and provision of additional deep cleansing services.

4.4 ***Cleansing services by contractors.*** According to FEHD, regarding the cleansing services provided by contractors for public toilets (including aqua privies):

- (a) the contractor is required to deploy staff to keep public toilets clean and hygienic, replenish toilet supplies (including toilet paper and soap), report damages of facilities and carry out minor repair and maintenance works (see Appendix C for a list of minor repair and maintenance works under the responsibility of cleansing contractors based on the contracts);
- (b) the level of cleanliness for public toilets are classified into Grade A (i.e. free of dirt and dust), Grade B (i.e. predominantly free of dirt and dust) and Grade C (i.e. widespread distribution of dirt and dust) under the contracts. Upon detection of level of cleanliness fallen to Grade B or C by FEHD staff, the contractor needs to re-perform the toilet cleansing services to attain Grade A within a specified time (e.g. within 30 minutes from Grade B to Grade A for toilets with toilet attendant services); and
- (c) in the event of any irregularities, defaults or non-compliance with contract provisions in the delivery of public cleansing services, FEHD will take follow-up actions, including issuance of verbal and written warnings and default notices (Note 26). For each default notice issued, the contractor

Note 26: *According to FEHD: (a) in 2018, it had issued 2,567 verbal warnings, 81 written warnings and 1,241 default notices to street cleansing contractors; and (b) it had not maintained breakdown of these warnings and notices specific to public toilet and aqua privy services.*

Management of public toilets

will need to pay an amount specified in contract as liquidated damages to FEHD.

4.5 ***Cleansing services by in-house staff.*** According to FEHD, in providing cleansing services, the in-house cleansing workmen need to keep public toilets (including aqua privies) clean and hygienic, replenish consumables (e.g. toilet paper and soap) after each cleansing and report any defect to the relevant maintenance agents (mainly ArchSD — Note 27) for replacement or maintenance.

4.6 ***Monitoring of cleansing services by contractors.*** To monitor the performance of contractors, FEHD staff periodically conduct inspections of conditions of hygiene, cleanliness and facilities of the public toilets, as follows:

(a) ***Routine inspection.*** According to FEHD guidelines, DEHO Foreman grade staff are required to conduct inspections on public toilets and timely input the inspection results into mobile devices on site and upload the related records into a computer system (see para. 4.8) within 24 hours from the time of inspections. The frequency of inspections depends on the toilet location and availability of toilet attendant services, as follows:

(i) DEHO Foreman grade staff should inspect:

- public toilets with attendant services at least once every work shift (Note 28);
- public toilets without attendant services and aqua privies in populated areas at least once every other day; and
- aqua privies in non-populated areas at least once every 10 days (Note 29); and

Note 27: *According to FEHD, in 2018, around 74% of the defect requests were referred to ArchSD and the remaining defect requests were mainly referred to the Electrical and Mechanical Services Department.*

Note 28: *According to FEHD, DEHO Foreman grade staff usually have two shifts (i.e. day and evening shifts) with 7-day work per week.*

Note 29: *According to FEHD, as of June 2019, the 51 aqua privies were generally located in non-populated areas in the New Territories and on outlying islands.*

- (ii) for facilities in remote area, DEHO Senior Health Inspectors can exercise discretion to determine the most suitable minimum inspection frequency;
- (b) ***Supervisory check.*** DEHO Health Inspector grade staff will conduct surprise supervisory check (6-week inspection cycle for Health Inspector and 3-month inspection cycle for Senior Health Inspector) on public toilets inspected by their subordinates, and all related inspection details (including date, time and observations) are recorded in a standard inspection form; and
- (c) ***Quality assurance inspection.*** FEHD's Quality Assurance Section will conduct a quality assurance inspection every two years on the services delivered by DEHOs, including toilet cleansing services and related inspections.

4.7 ***Monitoring of cleansing services by in-house staff.*** For public toilets (including aqua privies) with cleansing services provided by in-house cleansing workmen, according to FEHD guidelines, DEHO Foreman grade staff are responsible for carrying out daily and weekly inspections for monitoring in-house cleansing of public toilets and aqua privies located in their responsible areas respectively. DEHO Foreman grade staff should properly record all inspection details (including date, time and observations) in a standard inspection form daily and submit to their supervisors. The supervisory check and quality assurance inspection are the same as those for monitoring performance of contractors (see para. 4.6 (b) and (c)).

Scope for improvement in conducting inspections of cleansing services and documenting inspection results

4.8 FEHD has maintained a computer system (i.e. Contract Management System (CMS)) to record the routine inspection results, written warnings and default notices issued to contractors to facilitate its daily operation and monitoring of contractors' performance. According to FEHD guidelines, for public toilets with cleansing services provided by contractors, results of routine inspections (including irregularities) should be recorded in CMS. According to FEHD:

Management of public toilets

- (a) for public toilets with attendant services, the inspection officers should input the inspection results on a specific toilet inspection report in CMS, which records the inspection results (satisfactory or unsatisfactory) on performance of contractors and toilet conditions (e.g. cleanliness of toilet compartments, urinals and wash hand basins, replenishment of toilet supplies, and minor repair and maintenance works by contractors) for each toilet; and
- (b) for public toilets without attendant services, the inspection officers should input the inspection results on a street cleansing services inspection report in CMS, which records the overall inspection results (satisfactory or unsatisfactory) in respect of contractors' performance on various services (including an item for public toilets) under the contracts for street cleansing services (which also include, for example, street cleansing and household waste collection — see para. 1.18) for a defined area of a district.

4.9 To evaluate FEHD's monitoring of cleansing services and facilities of public toilets, Audit selected four DEHOs (i.e. Central/Western DEHO, Mong Kok DEHO, Yau Tsim DEHO and Yuen Long DEHO — Note 30) to examine their inspection records for the public toilets from January 2018 to June 2019. Except Yuen Long DEHO which managed public toilets and aqua privies with cleansing services provided by contractors (for 127 toilets and 8 aqua privies) and in-house cleansing workmen (for 56 toilets and 7 aqua privies), the other three DEHOs managed public toilets with cleansing services provided by contractors only. Audit noted room for improvement in conducting inspections and recording inspection results, as follows:

Note 30: *The four DEHOs managed public toilets in districts with the highest number of public toilets on Hong Kong Island, Kowloon and New Territories respectively (i.e. Central/Western District, Yau Tsim Mong District (by both Yau Tsim DEHO and Mong Kok DEHO) and Yuen Long District — see Appendix B). Audit also conducted site visits to selected public toilets managed by the four DEHOs in May and June 2019 (see para. 4.20). The number of public toilets and aqua privies managed by the four DEHOs are as follows: (a) 36 public toilets under Central/Western DEHO; (b) 8 public toilets under Mong Kok DEHO; (c) 12 public toilets under Yau Tsim DEHO; and (d) 183 public toilets and 15 aqua privies under Yuen Long DEHO.*

(a) *Frequencies of routine inspections adjusted in some DEHOs.* FEHD guidelines have set out the frequency of routine inspections (which depends on the toilet location and availability of toilet attendant services — see para. 4.6(a)(i)) and for facilities in remote area, DEHO Senior Health Inspectors can exercise discretion to determine the most suitable minimum inspection frequency (see para. 4.6(a)(ii)). Of the four selected DEHOs, the inspection frequencies of public toilets for two DEHOs (Central/Western DEHO and Yuen Long DEHO) had been adjusted by the Senior Health Inspectors, as follows:

- (i) for Central/Western DEHO, according to FEHD, the Senior Health Inspector had exercised discretion to adjust the inspection frequency for one public toilet from once every other day (i.e. 2 days) to once per week (i.e. 7 days), as there was no proper vehicular access to the toilet; and
- (ii) for Yuen Long DEHO, according to FEHD, 103 (81%) of the 127 public toilets with cleansing services provided by contractors were converted from aqua privies (which were usually located at remote locations with low utilisation rates). FEHD considered it inadvisable to increase the inspection frequency of these public toilets drastically from once every 10 days (when they were aqua privies) to once every other day (after conversion to public toilets without attendants). The Senior Health Inspectors had adjusted the inspection frequency of these toilets to once every two weeks (i.e. 14 days). Given the large number of public toilets converted from aqua privies in Yuen Long, FEHD considered the discretion exercised reasonable and practicable.

In view of the large number of public toilets converted from aqua privies, Audit considers that there is merit for FEHD to review the guidelines on the inspection frequency of such toilets;

(b) *Actual number of routine inspections fewer than scheduled in some DEHOs.* As shown in Table 9, of the four selected DEHOs, the actual numbers of routine inspections conducted by two DEHOs (Yuen Long and Mong Kok) were fewer than scheduled. In particular, even with its inspection frequency adjusted (see (a)(ii) above), Yuen Long DEHO still had a significant shortfall of 4,133 inspections (24% of 17,359 scheduled inspections). According to FEHD, the reasons for the shortfall of the two DEHOs included:

Management of public toilets

- (i) staff vacancies and redeployment of staff resources to other tasks (e.g. ad hoc tidy up operations, joint departmental clearance operations and enforcement operations, etc.); and
- (ii) staff forgetting to input the daily inspection reports to CMS.

Audit considers it unsatisfactory that some DEHOs conducted fewer routine inspections than the number scheduled and inspection results were not fully input to CMS, which may undermine the effectiveness of the monitoring mechanism. FEHD needs to take measures to ensure that routine inspections are conducted as scheduled and inspection results are timely input to CMS;

Table 9

**Number of routine inspections scheduled by DEHOs
compared with actual number of inspections conducted
(January 2018 to June 2019)**

DEHO	Number of routine inspections scheduled by DEHO (a)	Actual number of routine inspections conducted (Note 1) (b)	Difference (c) = (b) – (a)
Yuen Long	17,359	13,226	- 4,133 (-24 %)
Mong Kok	8,720	7,755	- 965 (-11 %)
Yau Tsim (Note 2)	9,759	10,023	+ 264 (+3 %)
Central/Western (Note 2)	25,535	27,119	+ 1,584 (+6 %)
Overall	61,373	58,123	- 3,250 (-5 %)

Source: FEHD records

Note 1: According to FEHD, the actual number of inspections was based on the following records: (a) specific toilet inspection report on performance of contractors and toilet conditions (see para. 4.8(a)); (b) street cleansing services inspection report (see para. 4.8(b)); and (c) manual on-site daily inspection form for hygiene conditions of public toilets/bathhouses.

Note 2: According to FEHD, for the Central/Western and Yau Tsim DEHOs: (a) the actual number of inspections conducted included extra inspections to investigate complaints or follow-up irregularities detected and was therefore higher than the number of required routine inspections; and (b) based on FEHD records, the two types of inspections could not be differentiated.

- (c) ***Improvements needed in recording inspections in CMS.*** FEHD guidelines require that results of routine inspections should be recorded in CMS. According to FEHD, the inspection officer should input the inspection results on the specific toilet inspection reports (for public toilets with attendant services), and on the street cleansing services inspection reports (for public toilets without attendant services) in CMS (see para. 4.8). For Central/Western DEHO, according to FEHD:
- (i) the results of 22,037 (81%) of the 27,119 routine inspections conducted were recorded in CMS (including both the specific toilet inspection reports and the street cleansing services inspection reports). The results of the remaining 5,082 (19%) inspections conducted were recorded on manual inspection form, and not recorded in CMS; and
 - (ii) 24,542 inspections were conducted for public toilets with attendant services, of which the results of 530 (2% of 24,542) inspections were recorded in the specific toilet inspection reports. The results of some of the remaining inspections were recorded in street cleansing services inspection reports instead of the specific toilet inspection reports.

In Audit's view, FEHD needs to remind DEHO staff to strictly follow FEHD's requirements to input the inspection results in CMS;

- (d) ***Need to explore the use of information technology for keeping inspection records of cleansing services provided by in-house cleansing workmen.*** Of the four DEHOs, only Yuen Long DEHO managed public toilets with cleansing services provided by in-house cleansing workmen (see para. 4.9). Audit examined Yuen Long DEHO's inspection records from January 2018 to June 2019 and noted that the standard inspection record was in manual form. In Audit's view, FEHD needs to explore the use of information technology for keeping such records; and
- (e) ***Need to provide regular management information to senior management.*** Audit noted that no regular management information was provided to FEHD senior management on cleanliness and conditions of facilities of public toilets (e.g. summary analysis of inspection results). In September 2019, FEHD informed Audit that:

Management of public toilets

- (i) DEHO inspecting officers were required to upload the daily inspection reports to CMS, which facilitated DEHO supervisory officers to compile the monthly assessment report for the number of warning letters and default notices issued during the month. The monthly assessment report allowed DEHO management to monitor the performance of the contractors including cleanliness and conditions of facilities of public toilets; and
- (ii) CMS was launched in 2002 to facilitate FEHD's monitoring of contractors' operational performance. As the outdated CMS could not cope with the operational needs over time, FEHD had commenced a revamped CMS project in October 2016 (Note 31). The revamped CMS had been rolled out since April 2019, and full implementation of the revamped CMS for public cleansing services contracts would be effective from November 2019.

In Audit's view, FEHD needs to make use of the revamped CMS to provide regular management information to senior management on cleanliness and conditions of facilities of public toilets.

Need to take measures to address the issues leading to the increasing number of defects requiring repair and maintenance

4.10 According to FEHD guidelines, FEHD staff should ensure venues and facilities (including public toilets) are properly maintained and defects are reported to the relevant authorities for repairs as soon as possible. According to FEHD, the repairing authorities are as follows:

Note 31: *According to FEHD, the objectives of the revamped CMS project include: (a) facilitating management of major outsourced services; (b) enhancing operational efficiency with new workflow and other functions in CMS to support field inspection and contract management tasks; (c) providing more effective sharing and retrieval of contract management information with online access of reference materials and enhanced query/report functions in CMS; (d) producing more timely and comprehensive information related to management of environmental hygiene service contracts in CMS for reference; and (e) promoting green office with reduced printing and storage of paper documents.*

- (a) for public toilets with cleansing services provided by contractors:
 - (i) for minor repairs (e.g. replacement of light bulb or light tube), the cleansing contractors are responsible for carrying out the repair or maintenance works within 24 hours after being informed by FEHD staff under the cleansing contracts. Furthermore, the cleansing contractors shall provide materials and labour to carry out and complete the related repair and maintenance works, irrespective of any reason for their loss or damage. Appendix C shows the list of minor repair and maintenance works under the responsibility of the cleansing contractors based on the contracts; and
 - (ii) for major repairs (e.g. repairing leaking pipes), FEHD staff will initiate requests to the relevant maintenance agents (mainly ArchSD) to arrange repair works; and
- (b) for public toilets with cleansing services provided by FEHD in-house cleansing workmen, all repairs are carried out by relevant maintenance agents.

According to FEHD guidelines, the repair requests to relevant maintenance agents should be properly recorded.

4.11 According to FEHD, it has yet to maintain a computerised system for managing repair and maintenance requests for public toilets. In response to Audit's enquiry, FEHD provided Audit with information on the total number of defects referred to its maintenance agents for rectification (see Table 10). Audit noted that the number of defects referred for rectification had been increasing over the years. From 2015 to 2018, the number of defects referred for rectification increased by 33 % (from 13,290 in 2015 to 17,732 in 2018), while the number of public toilets and aqua privies only increased by 1 % (from 846 (787 public toilets + 59 aqua privies) to 852 (799 public toilets + 53 aqua privies)) during the same period.

Table 10

**Number of defects for public toilets and aqua privies
referred to maintenance agents
(2015 to 2018)**

Year	Number of defects (Note)
2015	13,290
2016	13,823
2017	14,618
2018	17,732
Total	59,463

Source: FEHD records

Note: According to FEHD: (a) the number of defects included those referred to ArchSD and the Electrical and Mechanical Services Department; (b) although it had not maintained the number of defects referred to other maintenance agents (e.g. WSD), the related numbers were minimal; and (c) it had not maintained the numbers of defects for public toilets referred to cleansing contractors.

4.12 As FEHD did not have breakdown by each public toilet in respect of the defects referred to its maintenance agents for rectification, to assess how frequent repairs were required for each toilet, Audit examined ArchSD's records for repair and maintenance requests received from FEHD (Note 32) for each of the 798 public toilets and 51 aqua privies (totalling 849) from January 2015 to June 2019, and found that some public toilets required frequent repair and maintenance (see Table 11). For example, the number of repair and maintenance requests for six public toilets ranged from 401 to 576 over the review period, representing on average 89 to 128 requests per year.

Note 32: *ArchSD, being a main maintenance agent of FEHD for repair and maintenance works (see Note 27 to para. 4.5), had maintained a computerised system on repair and maintenance requests received from other government departments, including FEHD.*

Table 11

**Frequency of repair and maintenance requests for public toilets
(January 2015 to June 2019)**

Number of repair and maintenance requests	Number of public toilets
0 to 100	695 (82%)
101 to 200	113 (13%)
201 to 300	26 (3%)
301 to 400	9 (1%)
401 to 576	6 (1%)
Total	849 (100%)

Source: ArchSD records

4.13 In September and October 2019, FEHD informed Audit that:

- (a) there was a significant increase in the number of defects reported in 2018 (increase of more than 3,000 cases from 14,618 cases in 2017 to 17,732 cases in 2018 — see Table 10 in para. 4.11), which involved public toilets with high utilisation rates, in particular those at tourist spots. The increase in repair and maintenance works might be due to improper use of the public toilets by the public (Note 33), relatively high utilisation/vandalism rate of individual public toilet and ageing toilet facilities. Furthermore, FEHD had stepped up the monitoring of public toilets since 2018 and selected some target public toilets for service enhancement (see para. 4.3). As a result, the detection of defects and referral had significantly increased; and
- (b) in order to enhance the effectiveness of reporting defects in public toilets in terms of accuracy and timeliness, FEHD had been developing a mobile application (mobile app) since the second quarter of 2019 and would introduce the use of handheld device to facilitate the reporting of defective

Note 33: According to FEHD, it has planned to produce a set of Ah Tak stickers to be posted inside public toilets to promote the proper use of toilet facilities, and the stickers are scheduled to be released by mid-November 2019 (see para. 4.55(d)).

items by its frontline staff during inspection of public toilets, tracking of progress of maintenance works and collation of management data for further analysis. The trial application of the mobile app, which would co-ordinate and interface with the computer systems of maintenance agents (e.g. ArchSD), would be rolled out by phases from October 2019.

4.14 In Audit's view, FEHD needs to, in collaboration with ArchSD, take measures to address the issues leading to the increasing number of defects in public toilets requiring repair and maintenance.

Need to improve maintenance of repair and maintenance records

4.15 Given that FEHD has not maintained a computerised system for repair and maintenance works of public toilets (see para. 4.11), Audit selected 30 public toilets (Note 34) managed by the four DEHOs (i.e. Central/Western DEHO, Mong Kok DEHO, Yau Tsim DEHO and Yuen Long DEHO — see para. 4.9) and examined their repair and maintenance records from January 2018 to June 2019. Audit examination revealed that:

- (a) for the 20 public toilets under Central/Western DEHO and Yuen Long DEHO, no records were maintained for repair and maintenance requests to cleansing contractors. For requests to maintenance agents, related progress was recorded in computerised spreadsheets; and
- (b) for the 10 public toilets under the other two DEHOs (i.e. Mong Kok DEHO and Yau Tsim DEHO), no records were maintained for repair and maintenance requests to cleansing contractors. For requests to maintenance agents, the two DEHOs used manual log-books to record requests made and the work progress for monitoring purposes.

Note 34: *Of the 30 public toilets, the cleansing services for 29 toilets were provided by cleansing contractors and the remaining toilet by FEHD in-house cleansing workmen.*

4.16 In Audit's view, to facilitate follow up of repair requests and monitoring of progress, there is merit for FEHD to explore the use of information technology (e.g. computerised system) for maintaining repair and maintenance records of public toilets to improve efficiency.

4.17 According to FEHD, DEHO inspecting officers are required to record the repair and maintenance requests to ArchSD properly (see para. 4.10), and for counter checking purpose, ArchSD will provide FEHD with a monthly report on repair requests received to facilitate FEHD to check for any discrepancy with its records. Audit examined FEHD's repair and maintenance requests to ArchSD for the 30 public toilets under the four DEHOs from January 2018 to June 2019 and noted that there was discrepancy in number of repair and maintenance requests between FEHD and ArchSD records. FEHD informed Audit in October 2019 that for the 30 public toilets, 1,911 requests had been referred to ArchSD from January 2018 to June 2019. However, in ArchSD's computerised system, a total of 2,026 requests had been received from FEHD during the same period (i.e. a discrepancy of 115 (2,026 – 1,911) requests).

4.18 In Audit's view, FEHD needs to, in collaboration with ArchSD, ascertain the reasons for the discrepancy with a view to enhancing the follow-up actions of repair and maintenance requests.

Some minor repairs under responsibility of cleansing contractors referred to maintenance agents

4.19 Audit noted that, in March 2019, ArchSD had expressed concern to FEHD over the appropriateness to raise certain requests to ArchSD for the reported items under minor repair works of public toilets which were the responsibilities of FEHD contractors as stipulated in the contracts for street cleansing services (see para. 4.10(a)(i)). In September and October 2019, FEHD informed Audit that:

- (a) upon receipt of enquiries from ArchSD, FEHD had investigated the cases and provided feedback to ArchSD on the cases highlighted. In the event, 19 requests were confirmed to be wrong referrals;

Management of public toilets

- (b) it reminded DEHO inspection officers in March 2019 to ensure that the repairs referred to ArchSD should be appropriate, having regard to the contractual requirements on conducting minor repair works for the defective items at contractors' expenses and no inappropriate use of ArchSD repairing services; and
- (c) it would develop a mobile app and introduce the use of handheld device to facilitate the reporting of defective items by its frontline staff during inspection of public toilets, tracking of progress of maintenance works and collation of management data for further analysis.

In Audit's view, FEHD needs to make continued efforts to ensure that repair and maintenance requests of public toilets are properly referred to the responsible party.

Scope for improvement in facilities and hygiene conditions of some public toilets

4.20 ***Audit site visits.*** To ascertain the facilities and hygiene conditions of public toilets, Audit conducted site visits to 30 public toilets managed by the four DEHOs which were selected for examination of inspection records (see para. 4.9). Audit conducted two rounds of visits in May (24th and 31st) and June 2019 (20th and 21st) respectively. The June site visits were conducted by Audit staff together with FEHD staff to ascertain the then conditions and the follow-up actions of deficiencies found in the May site visits.

4.21 ***Some public toilets had a large number of defective facilities involving various types of defects.*** With reference to the repair and maintenance responsibilities of contractors for toilet facilities as specified in the cleansing contracts, Audit prepared a checklist for assessing the conditions of facilities in public toilets during Audit site visits (see Appendix D). Audit site visits identified a total of 384 defective items in May 2019 and 307 defective items (including 181 items found in May 2019 but not rectified and 126 new items) in June 2019 (Note 35). As shown in Tables 12 and 13, some public toilets had a large number of defective items involving various types of defects. Photographs 3 and 4 show examples of defects in coat hook and toilet paper holder respectively.

Note 35: *The site visit results were confirmed with FEHD.*

Table 12

**Number of defective items identified in each public toilet during Audit site visits
(June 2019)**

Number of defective items identified	Number of public toilets
0	2 (7%)
1 to 5	5 (17%)
6 to 10	11 (36%)
11 to 15	4 (13%)
16 to 20	6 (20%)
Over 20 (Note)	2 (7%)
Total	30 (100%)

Source: Audit site visits

Note: One toilet had 24 defective items and another had 29. The toilet with 29 defective items involved six types of defects, as follows: (a) 10 items involved defect in coat hook; (b) 9 items involved defect in toilet paper holder; (c) 5 items involved locked/blocked compartment; (d) 3 items involved defect in watercloset seat with cover; (e) 1 item involved defect in liquid soap dispenser/hand sanitiser; and (f) 1 item involved flushing water system not functioning.

Table 13

**Number of types of defects identified in each public toilet
during Audit site visits
(June 2019)**

Number of types of defects identified	Number of public toilets
0	2 (7%)
1 to 3	8 (27%)
4 to 6	16 (53%)
7 or 8	4 (13%)
Total	30 (100%)

Source: Audit site visits

Photograph 3
Defect in coat hook



Photograph 4
Defect in toilet paper holder



Source: Photographs taken by Audit staff in June 2019

4.22 ***Need to timely rectify defective items.*** In the June 2019 site visits, Audit noted that 181 defective items found in May 2019 had not yet been rectified (see para. 4.21) despite the routine inspections and supervisory checks conducted by DEHOs during the period. Of the 181 defective items, 150 items involved minor repairs (Note 36) which should have been rectified by cleansing contractors within 24 hours after being informed by FEHD staff (see para. 4.10(a)(i)). However, as the four DEHOs did not maintain records of repair and maintenance requests to cleansing contractors (see para. 4.15), Audit could not ascertain whether FEHD staff had not informed contractors of the defects or the cleansing contractors failed to rectify the defects within the specified time. For the remaining 31 defective items which needed to be referred to maintenance agents for repair, as of September 2019:

Note 36: *A total of 154 defective items involved minor repairs. However, only 150 items should be rectified by cleansing contractors as four items were found in a public toilet with cleansing service provided by FEHD in-house staff and should be rectified by maintenance agents (see para. 4.10(b)).*

- (a) 6 items (19%) had been referred to relevant maintenance agents before June 2019 site visits; and
- (b) 25 items (81%) were referred to relevant maintenance agents after June 2019 site visits.

4.23 In Audit's view, FEHD needs to strengthen actions to ensure that defects in public toilets are timely identified and referred to contractors and relevant maintenance agents for repair and maintenance, and closely monitor the progress and take appropriate follow-up actions.

4.24 *Hygiene conditions and cleanliness of some public toilets need improvement.* During the site visits in May and June 2019, Audit also assessed the hygiene conditions and cleanliness of the public toilets against the following criteria (Note 37) with three grading levels (i.e. Good, Fair and Poor):

- (a) toilet walls and floor are dry and free of dirt;
- (b) toilet bowls, seats and flushing cisterns are clean and free of dirt;
- (c) wash hand basins and mirrors are free of dirt and their surrounding are clean and dry;
- (d) toilet compartments are clean and dry, and hand rails are shiny; and
- (e) no strong foul smell.

Note 37: *The criteria for assessing the hygiene conditions and cleanliness of public toilets were worked out by Audit with reference to FEHD's poster "Join Us to Monitor Our Contractor's Performance" shown in public toilets.*

Management of public toilets

4.25 The assessment results in May and June 2019 indicated that, of the 30 public toilets visited by Audit, while no “poor” grade in any of the above five criteria was noted in 14 (47%) and 24 (80%) public toilets, 6 (20%) and 1 (3%) public toilets had three or more criteria graded as “poor” respectively. Table 14 shows a summary of Audit’s assessment of hygiene conditions and cleanliness of the 30 public toilets visited in June 2019.

Table 14

**Assessment of hygiene conditions and cleanliness of the 30 public toilets
visited by Audit
(June 2019)**

Criteria	No. of public toilets			
	“Good” grade	“Fair” grade	“Poor” grade	Total
(a) Toilet walls and floor are dry and free of dirt	9	20	1	30
(b) Toilet bowls, seats and flushing cisterns are clean and free of dirt	9	17	4	30
(c) Wash hand basins and mirrors are free of dirt and their surrounding are clean and dry	12	16	2	30
(d) Toilet compartments are clean and dry, and hand rails are shiny	7	19	4	30
(e) No strong foul smell	17	13	—	30

Source: Audit site visits

Note: The grading assessed involved judgment by Audit staff and reflected the condition at the time of visit which may not be representative of the condition at any other time.

4.26 In Audit’s view, FEHD needs to strengthen actions to improve the hygiene conditions and cleanliness of public toilets.

4.27 *Need to keep monitoring hygiene conditions of toilet supplies.* According to the cleansing contract, the contractor should:

- (a) provide toilet paper and jumbo roll toilet paper to the common parts of public toilets and each water closet compartment and ensure that such is always available for use. The toilet paper shall comply with the standard specified under contract. Furthermore, contractor should submit a certificate or report to FEHD certifying that the toilet paper supplied meets the microbiological standard of national standard within two weeks after contract commencement, and submit a fresh certificate or report in case there is a change of supplier or type of the toilet paper; and
- (b) provide liquid soap and hand-gel based antiseptic solution of the types approved by FEHD for each soap dispenser and hand sanitiser.

4.28 Audit noted that, from time to time, there were media reports raising concerns over the hygiene and cleanliness of toilet supplies such as toilet papers and liquid soap. In September 2019, FEHD informed Audit that:

- (a) during routine inspection, the inspecting officers would also check the cleanliness and replenishment of consumables including soap and toilet paper in public toilets and detect the use of any substandard consumables;
- (b) FEHD would regularly arrange thematic inspection to check the consumables used in public toilets including the testing certificates from the suppliers; and
- (c) post-contamination was more likely to be an issue and FEHD would enhance the toilet facilities with automatic soap dispenser and enclosed type paper dispenser to guard against splattering of water and bacteria.

4.29 In Audit's view, FEHD needs to keep monitoring the hygiene conditions of toilet paper and liquid soap in public toilets with a view to ensuring that these toilet supplies always meet the hygiene standard.

Need to collect user feedback on public toilets

4.30 According to FEHD, it had conducted three surveys between 2004 and 2008 to collect public views on public toilets and data on the utilisation of public toilets. According to the survey results in 2008, 71 % of the respondents were satisfied with the public toilet services provided by FEHD while only 3 % were not satisfied. However, Audit noted that FEHD had not conducted any similar survey since the 2008 survey. In September 2019, FEHD informed Audit that FEHD was arranging a trial use of visitor feedback system to gather user feedback of each toilet under monitoring in the new Smart Toilet System, which would gather instantaneous feedback for a much longer period of time on toilets being monitored. In Audit's view, if the trial result of visitor feedback system is satisfactory, FEHD needs to implement the visitor feedback system promptly with a view to ascertaining and meeting the changing needs and expectations for public toilet services.

Audit recommendations

4.31 Audit has *recommended* that the Director of Food and Environmental Hygiene should:

- (a) review FEHD guidelines on the inspection frequency of public toilets converted from aqua privies;
- (b) take measures to ensure that routine inspections are conducted as scheduled and inspection results are timely input to CMS;
- (c) remind DEHO staff to strictly follow FEHD's requirements to input the inspection results in CMS;
- (d) explore the use of information technology for keeping inspection records of cleansing services provided by in-house cleansing workmen;
- (e) make use of the revamped CMS to provide regular management information to senior management on cleanliness and conditions of facilities of public toilets;

- (f) in collaboration with the Director of Architectural Services:**
 - (i) take measures to address the issues leading to the increasing number of defects in public toilets requiring repair and maintenance; and**
 - (ii) ascertain the reasons for the discrepancy of the repair and maintenance records of public toilets between FEHD and ArchSD with a view to enhancing the follow-up actions of repair and maintenance requests;**
- (g) explore the use of information technology for maintaining repair and maintenance records of public toilets to improve efficiency;**
- (h) make continued efforts to ensure that repair and maintenance requests of public toilets are properly referred to the responsible party;**
- (i) strengthen actions to ensure that defects in public toilets are timely identified and referred to contractors and relevant maintenance agents for repair and maintenance, and closely monitor the progress and take appropriate follow-up actions;**
- (j) strengthen actions to improve the hygiene conditions and cleanliness of public toilets;**
- (k) keep monitoring the hygiene conditions of toilet paper and liquid soap in public toilets with a view to ensuring that these toilet supplies always meet the hygiene standard; and**
- (l) if the trial result of visitor feedback system is satisfactory, implement the visitor feedback system promptly with a view to ascertaining and meeting the changing needs and expectations for public toilet services.**

Response from the Government

4.32 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD:

- (a) will review the guidelines on the inspection frequency of public toilets including those public toilets converted from aqua privies and having low utilisation rates;
- (b) has an established mechanism to alert DEHO staff on the procedures for timely input into CMS, and DEHO supervising officers should conduct checks to inspection officers' submission through CMS at appropriate intervals. FEHD will remind staff to strictly follow the guidelines for input of CMS properly and conduct checks to ensure that the public toilets are inspected as scheduled and records timely input into CMS;
- (c) will remind DEHO staff to act strictly in accordance with FEHD's requirements that the inspection officers should input into CMS timely and properly after inspection of toilets. Upon the full implementation of the revamped CMS from November 2019, the new system will prevent inspection officers from making improper data input as in the old system;
- (d) will review the use of information technology for keeping inspection records of in-house services and enhance the revamped CMS to provide regular summary reports on cleanliness as well as repair and maintenance conditions of facilities of public toilets. As remedial measures, FEHD will remind staff to conduct monthly checking of the repair works orders and observe any particular types of facilities in the public toilets with abnormal or sudden increase of repair orders and report to the district management for necessary follow-up action. Furthermore, FEHD will also develop a mobile app to facilitate the reporting of defective items to enhance the effectiveness of reporting defects in terms of accuracy and timeliness, tracking of progress of maintenance works and collation of management data for analysis; and
- (e) will continue to regularly arrange thematic inspection to check the consumables used in public toilets and enhance the toilet facilities with automatic soap dispenser and enclosed type paper dispenser.

4.33 The Director of Architectural Services agrees with the audit recommendations in paragraph 4.31(f). She has said that ArchSD will:

- (a) analyse the repair requests and liaise closely with FEHD to conduct joint investigation on the existing ageing public toilets with a view to taking measures to address the issues leading to the increasing number of defects in public toilets requiring repair and maintenance. ArchSD will inform FEHD of any observations relevant to the management of facilities; and
- (b) liaise closely with FEHD to conduct joint investigation with a view to ascertaining the reasons for the discrepancy of the repair and maintenance records of public toilets between FEHD and ArchSD, and to provide appropriate support amongst other maintenance agents to FEHD for its development of the computerised system to interface with that of ArchSD's on reporting and monitoring of repair and maintenance requests.

Working arrangements and facilities for outsourced workers performing cleansing duties in public toilets

4.34 As of June 2019, of the total 798 public toilets and 51 aqua privies, the cleansing services for 625 (78%) public toilets and 31 (61%) aqua privies were outsourced to contractors under the related contracts for street cleansing services. In addition, 264 (33%) public toilets were provided with toilet attendants (see paras. 4.2 and 4.3).

Need to closely monitor the implementation and effectiveness of the improvement measures in enhancing working conditions of outsourced workers

4.35 In May 2019, FEHD informed LegCo Panel on Manpower that, to enhance the employment conditions and protection for non-skilled workers (including toilet attendants) employed by its outsourced service contractors, the following measures had been/would be adopted:

Management of public toilets

- (a) for service contracts tendered on or after April 2019:
 - (i) increasing the weighting of technical assessment of marking scheme from 30 % to 50 %;
 - (ii) increasing the weighting of the wage level of non-skilled workers from 16 % to 25 % in the technical assessment;
 - (iii) providing a contractual gratuity to non-skilled workers with no less than one year's service of a continuous contract under the Employment Ordinance (Cap. 57) upon completion or termination of the Standard Employment Contract (including resignation by employees or dismissal by employers save for summary dismissal due to the employee's serious misconduct). The rate of the gratuity would be 6% of the total wages earned by the employees during the relevant employment period;
 - (iv) providing statutory holiday pay for non-skilled workers having been employed under a continuous contract for not less than one month;
 - (v) if a non-skilled worker is required to report duty when typhoon signal no. 8 or above is hoisted, the amount of wages for that day/shift's work should be at least 150% of the wages that the worker would be originally entitled to; and
 - (vi) to benefit non-skilled workers engaged in the service contracts that rely heavily on the deployment of non-skilled workers during the transitional period between the announcement of the new policy on 10 October 2018 and the effective date of 1 April 2019, FEHD would negotiate with the service contractors concerned to incorporate relevant new enhancement measures into the service contracts by making top-up payments on a reimbursement basis;
- (b) to improve the environment of attendant rooms, FEHD would install oscillating fans, exhaust fans and power sockets in existing attendant rooms if circumstances permit. In addition, FEHD would as far as possible make available attendant rooms and improve facilities for toilet attendants in new public toilets or when public toilets were refurbished; and

- (c) to improve the manpower arrangement for public toilet services and relieve the workload of toilet attendants, on top of toilet attendants and routine cleansing services, FEHD had set up dedicated deep cleansing teams in districts since March 2019 to perform regular deep cleansing services for public toilets with high utilisation rates or at tourist spots (Note 38). Such dedicated deep cleansing teams would be progressively extended to all public toilets upon renewal of the respective cleansing contracts.

4.36 Audit noted the above measures taken by FEHD and considers that FEHD needs to closely monitor the implementation and effectiveness of the improvement measures in enhancing working conditions of outsourced workers performing cleansing duties in public toilets.

Scope for reviewing provision of toilet attendant services

4.37 According to FEHD, toilet attendant services are provided in public toilets with high utilisation rates or at tourist spots. As of June 2019, 264 (33%) of the 798 public toilets were provided with attendant services. Audit examination revealed that there was room for improvement in providing toilet attendant services, as follows:

- (a) *Some public toilets with high utilisation rates not provided with toilet attendant services.* In April 2019, FEHD informed LegCo that 207 public toilets had high utilisation rates (i.e. with 300 or more daily visitors on average — see para. 2.4). Audit examination revealed that, of the 207 public toilets with high utilisation rates, 24 (12%) toilets were not provided with attendant services. In September 2019, FEHD informed Audit that the utilisation rates of public toilets were not up-to-date, and based on the recent data collected by infrared sensor counting technology (see para. 2.5), 11 (46%) of the 24 public toilets had high utilisation rates (i.e. with 300 or more daily visitors on average). Of these 11 toilets:
 - (i) 2 public toilets had been provided with toilet attendants since July 2019;

Note 38: *According to FEHD, as of June 2019, services of deep cleansing teams were provided at 186 public toilets.*

Management of public toilets

- (ii) 1 public toilet was a toilet with urinal only, rendering provision of toilet attendant services not cost effective; and
 - (iii) for the remaining 8 public toilets, relevant DEHOs were reviewing the provision of toilet attendants based on latest counting data;
- (b) ***Some public toilets at tourist spots not provided with toilet attendant services.*** Audit examination revealed that, of the 23 public toilets which were located at tourist spots as identified by FEHD in December 2018 (see para. 2.40), 5 (22%) toilets were not provided with attendant services. In September 2019, FEHD informed Audit that:
 - (i) in general, toilet attendant services would be provided to public toilets with high utilisation rates and at tourist spots, depending on ground situations; and
 - (ii) regarding the 5 toilets located at tourist spots without attendant services, FEHD had provided attendant services to one toilet in July 2019 and planned to provide attendant services to another toilet from November 2019. For the remaining 3 toilets, they were very small in size with very low utilisation rates, and provision of toilet attendants was considered not cost effective; and
- (c) ***Some public toilets not having high utilisation rates and not located at tourist spots provided with toilet attendant services.*** Of the 264 public toilets provided with attendant services, 77 (29%) of them were not one of the 207 public toilets with high utilisation rates nor one of the 23 public toilets located at tourist spots. In October 2019, FEHD informed Audit that, of the 77 public toilets:
 - (i) based on the recent data collected by infrared sensor counting technology (see para. 2.5), 13 (17%) public toilets had high utilisation rates (i.e. with 300 or more daily visitors on average) and were justified to be provided with attendant services;
 - (ii) 9 (12%) public toilets were provided with attendant services on selected dates only (such as weekends and public holidays), and provision of toilet attendant services was to address the upsurge need of local visitors during weekends and holidays; and

- (iii) for the remaining 55 (71%) public toilets, FEHD would review the need for provision of toilet attendant services based on the latest utilisation data collected by infrared sensor counting.

4.38 The above audit findings indicate that FEHD's criteria for providing toilet attendant services (i.e. toilets with high utilisation rates or at tourist spots) are not fully met. According to FEHD, in providing toilet attendant services, apart from utilisation rate and location of public toilets, FEHD also considers other factors, including whether the high utilisation rate only occurred at particular time or interval, hygiene condition, cost effectiveness, practicability, inherent site constraint for accommodating toilet attendants and alternative cleansing measures other than provision of toilet attendant services. In Audit's view, FEHD needs to review the provision of toilet attendant services, having regard to the up-to-date utilisation rates of public toilets assessed with the use of technology and other relevant factors (e.g. hygiene condition).

Some public toilets with attendant services not provided with attendant rooms

4.39 According to FEHD Toilet Handbook:

- (a) a small cubicle should be provided in each male toilet and female toilet for the attendant. Each attendant room should be provided with a viewing panel with tempered clear glass to facilitate the toilet attendant to keep a vigilant watch over the toilet area; and
- (b) a power socket and an oscillating fan should be provided inside the attendant room.

4.40 Audit examination of FEHD records revealed that, as of June 2019:

- (a) of the 264 public toilets provided with attendant services, 33 (13%) toilets were not provided with attendant rooms; and
- (b) of the remaining 231 (i.e. 264 – 33) public toilets with attendant rooms:

Management of public toilets

- (i) 53 (23%) toilets only had one toilet attendant room. Given that each of these toilets comprised a male and a female toilets with a toilet attendant serving each one, the two attendants might need to use the same room; and
- (ii) 178 (77%) toilets did not have power socket, fan or exhaust fan inside the attendant rooms (see para. 4.35(b)).

4.41 According to FEHD, it will request ArchSD to install oscillating fans, exhaust fans and power sockets in existing attendant rooms if circumstances permit, and as far as possible make available attendant rooms and improve facilities for toilet attendants in new public toilets or when public toilets were refurbished (see para. 4.35(b)). In Audit's view, with a view to improving the working condition of toilet attendants, FEHD needs to, in collaboration with ArchSD, strengthen actions to provide attendant rooms and related facilities for toilets with attendant services as far as possible.

Audit recommendations

4.42 Audit has *recommended* that the Director of Food and Environmental Hygiene should:

- (a) **closely monitor the implementation and effectiveness of the improvement measures in enhancing working conditions of outsourced workers performing cleansing duties in public toilets;**
- (b) **review the provision of toilet attendant services, having regard to the up-to-date utilisation rates of public toilets assessed with the use of technology and other relevant factors (e.g. hygiene condition); and**
- (c) **in collaboration with the Director of Architectural Services, strengthen actions to provide attendant rooms and related facilities for toilets with attendant services as far as possible.**

Response from the Government

4.43 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD:

- (a) has been working closely with ArchSD to improve the working conditions in public toilets such as provision of attendant rooms at new public toilets or after refurbishment;
- (b) has adopted infrared people counter to assess the daily headcount of public toilets, and will continue to apply new technology to obtain the updated utilisation rates of public toilets and review the provision of toilet attendants; and
- (c) will continue to liaise with ArchSD to provide toilet attendant related facilities (e.g. power sockets, oscillating fans and exhaust fans) for existing attendant rooms, if circumstances permit.

4.44 The Director of Architectural Services agrees with the audit recommendation in paragraph 4.42(c). She has said that ArchSD will, upon FEHD's request, provide assistance and technical advice in implementing this recommendation.

Handling of complaints on public toilets

4.45 FEHD receives complaints on public toilets through various channels, including the government hotline 1823, referrals from government bureaux and departments and those received by FEHD directly. According to FEHD, information about complaints is maintained in a computer system (i.e. Complaints Management Information System (CMIS)) which provides a central record of complaint information to help monitor progress with a view to ensuring that all complaints are dealt with properly and efficiently. According to FEHD guidelines:

- (a) upon receiving a complaint, FEHD clerical staff will input the case details into CMIS and a case officer will be assigned to handle the case. The case officer will follow up the case, including conducting investigation and updating CMIS; and

Management of public toilets

- (b) all complaints received must be dealt with promptly, and the quicker a complaint is handled the better. Wherever possible, attempt should be made to resolve a complaint on the spot. Where it is not possible, the case officer should give a substantive or an interim reply to a complainant within 10 calendar days upon receipt of the complaint. If an interim reply is issued to the complainant, the case officer should aim at issuing a substantive reply within 30 calendar days upon receipt of the complaint. For complicated cases requiring longer processing time, the case officer should update the complainant on the progress within 30 calendar days upon receipt of the complaint, and review the case progress regularly (at least at a monthly interval) and give further interim replies to the complainant as necessary. The progress should be inputted into CMIS immediately to reflect the latest position of the cases in the system.

According to FEHD, CMIS has built-in reminder and alert functions to assist case officers and their supervisors to identify cases with delays in replying to complainants (e.g. alerts for overdue interim reply and substantive reply and a monthly management information report on complaints showing the lapse time of overdue complaints).

4.46 Table 15 shows the number of complaints on public toilets received by FEHD (including referral cases) from January 2016 to April 2019.

Table 15

**Number of complaints received on public toilets
(January 2016 to April 2019)**

Year	Number of complaints (Note)
2016	2,774
2017	2,913
2018	2,626
2019 (up to April 2019)	897
Total	9,210

Source: FEHD records

Note: According to FEHD, the number of complaints included those received on public toilets and bathhouses, but there was no separate breakdown for the number of complaints received on public toilets. As of August 2019, there were 27 public bathhouses.

Need to deal with complaints on public toilets promptly

4.47 To assess the time taken for handling complaint cases on public toilets, Audit conducted an ageing analysis of the 3,759 completed complaint cases in the period from January 2018 to April 2019. The analysis showed that it took more than 1 month to 12 months to complete the handling of 614 (16%) complaint cases after receipt by FEHD (see Table 16). Audit noted that, as of April 2019, the handling of 139 complaint cases on public toilets was not yet completed. Of these 139 complaint cases, 74 (53%) complaint cases were received for more than 1 month with the longest case being outstanding for seven months. In September 2019, FEHD informed Audit that some complaint cases should not be regarded as cases with delays in handling and replying to complaints, such as repeated complaints, cases with complications in complaint nature which might cause lengthy handling and omission in inputting the dates of replying complaints.

Table 16**Ageing analysis of complaint cases completed from
January 2018 to April 2019**

Period from receipt of complaint to completion date	Number of complaints
1 month or less	3,145 (83.7%)
More than 1 month to 3 months	405 (10.8%)
More than 3 months to 6 months	194 (5.1%)
More than 6 months to 9 months	9 (0.2%)
More than 9 months to 12 months	6 (0.2%)
Total	3,759 (100%)

Source: Audit analysis of FEHD records

4.48 According to FEHD guidelines, all complaints received must be dealt with promptly and the quicker a complaint is handled the better (see para. 4.45(b)). In Audit's view, FEHD should endeavour to deal with complaints received on public toilets promptly and update CMIS records timely.

Scope for enhancing analysis of complaints received on public toilets

4.49 From 2016 to 2018, FEHD received an average of about 2,800 complaints on public toilets annually. In April 2019, in response to LegCo Members' enquiries, FEHD informed LegCo that no statistics was kept regarding public toilets with the highest number of complaints and the number of complaints on unsatisfactory hygiene condition of public toilets.

4.50 Audit reviewed the information kept by CMIS on complaints on public toilets and noted that:

- (a) ***Public toilet under complaint.*** While there was a field “location under complaint” in CMIS, it could not provide information on all the concerned public toilets (e.g. the field was left blank or with incomplete information). There was no dedicated field for capturing the name of a public toilet under complaint (while a complainant may not always provide the exact name of the public toilet under complaint, FEHD needs to ascertain the exact toilet in handling the complaint); and
- (b) ***Nature of complaint.*** Although there was a field “subject” in CMIS containing brief information about the content of complaint, FEHD had not made use of the data field to analyse the nature of complaint.

4.51 Audit analysed the information maintained in the field “subject” in CMIS for the 3,523 complaints received from January 2018 to April 2019. Audit found that 2,252 (64%) complaints involved damaged and inadequate facilities, and 1,060 (30%) complaints involved conditions of hygiene and cleanliness (one complaint might involve more than one nature — see Table 17).

Table 17

**Nature of complaints on public toilets
(January 2018 to April 2019)**

Nature of complaints	No. of complaints
Damaged or inadequate facilities	2,252 (64 %)
Conditions of hygiene and cleanliness	1,060 (30 %)
Against staff	246 (7 %)
Others (Note 1)	550 (16 %)
No. of complaints received (Note 2)	3,523 (100 %)

Source: Audit analysis of FEHD records

Note 1: Others mainly included complaints on one or more public toilets in general without specifying the nature.

Note 2: One complaint might involve more than one nature (e.g. a complaint on damaged facilities and conditions of hygiene).

4.52 In Audit's view, FEHD needs to consider enhancing CMIS (e.g. adding a field for inputting the name of a public toilet) and strengthen the regular analysis of complaints received on public toilets (e.g. by individual toilet and by the nature of complaints) with a view to providing useful management information for monitoring and enhancing public toilet services.

Audit recommendations

4.53 **Audit has recommended that the Director of Food and Environmental Hygiene should:**

- (a) **endeavour to deal with complaints received on public toilets promptly and update CMIS records timely; and**
- (b) **consider enhancing CMIS (e.g. adding a field for inputting the name of a public toilet) and strengthen the regular analysis of complaints**

received on public toilets (e.g. by individual toilet and by the nature of complaints) with a view to providing useful management information for monitoring and enhancing public toilet services.

Response from the Government

4.54 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD:

- (a) has established mechanism to remind staff of the procedures and guidelines for handling complaints; and
- (b) will explore the feasibility of enhancing CMIS and strengthening the analysis of complaints for monitoring and enhancing public toilet services.

Publicity work

4.55 According to FEHD, in addition to hardware improvement and enhancement of cleansing services, public awareness about the importance of toilet hygiene as well as the proper use of toilet facilities are equally vital in upkeeping cleanliness of public toilets. FEHD appeals to the public for collaborative efforts in enhancing the cleanliness and hygiene of public toilets through health educational and promotional activities, including the following:

- (a) setting up health education promotional booths at selected public toilets with a high utilisation rate since May 2019 and extending implementation of the measure to other suitable public toilets to remind the public of being mindful and considerate when using public toilets;
- (b) making use of social media featuring Keep Clean Ambassador Ah Tak as well as other publicity materials to step up public education on the importance of toilet hygiene and the proper use of toilet facilities. Posters with Keep Clean Ambassador Ah Tak have been put up to remind public of six toilet rules (i.e. don't step on the toilet seat, flush the toilet after use, rubbish must go in the rubbish bin, wash hands with soap, don't flick the water off on the floor and blow hands dry — see Figure 1);

Figure 1

Poster on six toilet rules featuring Keep Clean Ambassador Ah Tak



Source: FEHD records

- (c) setting up a section on good toilet behaviour and symbolism on toilet signage at FEHD's Health Education Exhibition and Resource Centre in Tsim Sha Tsui since January 2016. According to FEHD, the number of visitors to the Resource Centre between January 2016 and May 2019 were as follows:

Year	Number of visitors
2016	102,567
2017	93,724
2018	97,450
2019 (up to May 2019)	37,984

- (d) since May 2019, planning to produce a set of Ah Tak stickers to be posted inside public toilets to promote the proper use of toilet facilities. According to FEHD, the stickers are scheduled for release by mid-November 2019.

Need to enhance publicity on proper use of public toilets

4.56 During Audit's site visits of public toilets in May and June 2019 (see para. 4.20), Audit noted that some toilets were not properly used by the public, e.g.:

- (a) some toilets remained unflushed after use; and
- (b) some toilet fittings were wilfully damaged (see Photograph 5 for an example) or soiled with graffiti.

Photograph 5

A public toilet seat wilfully damaged at Yuen Long



*Source: Photograph taken by Audit staff
in June 2019*

4.57 In Audit's view, FEHD needs to continue to enhance publicity on proper use of public toilets (e.g. displaying stickers on proper use of public toilets in each toilet compartment).

Scope for enhancing provision of information about public toilets on website

4.58 According to FEHD, it regularly updates the information about public toilets with location maps on its website and has provided a mobile version of the webpage to facilitate visitors browsing the information with mobile phones or other mobile devices (Note 39). Audit reviewed the information about public toilets on FEHD's website as of August 2019 and noted that:

- (a) there were 7 public toilets with male toilets only as of August 2019. However, FEHD's website only showed that 2 toilets were for male and no such information for the remaining 5 toilets. In October 2019, FEHD informed Audit that its website had already been updated to reflect that the 7 public toilets were for male only; and
- (b) 27 public toilets were closed for refurbishment as of August 2019 (e.g. a public toilet at Yuen Long had been closed for refurbishment since August 2018). However, information about their closure was not uploaded onto FEHD website (e.g. the related closing and reopening dates, whether portable toilets are provided as substitutes and the location of the nearest public toilet).

4.59 In Audit's view, FEHD needs to enhance provision of information about public toilets on its website, including closure of toilets undergoing refurbishment.

Scope for improving directional signs for public toilets

4.60 According to FEHD Toilet Handbook, where appropriate, a directional sign should be provided at suitable locations outside the public toilet to guide users to the male toilet, female toilet and accessible unisex toilet. In August 2019, Audit conducted site visits to 10 public toilets in Central and Western District and found that:

Note 39: *The Hong Kong Tourism Board has also included a mobile app (developed by the private sector) on its website for locating public toilets and other toilet facilities nearby.*

- (a) four public toilets were not provided with directional signs; and
- (b) for the remaining six public toilets provided with directional signs:
 - (i) one public toilet with both male and female toilets was provided with a directional sign showing the availability of male and female toilets (see Photograph 6);
 - (ii) one public toilet with male toilet only was provided with a directional sign showing the availability of public toilets (i.e. without indicating the availability of male toilet only — see Photograph 7);
 - (iii) four public toilets with male, female and accessible unisex toilets were provided with directional signs showing the availability of public toilets or availability of male and female toilets (i.e. without showing the availability of accessible unisex toilet); and
 - (iv) no directional signs indicated the distance to the nearest public toilet.

Photograph 6

Directional sign showing availability of male and female toilets



Photograph 7

Directional sign showing availability of public toilets



Source: Photographs taken by Audit staff in August 2019

Management of public toilets

4.61 In September and October 2019, FEHD informed Audit that the provision of directional signage on streets:

- (a) should only be provided on a need-to-do basis in order not to entail excessive street furniture, and the provision of public toilet information on FEHD website and mobile apps were more effective means than the directional signs on streets; and
- (b) was under the jurisdiction of the Highways Department and FEHD needed to seek the advice of the Highways Department on the matter.

In Audit's view, FEHD needs to consider the merit of providing and enhancing the directional signs for public toilets as far as practicable.

Audit recommendations

4.62 **Audit has *recommended* that the Director of Food and Environmental Hygiene should:**

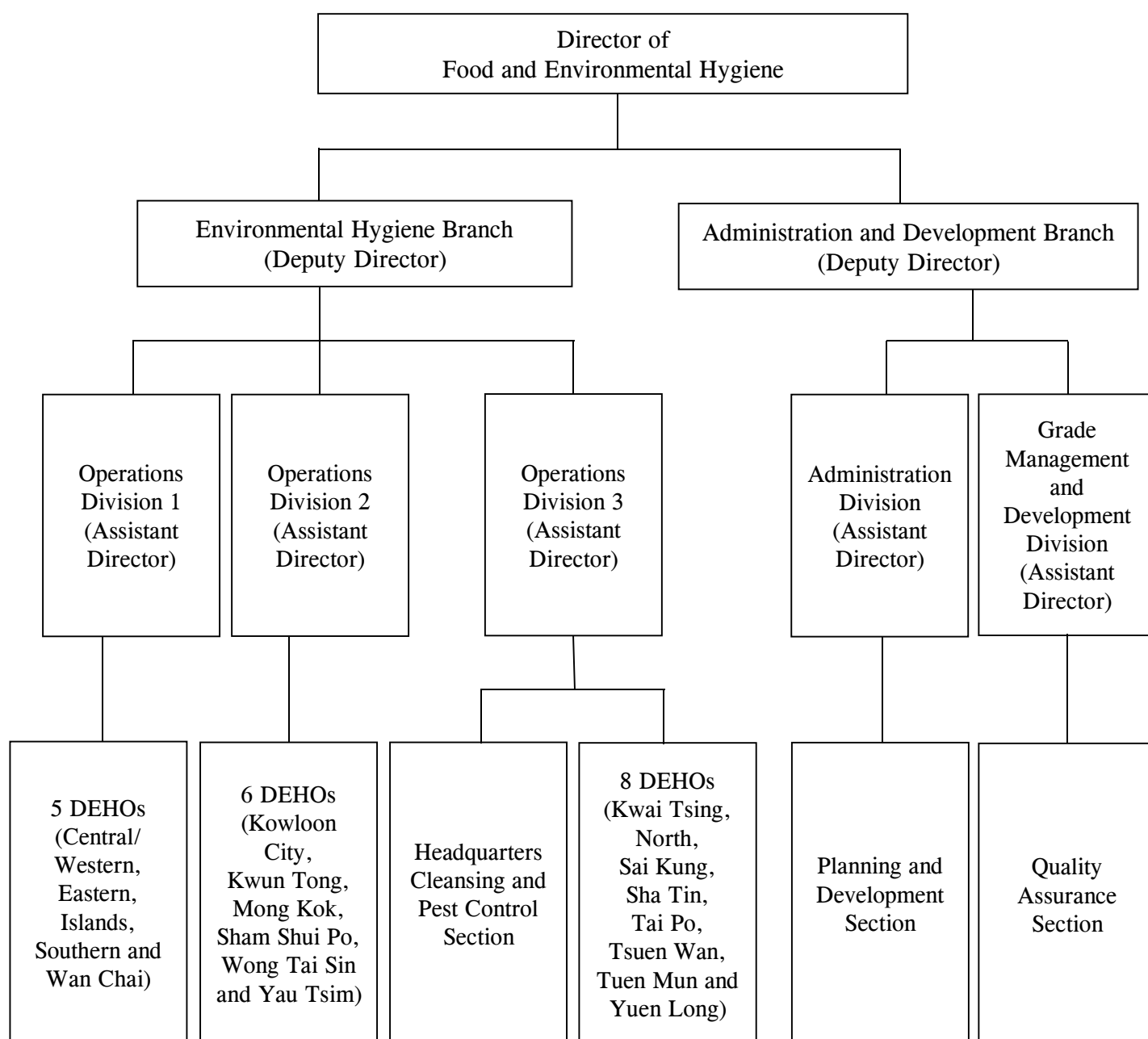
- (a) **continue to enhance publicity on proper use of public toilets (e.g. displaying stickers on proper use of public toilets in each toilet compartment);**
- (b) **enhance provision of information about public toilets on FEHD website, including closure of toilets undergoing refurbishment; and**
- (c) **consider the merit of providing and enhancing the directional signs for public toilets as far as practicable.**

Response from the Government

4.63 The Director of Food and Environmental Hygiene agrees with the audit recommendations. She has said that FEHD:

- (a) has enhanced publicity on proper use of public toilets by disseminating messages on the importance of toilet hygiene as well as the proper use of toilet facilities. FEHD makes use of social media featuring Keep Clean Ambassador Ah Tak to step up public education and appeal to the public for being civic-minded and considerate when using public toilet facilities;
- (b) will review to enhance provision of information (such as toilet type, closure of toilets or undergoing refurbishment) on its website; and
- (c) will consult the Highways Department to provide and enhance the directional signs for public toilets if necessary.

**Food and Environmental Hygiene Department:
Organisation chart (extract)
(30 June 2019)**



Source: FEHD records

**Number of public toilets in 18 districts
(June 2019)**

District (Note)	Number of public toilets
(a) Hong Kong Island	
1. Central and Western	36
2. Southern	23
3. Wan Chai	18
4. Eastern	13
Sub-total (a)	90
(b) Kowloon	
5. Yau Tsim Mong	20
6. Kowloon City	15
7. Sham Shui Po	10
8. Kwun Tong	10
9. Wong Tai Sin	6
Sub-total (b)	61
(c) New Territories and outlying islands	
10. Yuen Long	183
11. North	136
12. Tai Po	72
13. Islands	68
14. Sai Kung	60
15. Tuen Mun	47
16. Tsuen Wan	32
17. Sha Tin	30
18. Kwai Tsing	19
Sub-total (c)	647
Total (d) =(a) + (b) + (c)	798

Source: FEHD records

Note: Except for public toilets in Yau Tsim Mong District managed by two DEHOs (Mong Kok DEHO and Yau Tsim DEHO), public toilets in each of the other 17 districts are managed by one DEHO.

Remarks: According to FEHD: (a) public toilets managed by FEHD are mainly provided at transport facilities, tourist spots and any place where crowds are likely to congregate or transient pedestrian traffic is heavy; and (b) public toilets are more concentrated in Central and Western District and village areas in the districts in the New Territories because of the increase in population and lack of proper toilet facilities in these areas in early years of Hong Kong.

Appendix C
(paras. 4.4(a) and
4.10(a)(i) refer)

**List of minor repair and maintenance works
under responsibility of cleansing contractors for public toilets**

Type of repair and maintenance works
1. Replace watercloset seat with cover
2. Replace nylon cord connected to the lever arm of high level flushing cistern
3. Replace lever handle of low level flushing cistern (excluding foot pedal type flushing cistern)
4. Re-fix/replace bottle trap underneath wash hand basin, urinal and sink
5. Replace washer of leaking water tap (excluding infrared sensor tap)
6. Re-fix/replace locking device for watercloset/shower compartment door
7. Re-fix/replace coat hook
8. Clear minor blockage of watercloset, urinal, wash hand basin, sink, flow controller of water tap and surface channel
9. Re-fix/replace fluorescent tube/light bulb (excluding flood lights)
10. Re-fix/replace toilet paper holder (including the bar for holding the toilet paper)
11. Re-fix/replace jumbo roll tissue holder (including the bar for holding jumbo roll toilet paper)
12. Re-fix notice box/board and inspection record box
13. Re-fix hand rail/litter container
14. Re-fix/replace liquid soap dispenser
15. Re-fix/replace liquid hand sanitiser/dispenser
16. Replace battery for sensor of automatic tap (if any)
17. Re-fix folding baby changing counter (if any)

Source: FEHD records

Remarks: According to FEHD cleansing contracts:

- (a) *all labour and materials for the repair and maintenance services shall be provided at contractors' own expenses;*
- (b) *all materials and replacement parts used shall be a direct replacement and they shall be of the same brand and quality as the existing parts used in the public toilets. In case such materials and replacements are not available in the market, the nearest equivalent shall be provided subject to the prior approval of FEHD; and*
- (c) *the contractors shall maintain such stocks of materials, spares, equipment and tools as they consider necessary for the prompt and effective completion of the repair and maintenance works required.*

Appendix D
(para. 4.21 refers)

Audit checklist for assessing conditions of facilities in public toilets

Type of defects
1. Defect in watercloset seat with cover
2. Defect in nylon cord connected to the lever arm of high level flushing cistern
3. Defect in lever handle of low level flushing cistern (excluding foot pedal type flushing cistern)
4. Defect in bottle trap underneath wash hand basin, urinal and sink
5. Leaking water tap
6. Defect in locking device for watercloset/shower compartment door
7. Defect in coat hook
8. Blockage of watercloset, urinal, wash hand basin, sink, flow controller of water tap and surface channel
9. Defect in fluorescent tube/light bulb/light-emitting diode light bulb
10. Defect in toilet paper holder (including the bar for holding the toilet paper)
11. Defect in jumbo roll tissue holder (including the bar for holding jumbo roll toilet paper)
12. Defect in notice box/board and inspection record box
13. Defect in hand rail/litter container
14. Defect in liquid soap dispenser/hand sanitiser
15. Sensor of automatic tap (if any) out of battery/broken or tap not working
16. Defect in fixed or folding baby changing counter
17. Flushing water system not functioning
18. Locked/blocked compartment
19. Locked/blocked urinal
20. Lack of toilet paper
21. Lack of soap or hand sanitiser

Source: With reference to FEHD cleansing contractors' repair and maintenance responsibilities for public toilets (see Appendix C)

Acronyms and abbreviations

ArchSD	Architectural Services Department
Audit	Audit Commission
B(SF)R	Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations
CMIS	Complaints Management Information System
CMS	Contract Management System
DC	District Council
DEHO	District Environmental Hygiene Office
FEHD	Food and Environmental Hygiene Department
HKPSG	Hong Kong Planning Standards and Guidelines
LegCo	Legislative Council
WSD	Water Supplies Department

CHAPTER 2

**Innovation and Technology Bureau
Innovation and Technology Commission
Hong Kong Productivity Council**

**Provision of consultancy, research and
development and training services by
the Hong Kong Productivity Council**

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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PROVISION OF CONSULTANCY, RESEARCH AND DEVELOPMENT AND TRAINING SERVICES BY THE HONG KONG PRODUCTIVITY COUNCIL

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.17
Audit review	1.18 – 1.20
General response from HKPC	1.21
General response from the Government	1.22
Acknowledgement	1.23
PART 2: PROVISION OF CONSULTANCY AND MANUFACTURING SUPPORT SERVICES	2.1
Management of consultancy services	2.2 – 2.26
Audit recommendations	2.27
Response from HKPC	2.28
Management of manufacturing support services	2.29 – 2.46
Audit recommendations	2.47 – 2.48
Response from HKPC	2.49
Response from the Government	2.50

	Paragraph
PART 3: RESEARCH AND DEVELOPMENT PROJECTS	3.1
Management of R&D projects	3.2 – 3.13
Audit recommendations	3.14
Response from HKPC	3.15
Commercialisation of results of R&D projects	3.16 – 3.27
Audit recommendations	3.28
Response from HKPC	3.29
 PART 4: PROVISION OF TRAINING PROGRAMMES	 4.1 – 4.3
Strategic planning of training programmes	4.4 – 4.11
Audit recommendations	4.12
Response from HKPC	4.13
Programme development and enrolment	4.14 – 4.25
Audit recommendations	4.26
Response from HKPC	4.27
Evaluation of training programmes	4.28 – 4.36
Audit recommendations	4.37
Response from HKPC	4.38
Management of training venues	4.39 – 4.43
Audit recommendations	4.44
Response from HKPC	4.45

Appendices	Page
A : HKPC: Organisation chart (extract) (31 March 2019)	83
B : Acronyms and abbreviations	84

PROVISION OF CONSULTANCY, RESEARCH AND DEVELOPMENT AND TRAINING SERVICES BY THE HONG KONG PRODUCTIVITY COUNCIL

Executive Summary

1. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. The Council is the governing body of HKPC and is supported by four Committees. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The Commissioner for Innovation and Technology (CIT) is the Controlling Officer of the subventions granted to HKPC. In 2017-18, HKPC had a total income of \$711 million, which included government subventions of \$223.3 million. In the same year, HKPC had a total expenditure of \$663.7 million. The Audit Commission (Audit) has recently conducted a review of HKPC. The findings are contained in this Audit Report and another one entitled “Governance and administrative issues of the Hong Kong Productivity Council” (Chapter 3 of the Director of Audit’s Report No. 73). This Audit Report reviews matters relating to the provision of consultancy and manufacturing support services, research and development (R&D) projects and provision of training programmes by HKPC.

Provision of consultancy and manufacturing support services

2. *Target on number of consultancy projects accepted not met.* HKPC’s consultancy projects include advisory projects to provide professional help and advice to clients and development projects to develop products or systems for clients. Audit noted that the target on the key performance indicator (KPI) “Number of consultancy projects accepted” was not met throughout the four-year period 2014-15 to 2017-18. The target for 2018-19 was met after HKPC’s decision in July 2018 to classify manufacturing support projects (e.g. laboratory testing) with service fees over \$5,000 as consultancy projects. Audit found that the target for 2018-19 was not revised according to the new definition. Moreover, there was no documentary evidence showing that the Council or the Innovation and Technology Commission (ITC) had

Executive Summary

been informed of the change in the definition of consultancy projects. There was also no disclosure of the effect of the change on the achievement of the target in reporting the performance in the annual review report submitted to CIT and the Council (paras. 2.2, 2.6 and 2.7).

3. ***Some assignments taken on elsewhere than in Hong Kong did not recover all costs incurred.*** According to the HKPC Ordinance, productivity related assignments elsewhere than in Hong Kong shall not be taken on unless the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred. Audit noted that in the period from 2014-15 to 2018-19, HKPC completed 788 consultancy projects which were productivity related assignments elsewhere than in Hong Kong. Of these 788 projects, 308 (39%) did not recover all costs incurred, contrary to the requirement stipulated in the HKPC Ordinance. The total deficit of these 308 projects amounted to \$1.4 million (paras. 2.10 and 2.11).

4. ***Need to promulgate guidelines on fee concessions.*** According to HKPC Standard Practices, pricing for all forms of HKPC services should be based on the full-cost recovery principle and concessions can be applied if certain criteria are met. Audit reviewed the consultancy projects accepted in 2018-19 and noted that the clients in 484 (51%) of the 944 projects accepted were small and medium enterprises according to HKPC Standard Practices and concessions of up to 30% could be offered to them. Of these 484 consultancy projects, 221 (45.7%) were not offered any concession, 250 (51.6%) were offered 20% concessions, 12 (2.5%) were offered 30% concessions and 1 (0.2%) was offered a 65% concession. However, there was no documentary evidence showing the justifications for the different concession rates offered in each project (paras. 2.14, 2.17 and 2.18).

5. ***Delay in consultancy project completion.*** Audit examined the consultancy projects completed in the period from 2014-15 to 2018-19 and found that of the 4,299 consultancy projects completed, 1,243 (29%) were completed after the approved completion date. The average duration of delay for these 1,243 projects was 42 days (para. 2.20).

6. ***Costs incurred for consultancy projects not fully recovered.*** According to HKPC Standard Practices, fees for projects carried out should be charged on a full-cost recovery basis. Audit noted that of the 4,299 consultancy projects completed in the period from 2014-15 to 2018-19, full cost was not recovered in 1,078 (25%)

Executive Summary

projects. The total deficit of these 1,078 projects amounted to \$33 million. However, there was no documentary evidence showing the reasons for their deviations from the full-cost recovery basis (para. 2.21).

7. ***Need to tighten controls on services provided for manufacturing support projects.*** HKPC's manufacturing support projects mainly include projects that provide testing, machining and other professional support services to clients. In the period from July 2016 to September 2018, HKPC found that a staff had not billed two clients after providing workshop services to them with a total value of \$200,000 and \$70,000 respectively. During the same period, the two clients had provided \$200,000 and \$70,000 respectively as sponsorships for two Innovation and Technology Fund (ITF) projects of which the staff was in charge. Audit noted that the minimum sponsorship requirement on the two ITF projects would not have been met if the two sums had been accounted for as workshop service income instead of sponsorships. ITC needs to consider whether follow-up actions on the sponsorship issue identified by HKPC are required (paras. 2.29(a) and 2.33 to 2.36).

8. ***Target on the income of Inno Space not met.*** Inno Space, established in October 2017, is operated by HKPC to provide manufacturing support services to users not engaged in manufacturing support projects. Membership fee was the main source of income of Inno Space other than government subvention. Audit noted that in 2018-19, while the number of members recruited exceeded the target of 200 by 125%, the income fell short of the target by 40%. Audit analysed the number of members recruited in 2018-19 and found that of the 450 members recruited in 2018-19, 236 (52%) were trial members who were not required to pay any membership fee (paras. 2.37 and 2.42).

9. ***Need to promote the utilisation of the equipment of Inno Space.*** Audit reviewed the 2018-19 booking records of ten items of equipment of Inno Space with total cost of \$2.4 million and analysed the number of days on which the items were booked. Audit found that of the 297 available days in 2018-19, the number of days on which the items of equipment were booked was only 26 (8.8% of the available days for booking) on average, ranging from 1 (0.3%) to 138 (46.5%) (para. 2.45).

Research and development projects

10. ***Need to review KPIs for managing R&D projects.*** HKPC's R&D projects are funded from different sources, including ITF funded projects, projects funded by other government funding schemes and projects commissioned by private sector clients. HKPC has set two KPIs for managing R&D projects, namely "Number of new R&D projects" and "Number of on-going R&D projects" (paras. 3.2 and 3.3). Audit found that in the period from 2014-15 to 2018-19:

- (a) 68 (33%) of the 203 new projects were counted as both consultancy projects and R&D projects at the same time. They were counted against two targets, namely "Number of consultancy projects accepted" and "Number of new R&D projects". If these 68 projects had only been allowed to be counted against the target for either R&D projects or consultancy projects, the achievement of the targets on the KPIs might have been affected (para. 3.4(a)); and
- (b) on average, 60% of the on-going R&D projects were projects brought forward from previous years, with delayed projects included therein accounting for 4%. Using the number of on-going projects as a KPI might give an unintended incentive for project teams to delay projects in hand unnecessarily (paras. 3.7 and 3.8).

11. ***Late submission of project reports for ITF funded R&D projects.*** For the 33 ITF funded R&D projects completed in the period from 2014-15 to 2018-19, Audit noted that, of the 106 Progress Reports and Final Reports due for submission by HKPC to ITC, 37 (35%) were submitted late (para. 3.12).

12. ***Need to improve KPIs for commercialisation of R&D results.*** HKPC has set two KPIs relating to commercialisation of its products and technologies, namely "Number of patents/licences/royalties" and "Number of products/technologies commercialised" (para. 3.18). Audit noted that in the period from 2014-15 to 2018-19:

- (a) of the 86 patents, licences or royalties awarded/entered, 77 (90%) were patents awarded, while the number of licence or royalty agreements entered only contributed 9 (10%) of the total. However, a product or technology is not commercialised when a patent is awarded (para. 3.21); and

Executive Summary

- (b) of the 97 products or technologies commercialised, only 45 (46%) were developed from R&D projects. Moreover, when a product or technology was sold to more than one client, the single product or technology was counted as more than one products or technologies commercialised (para. 3.23).

13. ***Need to endeavour to increase the number of patents commercialised.*** As at 31 August 2019, HKPC had 123 patents. Audit noted that of these 123 patents, only 4 (3%) had generated licence or royalty income since patent registration, and the total licence and royalty income generated by them was \$1.5 million. The remaining 119 (97%) patents had not generated any licence or royalty income since patent registration (para. 3.26).

Provision of training programmes

14. ***Targets on KPIs for training programmes not met.*** HKPC provides public training programmes for enrolment by the public and corporate training programmes for companies and organisations. Audit analysed the performance of HKPC's training programmes for the period from 2014-15 to 2018-19 and found that: (a) the actual numbers of fee-charging training programmes launched in the period from 2014-15 to 2016-17 were only 60% to 90% of the targets; (b) the actual numbers of people attending the fee-charging training programmes in 2014-15 and 2015-16 were only 52% and 79% of the targets; and (c) the actual income from training programmes for the period from 2014-15 to 2018-19 was only 47% to 65% of the targets, decreasing from \$12.9 million in 2014-15 to \$7.6 million in 2018-19 (paras. 4.3 and 4.6).

15. ***Low enrolment of public training programmes.*** According to HKPC's Guidebook for Organising Public Training Programme (Guidebook), proposals shall be prepared for all new public training programmes and submitted to the management for approval. Audit examined the enrolment rates of 30 of the 120 public training programmes organised in 2018-19 and found that: (a) for 10 (33%) programmes, the estimated enrolment was not included in the proposals; and (b) for the remaining 20 (67%) programmes, the actual enrolment of 12 (60%) of these 20 programmes were less than the estimated enrolment included in the proposals (about 15% to 92% of the estimated enrolment, 59% on average). Audit also found that 38 (32% of 120) programmes had fewer than ten participants. These 38 programmes included 15 with the estimated number of enrolment not included in the proposals and 8 with the estimated number of enrolment set below ten (paras. 4.14, 4.15, 4.17 and 4.18).

Executive Summary

16. *Market demand assessment not conducted for some programmes.* According to the Guidebook, the responsible division should conduct a market demand assessment to justify the launch of each new public training programme. Audit examined the proposals of 30 new public training programmes organised in 2018-19 and found that: (a) for 11 (37%) proposals, market demand assessment was not conducted; and (b) for 2 (7%) proposals, the programme organisers stated in the proposals that market demand assessments had been conducted. However, details and results of the market demand assessments could not be found in the proposals (paras. 4.21 and 4.22).

17. *Need to improve evaluation of training programmes.* According to the Guidebook, all public training programmes organised would be subject to programme-end evaluation by the trainees. Results from the evaluation forms are input into the Public Training Administration (PTA) system for review by the Officer-in-charge (OIC) of the programme and management. The OIC of each programme conducts an annual review to determine whether the programme should be continued in the coming year. There were no internal guidelines on whether the evaluation data of corporate training programmes should also be kept in the PTA system (paras. 4.28 and 4.30). Audit found that in the period from 2015-16 to 2018-19:

- (a) the evaluation data of 242 (43%) of the 559 public training programmes organised were not available in the PTA system. While the evaluation data of 65 (19%) of the 340 corporate training programmes organised were also kept in the PTA system and used for the computation of the overall participants satisfaction index (i.e. one of the KPIs for training programmes), the evaluation data of the remaining 275 (81%) corporate training programmes were not kept in the PTA system (paras. 4.29 and 4.30);
- (b) the annual response rate of the evaluation forms decreased from 51% in 2015-16 to 43% in 2018-19 (para. 4.32); and
- (c) annual reviews had not been conducted for some public training programmes, ranging from 9% to 33% of the programmes organised in each year (para. 4.35).

Executive Summary

18. *Need to improve utilisation of training venues.* Apart from training programmes organised by HKPC, the training venues of HKPC are also available for use by outside organisations. Audit found that the overall utilisation rates of HKPC training venues in 2017-18 and 2018-19 were low (i.e. 17% and 16% respectively). In particular, the utilisation rate of each and every training venue was less than 50% during both office hours and non-office hours (paras. 4.39 and 4.41).

Audit recommendations

19. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Executive Director, HKPC should:**

Provision of consultancy and manufacturing support services

- (a) **when there is a change in the definition of a performance indicator, review the performance target and inform ITC and the Council of the change and its effect (para. 2.27(a)(i) to (iii));**
- (b) **take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance (para. 2.27(b));**
- (c) **promulgate guidelines on the basis of determining fee concession rate for each project (para. 2.27(c));**
- (d) **take measures to ensure that consultancy projects are completed in a timely manner with full cost recovered in accordance with HKPC Standard Practices (para. 2.27(d) to (f));**
- (e) **tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected (para. 2.47(a));**
- (f) **step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis and take measures to promote the utilisation of the equipment (para. 2.47(b) and (d));**

Executive Summary

Research and development projects

- (g) **issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement (para. 3.14(a));**
- (h) **examine the suitability of using the number of on-going projects as a KPI (para. 3.14(b));**
- (i) **take measures to ensure that Progress Reports and Final Reports of ITF funded R&D projects are submitted to ITC in a timely manner (para. 3.14(d));**
- (j) **explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered (para. 3.28(b));**
- (k) **consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately (para. 3.28(c));**
- (l) **report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year (para. 3.28(d));**
- (m) **endeavour to increase the number of licence/royalty agreements (para. 3.28(e));**

Provision of training programmes

- (n) **step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes (para. 4.12(a));**
- (o) **step up efforts to improve the enrolment rates of public training programmes and consider their worthiness before organising programmes with very few expected participants (para. 4.26(a) to (d));**

Executive Summary

- (p) ensure that the Guidebook accurately stipulates the types of new public training programmes requiring market demand assessment and the requirements are complied with (para. 4.26(e) and (f));
- (q) take measures to improve the evaluation of training programmes (para. 4.37(a) to (d)); and
- (r) step up efforts to improve the utilisation of the training venues (para. 4.44(a) and (b)).

20. Audit has *recommended* that CIT should, in connection with the reviews of manufacturing support projects by HKPC, consider whether ITC should take appropriate follow-up actions on the sponsorship issue identified by HKPC (para. 2.48).

Response from HKPC and the Government

21. The Executive Director, HKPC and CIT agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 In the 1960s, with the predominance of family-owned small operations in the manufacturing sector, the Government saw the need to provide organised facilities to support the further development of Hong Kong industry. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. According to section 4 of the HKPC Ordinance, the functions of HKPC shall be:

- (a) to promote the increased productivity of industry in Hong Kong and to encourage the more efficient utilisation of resources therein;
- (b) to consider matters affecting productivity of industry in Hong Kong;
- (c) to advise the Chief Executive (CE) of the Hong Kong Special Administrative Region concerning the productivity of industry in Hong Kong and measures designed to increase it;
- (d) to consult with, co-ordinate and assist the activities of persons or organisations, either in Hong Kong or elsewhere, engaged in the study, development or dissemination of programmes, methods or techniques designed to increase productivity in industry; and
- (e) to take on productivity related assignments elsewhere than in Hong Kong subject to the conditions that:
 - (i) the work can be carried out without prejudice to the performance by HKPC of the functions referred to in (a) to (d) above; and

Introduction

- (ii) the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred in carrying out that work, which costs shall include direct costs (recurrent and capital) and overhead costs.

Consultancy Study of 2002

1.3 Since the early 1980s, more and more Hong Kong manufacturers had relocated their factories to the Pearl River Delta Region and their Hong Kong offices became headquarters for manufacturing support and other higher value-adding activities (e.g. product design, procurement, marketing, quality control, etc.). In June 2001, in the light of the rapidly evolving economic landscape of Hong Kong, HKPC commissioned a Consultancy Study to review its role, management and operation to ensure its effectiveness in fulfilling its public mission and delivering its services to meet the need of its clients and the economy as a whole.

1.4 The Consultancy Study was completed in April 2002. The study recommended that HKPC's future service focus should be on providing integrated support to innovative and growth oriented Hong Kong firms across the value chain. The main sectoral focus should be on manufacturing firms, particularly those in Hong Kong's foundation industries (Note 1), and related service activities. According to the study:

- (a) a role in relation to the manufacturing value chain fitted better with HKPC's existing competencies; and
- (b) this provided a sharp service focus and ensured that the manufacturing sector, which was vital to Hong Kong's prosperity, was properly supported.

HKPC accepted the recommendations of the study.

Note 1: *According to the Consultancy Study, Hong Kong's foundation industries included electronics, machinery and equipment, toys and plastics, textiles and clothing.*

Memorandum of Administrative Arrangements with the Government

1.5 In March 2003, the Government and HKPC entered into a Memorandum of Administrative Arrangements (MAA). MAA provides a framework for the relationship between the Government and HKPC and sets out in detail the responsibilities of each party. Following the recommendations of the 2002 Consultancy Study (see para. 1.4), MAA states that:

- (a) the provisions of MAA are founded on the principle that HKPC should have autonomy and flexibility in utilising its funds and resources insofar as it is not inconsistent with the provisions of the HKPC Ordinance;
- (b) the service focus of HKPC is to provide integrated support to innovative and growth oriented Hong Kong firms across the value chain, with the sectoral focus on manufacturing, particularly in Hong Kong's foundation industries, and related service activities, and the main geographical focus on Hong Kong and the Pearl River Delta in Mainland China;
- (c) HKPC may keep as reserves any savings from its annual block grant arising from any reasons other than a curtailment or cessation of activity stated in its Annual Programme and Estimates (see para. 1.11), or reduction in remuneration for its staff as a consequence of any civil service's pay adjustment; and
- (d) at any one point in time the level of reserves shall not exceed 15% of HKPC's annual block grant in the current financial year. Amount in excess of the limit shall be returned to the Government in the following financial year.

1.6 In June 2009, the Government and HKPC renewed MAA. A number of revisions were made to MAA including, for example, removal of the clause that required HKPC to use part of its subvention obtained from the Government to fund the recurrent operating cost of the Clothing Technology Demonstration

Introduction

Centre Company Limited (Note 2). However, the salient features mentioned in paragraph 1.5 remained unchanged.

Recent initiatives of HKPC

1.7 In the 2016 Policy Address, CE said that re-industrialisation was a potential new area of economic growth for Hong Kong and announced that HKPC would facilitate industrial upgrading and transformation, enabling enterprises to embrace re-industrialisation and move towards high value-added production. Examples of major initiatives introduced by HKPC in 2017 and 2018 to facilitate the Government's policy direction of re-industrialisation included:

- (a) establishing the “Smart Industry One” (see Photograph 1) in August 2017 to showcase the concept and features of the Fourth Industrial Revolution;
- (b) establishing the “Inno Space” (see Photograph 2) in October 2017 to provide working space and technical support for start-ups, students and graduates so as to help them develop their innovative ideas into industrial designs; and
- (c) launching the “Smart Industry One Consortium” exchange platform in March 2018 to enable the industry to keep abreast of the latest development on smart industry.

Note 2: *Clothing Technology Demonstration Centre Company Limited was a subsidiary of HKPC, which served to demonstrate technologies and production systems with a view to improving the efficiency of the textile and garment sectors. The Council (see para. 1.8) decided that the company had completed its mission and the company was wound up in October 2008.*

Photograph 1

Smart Industry One of HKPC



Source: HKPC records

Photograph 2

Inno Space of HKPC



Source: HKPC records

Governance and management

1.8 The Council is the governing body of HKPC. According to the HKPC Ordinance, the Council shall consist of not more than 23 members appointed by CE (Note 3), comprising a Chairman, 17 persons representing management, labour and professional or academic interests, and not more than five public officers (Note 4). The Council meets three times a year and is supported by four Committees:

- (a) ***Audit Committee.*** The responsibilities of this Committee include monitoring and making recommendations to enhance HKPC's healthy corporate governance. As at 31 March 2019, there were seven members in this Committee;
- (b) ***Business Development Committee.*** The responsibilities of this Committee include reviewing the business activities of HKPC, exploring new business opportunities, and recommending the three-year strategic plan of HKPC to the Council. As at 31 March 2019, there were eight members in this Committee;
- (c) ***Finance Committee.*** The responsibilities of this Committee include monitoring the financial performance of HKPC, making recommendations on HKPC's Three-year Forecast (see para. 1.11) and Annual Programme and Estimates, and the transfer of funds between major heads of expenditure, for consideration by the Council. It also advises the Council on matters relating to HKPC's financial policies and matters that have a significant financial impact on HKPC. As at 31 March 2019, there were eight members in this Committee; and
- (d) ***Staffing Committee.*** The responsibilities of this Committee include appointing staff and monitoring the staffing situation. It also advises the Council on human resources development policies and monitors HKPC's

Note 3: *The authority of CE to appoint members of the Council, other than the Chairman, has been delegated to the Secretary for Innovation and Technology.*

Note 4: *As at 31 March 2019, the five public officers appointed as Council members were: (a) the Permanent Secretary for Innovation and Technology; (b) the Commissioner for Innovation and Technology; (c) the Director-General of Trade and Industry; (d) the Government Economist; and (e) the Deputy Commissioner for Labour (Labour Administration).*

general terms and conditions of service. As at 31 March 2019, there were ten members in this Committee.

1.9 Under the HKPC Ordinance, the Council is given the power to appoint an Executive Director (ED) to be the chief administrative officer, other officers, servants and agents. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The organisation chart of HKPC as at 31 March 2019 is shown at Appendix A.

Role of the Commissioner for Innovation and Technology

1.10 The Commissioner for Innovation and Technology (CIT), who heads the Innovation and Technology Commission (ITC), is the Controlling Officer of the subventions granted to HKPC (see para. 1.15). As the Controlling Officer, CIT is responsible for ensuring that HKPC's activities accord with its objectives and relevant public policies and priorities, and that HKPC's policy objectives are appropriate. CIT may also advise HKPC on the need to review these objectives in the light of changes in the economic environment.

1.11 According to MAA, HKPC is required to submit to CIT annually a Three-year Forecast and an Annual Programme and Estimates. The Three-year Forecast should set out the strategic targets of HKPC, the plans to be adopted in achieving these targets and an assessment of their resource implications. On the other hand, the Annual Programme and Estimates should include proposed activities categorised in different programme areas and estimates of income and expenditure for the forthcoming financial year for the Government's approval.

1.12 Under the HKPC Ordinance, HKPC is also required to submit to the Government within six months after the end of each financial year, for tabling in the Legislative Council:

- (a) a report on its activities; and
- (b) a copy of its audited accounts.

HKPC Standard Practices

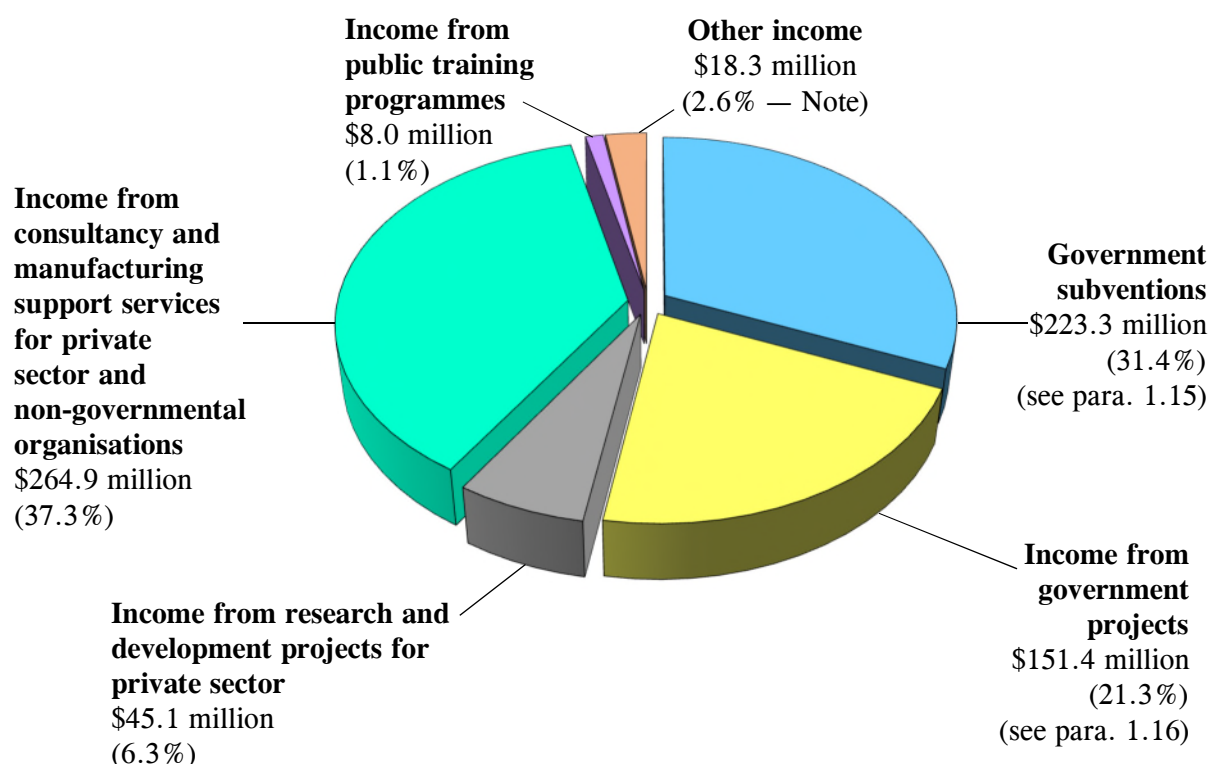
1.13 HKPC has issued a set of HKPC Standard Practices to provide guidance to staff for the proper administration and functioning of HKPC. HKPC Standard Practices stipulate the policies, regulations and procedures governing HKPC's operations (e.g. human resource and procurement management).

Income

1.14 In 2017-18, HKPC had a total income of \$711 million. Figure 1 provides an analysis of the sources of income.

Figure 1

**Analysis of total income of \$711 million of HKPC
(2017-18)**



Source: HKPC records

Note: Other income was mainly income from exhibitions and study missions, interest income and rental income.

1.15 The Government partly funds the operation of HKPC. In 2017-18, total government subventions received by HKPC amounted to \$223.3 million. The subventions comprised the following:

- (a) ***Recurrent subvention.*** This is provided to HKPC in the form of a cash-limited annual block grant. In 2017-18, HKPC received a recurrent subvention of \$201.9 million from ITC;
- (b) ***Subvention in addition to annual block grant.*** To enhance HKPC's services, additional subventions have been provided on top of the annual block grant on a time limited basis. In 2017-18, income recognised from ITC's additional subvention for Inno Space (see para. 1.7(b)) amounted to \$5.4 million (Note 5); and
- (c) ***Funding to the Automotive Parts and Accessory Systems Research and Development Centre (APAS)*** (Note 6). According to a Funding Agreement entered into between the Government and HKPC in March 2013, the Innovation and Technology Fund (ITF — Note 7) provides financial assistance to support the operation of APAS for the period from 1 April 2006 to 31 March 2021. In 2017-18, HKPC received \$16 million from ITF to cover the operating costs of APAS.

Note 5: *ITC's financial provision to HKPC in 2017-18 under the Government's General Revenue Account amounted to \$215.9 million, comprising a recurrent subvention of \$201.9 million and an additional subvention of \$14 million for the Inno Space. Of the \$14 million for the Inno Space, HKPC recognised \$5.4 million and \$8.6 million as its income in 2017-18 and 2018-19 respectively in accordance with its accounting policies.*

Note 6: *APAS was initially set up as an independent legal entity. In November 2012, it merged with HKPC and became a division of the Technology Development Branch of HKPC.*

Note 7: *ITF was established under the Public Finance Ordinance (Cap. 2) to finance projects that contribute to innovation and technology upgrading in the manufacturing and service industries, as well as those that contribute to the upgrading and development of the manufacturing and service industries.*

Introduction

1.16 In addition to government subventions, HKPC also received the following income from the Government:

- (a) ***Income from government funding schemes.*** These mainly represented ITF funded research and development (R&D) projects initiated by HKPC. In 2017-18, project funding from ITF amounted to \$57.9 million;
- (b) ***Consultancy services for government bureaux/departments (B/Ds).*** These mainly represented consultancy services engaged by B/Ds through competitive bidding processes. For example, the Highways Department engaged HKPC to develop a robot system for placement and collection of traffic cones and lanterns in road works (see Photograph 3). In 2017-18, income from consultancy services for B/Ds amounted to \$65.7 million; and
- (c) ***Secretariat services for government funding schemes*** (Note 8). Services provided by HKPC included planning and organising publicity and promotional activities, receiving and undertaking initial vetting of applications, monitoring the progress of approved projects, and disbursing funds for the funding schemes. In 2017-18, income from secretariat services for government funding schemes amounted to \$27.8 million.

Note 8: *In 2017-18, HKPC provided secretariat services for four government funding schemes, namely: (a) Cleaner Production Partnership Programme; (b) Dedicated Fund on Branding, Upgrading and Domestic Sales; (c) Recycling Fund; and (d) Retail Technology Adoption Assistance Scheme for Manpower Demand Management.*

Photograph 3

A consultancy project on robot system engaged by the Highways Department



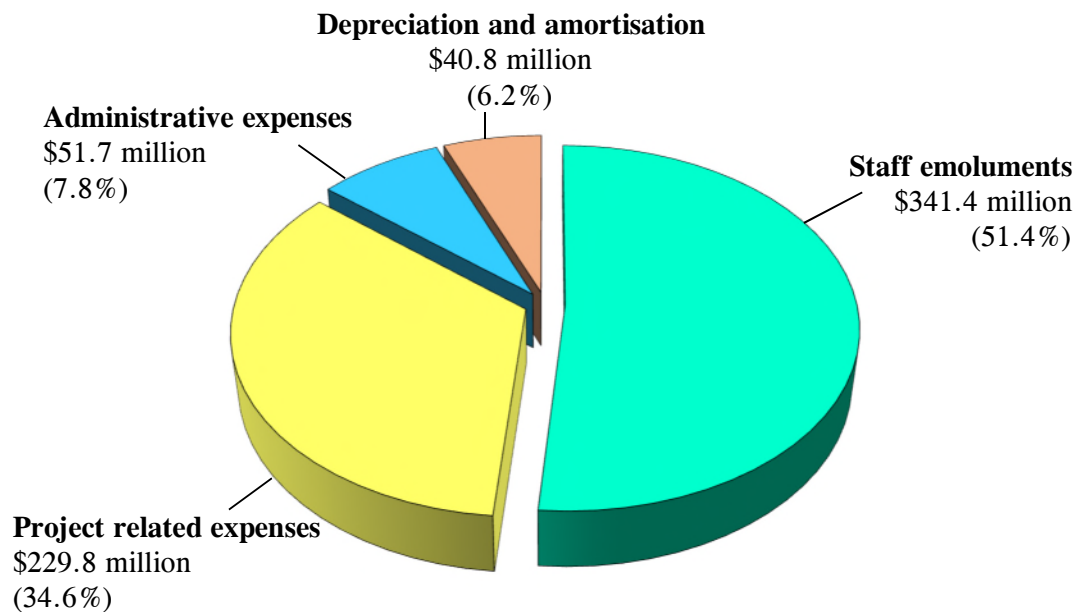
Source: HKPC records

Expenditure

1.17 In 2017-18, HKPC had a total expenditure of \$663.7 million. Figure 2 provides an analysis of the expenditure.

Figure 2

**Analysis of total expenditure of \$663.7 million of HKPC
(2017-18)**



Source: HKPC records

Audit review

1.18 In 2009, the Audit Commission (Audit) completed a review of HKPC and reported the results in Chapter 7 and Chapter 8 of the Director of Audit's Report No. 53 of October 2009.

1.19 In March 2019, Audit commenced a review of HKPC. The findings of this audit review are contained in two separate Audit Reports, as follows:

- (a) "Provision of consultancy, research and development and training services by the Hong Kong Productivity Council" (the subject matter of this Audit Report); and
- (b) "Governance and administrative issues of the Hong Kong Productivity Council" (Chapter 3 of the Director of Audit's Report No. 73).

1.20 This Audit Report focuses on the following areas:

- (a) provision of consultancy and manufacturing support services (PART 2);
- (b) research and development projects (PART 3); and
- (c) provision of training programmes (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from HKPC

1.21 ED, HKPC agrees with all the issues raised in the two Audit Reports and accepts the corresponding recommendations. He has said that he greatly appreciates the tremendous efforts made by Audit in conducting the review. The areas covered are comprehensive and the recommendations made are useful and constructive. HKPC attaches great importance to the audit recommendations, and has drawn up a detailed action plan with full consultation to the HKPC Council on it. Follow-up actions have been taken immediately in respect of some of the audit recommendations, whilst further concrete actions have been scheduled to implement the rest.

General response from the Government

1.22 CIT agrees with the audit recommendations. She has said that:

- (a) the Government appreciates the audit review on the administration and operation of HKPC. ITC is grateful for the observations and recommendations, which will help HKPC improve its corporate governance, financial and human resources management, management of consultancy and manufacturing support services, performance measurement and commercialisation of results of R&D projects, as well as provision of training services in order to serve the industry more effectively and efficiently; and

Introduction

- (b) HKPC has informed the Government that it accepts all the recommendations as set out in the two Audit Reports. ITC will work closely with HKPC to ensure the early implementation of improvement measures as appropriate.

Acknowledgement

1.23 Audit would like to acknowledge with gratitude the full cooperation of the staff of ITC and HKPC during the course of the audit review.

PART 2: PROVISION OF CONSULTANCY AND MANUFACTURING SUPPORT SERVICES

2.1 This PART examines the provision of consultancy and manufacturing support services by HKPC. Audit found room for improvement in the following areas:

- (a) management of consultancy services (paras. 2.2 to 2.28); and
- (b) management of manufacturing support services (paras. 2.29 to 2.50).

Management of consultancy services

2.2 HKPC provides consultancy services to clients mainly through two types of consultancy projects:

- (a) advisory projects to provide professional help and advice to clients (e.g. problem diagnosis and solution recommendation); and
- (b) development projects to develop products or systems for clients.

2.3 In 2017-18, the total income from consultancy services provided to clients in the private sector and non-governmental organisations amounted to \$244.9 million. In addition, HKPC also provided consultancy services to B/Ds and secretariat services for government funding schemes. In 2017-18, income from these services were \$65.7 million and \$27.8 million respectively (see para. 1.16(b) and (c)).

Target on number of consultancy projects accepted not met

2.4 According to MAA:

- (a) to ensure that the subventions from the Government are used in a cost-effective manner for the provision of services, HKPC shall propose for CIT's approval a set of performance indicators for measuring the progress of HKPC's activities;
- (b) HKPC shall submit to CIT a report on its achievements with regard to the performance indicators. These indicators provide important reference for planning and measuring the progress of the activities undertaken by HKPC and for facilitating the assessment and approval of HKPC's Annual Programme and Estimates by the Government; and
- (c) if HKPC fails to achieve agreed performance targets, HKPC shall provide explanations for such failures to the satisfaction of CIT.

2.5 HKPC has set six key performance indicators (KPIs) for consultancy services in the Annual Programme and Estimates approved by the Council and CIT:

- (a) customer satisfaction index;
- (b) income from consultancy projects;
- (c) income per consultancy project in progress;
- (d) number of consultancy projects accepted;
- (e) number of theme-based industry consultation organised; and
- (f) percentage of customers giving a score of 7.5 or above out of 10 in terms of productivity gain.

Provision of consultancy and manufacturing support services

2.6 Audit reviewed whether the targets on these KPIs were met and found that there was room for improvement in achieving the KPI “Number of consultancy projects accepted” (see para. 2.5(d)):

- (a) although the target had been adjusted downwards every year during the four-year period 2014-15 to 2017-18 (from 1,250 in 2014-15 to 968 in 2017-18), the number of consultancy projects accepted did not meet the target throughout the period; and
- (b) the target was further adjusted downwards to 935 in 2018-19, and the actual number of consultancy projects accepted then met the target (see Table 1).

Table 1

**Number of consultancy projects accepted
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19
Target (a)	1,250	1,070	1,020	968	935
Actual (b)	970	917	948	699	944
Actual as a percentage of target (c) = (b) ÷ (a) × 100 %	78 %	86 %	93 %	72 %	101 %

Source: HKPC records

2.7 Audit reviewed the reason for the 35% increase in the number of consultancy projects accepted from 699 in 2017-18 to 944 in 2018-19. Audit found that at a management meeting chaired by ED in July 2018, it was decided that in order to catch up with the target, manufacturing support projects (e.g. laboratory testing) with service fees over \$5,000 would be regarded as consultancy projects. Accordingly, 141 such manufacturing support projects were classified as consultancy projects in 2018-19. If these projects had not been so classified, the number of consultancy projects accepted in 2018-19 would have been only 803, falling short of the target of 935. Moreover, the target of 935 was not revised according to the new definition of consultancy projects to achieve a like-with-like comparison between the target number and the actual number.

Provision of consultancy and manufacturing support services

There was no documentary evidence showing that the Council or ITC had been informed of the change in the definition. There was also no disclosure of the effect of the change in classifications on the achievement of the target on the KPI “Number of consultancy projects accepted” in reporting the performance in the annual review report submitted to CIT and the Council.

2.8 In response to Audit’s enquiry, HKPC informed Audit in September 2019 that before the management meeting in July 2018 (see para. 2.7), HKPC had conducted a review on the definition of consultancy projects. It was proposed that the KPI “Number of consultancy projects accepted” should include manufacturing support projects with service fees over \$5,000 because such projects very often contained consultancy elements.

2.9 The change in the definition of consultancy projects has a significant impact on the performance measurement of HKPC as it affected HKPC’s achievement on the KPI targets (see para. 2.7). Audit considers that when there is a change in the definition of a performance indicator, the performance target should be reviewed to ascertain whether a corresponding revision is necessary. HKPC also needs to inform ITC and the Council of the change and the justifications for the change, and disclose the effects of the change on achievement of KPI target in the annual review report submitted to CIT and the Council.

Some assignments taken on elsewhere than in Hong Kong did not recover all costs incurred

2.10 According to the HKPC Ordinance, productivity related assignments elsewhere than in Hong Kong shall not be taken on unless the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred (see para. 1.2(e)). Moreover, HKPC Standard Practices stipulate that the minimum fees charged for overseas projects must be sufficient to recover all direct and overhead costs plus a contingency factor.

2.11 HKPC records all overseas projects separately and prepares individual project reports for overseas projects at the end of each financial year. Audit reviewed the overseas project reports and noted that in the period from 2014-15 to 2018-19, HKPC completed 788 consultancy projects which were productivity related assignments

Provision of consultancy and manufacturing support services

elsewhere than in Hong Kong. Of these 788 consultancy projects, 308 (39%) did not recover all costs incurred (see Table 2).

Table 2
Consultancy projects outside Hong Kong
which did not recover all costs incurred
(2014-15 to 2018-19)

Year	No. of projects completed	Total deficit (\$'000)	Percentage of under-recovery of cost
2014-15	73	266	1.7%
2015-16	58	148	2.3%
2016-17	68	498	3.1%
2017-18	53	235	2.1%
2018-19	56	269	2.1%
Overall	308	1,416	2.3%

Source: Audit analysis of HKPC records

2.12 In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 308 consultancy projects outside Hong Kong that did not recover all costs incurred:

- (a) 257 (83%) were budgeted to recover all cost incurred. The actual deficits incurred were due to unexpected technical or execution difficulties; and
- (b) the remaining 51 (17%) had budgeted deficits. For 47 (92%) of the 51 projects, HKPC acted as the implementing agent of a government funding programme, which supported Hong Kong companies with manufacturing facilities in the Mainland. The programme lasted for more than five years and the inflationary factor built in at the quotation stage was insufficient to cover the subsequent increase in staff charging rates.

Provision of consultancy and manufacturing support services

2.13 Audit considers that HKPC needs to document the justifications for failing to recover all costs incurred for consultancy projects outside Hong Kong, and take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance.

Need to promulgate guidelines on fee concessions

2.14 According to HKPC Standard Practices, pricing for all forms of HKPC services should be based on the full-cost recovery principle and concessions can be applied if certain criteria are met. Details are as follows:

- (a) the maximum concessions to be offered:
 - (i) 35% for a start-up company (Note 9);
 - (ii) 30% for a small and medium enterprise (SME) not belonging to a listed company or itself not being a listed company. “SME” refers to a manufacturing business employing fewer than 100 persons in Hong Kong; or a non-manufacturing business employing fewer than 50 persons in Hong Kong; and
 - (iii) 20% for services involving technological developmental or business management developmental nature, or having other business reasons to justify concession. Under exceptional circumstances, ED might grant an additional concession of 10%.

For cases satisfying both (i) and (iii), the maximum concession is at 35%. For cases satisfying both (ii) and (iii), the maximum concession is 30%; and

- (b) 65% concessions for ITF funded projects.

Note 9: *According to HKPC Standard Practices, “start-up company” refers to a company registered in Hong Kong with less than two years of incorporation and not being a listed company or belonging to a listed company, local or outside Hong Kong.*

Provision of consultancy and manufacturing support services

2.15 In addition to the rules stipulated in HKPC Standard Practices, there were two other management decisions governing concessions:

- (a) a senior management meeting was held in June 2016 among ED, three branch directors, Head of Internal Audit and Risk Management Office (ARO) and the General Manager of the Corporate Communication and Marketing Division (currently known as Corporate Development Division). At the meeting, it was decided that HKPC should try to charge clients at price levels that achieve full-cost recovery without concession as far as practicable because HKPC had been falling behind the target on value added (i.e. margin between project income and expenses) for a number of years; and
- (b) in May 2017, the General Manager of the Management Consulting Division had given a blanket approval to offer 20% concessions to all projects undertaken by the Intellectual Property Services Centre (IPSC) of HKPC (Note 10).

However, the two decisions were not incorporated in HKPC Standard Practices.

2.16 Audit reviewed the 2,591 consultancy projects accepted in the period from 2016-17 to 2018-19 and noted that fee concessions were offered to the clients in 860 (33.2%) projects (see Table 3).

Note 10: *The services of IPSC include: (a) assisting clients to apply for patents and trademarks; (b) providing consultancy services in patent search and intellectual property management; and (c) acting as the implementation agent of ITC's Patent Application Grant, which subsidises local companies and individuals to apply for patents.*

Table 3

**Fee concessions offered to consultancy projects
(2016-17 to 2018-19)**

Fee concession	No. of consultancy projects accepted				
	2016-17	2017-18	2018-19	Overall	
0%	562 (59.3%)	499 (71.4%)	670 (71.0%)	1,731 (66.8%)	No. of projects with fee concessions offered: 860 (33.2%)
20%	247 (26.0%)	95 (13.6%)	259 (27.4%)	601 (23.2%)	
30%	121 (12.8%)	89 (12.7%)	14 (1.5%)	224 (8.7%)	
35%	— (0.0%)	1 (0.2%)	— (0.0%)	1 (0.0%)	
65%	18 (1.9%)	15 (2.1%)	1 (0.1%)	34 (1.3%)	
Total	948 (100.0%)	699 (100.0%)	944 (100.0%)	2,591 (100.0%)	

Source: HKPC records

2.17 Audit reviewed the consultancy projects accepted in 2018-19 and noted that the clients in 484 (51%) of the 944 projects accepted were companies with fewer than 50 employees in Hong Kong. According to HKPC Standard Practices, these clients were defined as SMEs and concessions of up to 30% could be offered to them (Note 11). Audit reviewed the concessions rates offered to the 484 SMEs and found that the rates were not consistent:

- (a) 221 (45.7%) were not offered any concession;
- (b) 250 (51.6%) were offered 20% concessions, all of which were projects undertaken by IPSC (see para. 2.15(b));

Note 11: *There was no information on how many clients were manufacturing business employing fewer than 100 employees but not fewer than 50 employees in Hong Kong. Moreover, there was also no readily available information on whether a client was a start-up company or whether the service provided for a project involved technological developmental or business management developmental nature.*

- (c) 12 (2.5%) were offered 30% concessions; and
- (d) 1 (0.2%) was offered a 65% concession.

2.18 In response to Audit's enquiry, HKPC informed Audit in September 2019 that concessions were offered on a client-by-client basis, taking into consideration the market situation and HKPC's business operations and financial situation. However, Audit noted that there was no documentary evidence showing the justifications for the different concession rates offered in each project.

2.19 Audit noted that HKPC Standard Practices only stipulated the maximum concessions that could be offered. Audit considers that HKPC needs to promulgate guidelines on the basis of determining the fee concession rate for each project to ensure that concessions are appropriately offered to clients on a consistent basis.

Delays in consultancy project completion

2.20 Audit examined the consultancy projects completed in the period from 2014-15 to 2018-19 and found that of the 4,299 consultancy projects completed, 1,243 (29%) were completed after the approved completion dates (Note 12) (see Table 4). According to HKPC, it strengthened the management control on project delays in mid-2018. Since then, all project delays have been reported to senior management. As a result, the percentage of projects with delay in project completion decreased to 14% in 2018-19. Audit considers that HKPC needs to ascertain the reasons why a considerable proportion of consultancy projects experienced delay and take appropriate measures to ensure that consultancy projects are completed in a timely manner.

Note 12: *The project manager of consultancy projects may seek the client's consent and obtain management's approval for extension of project completion date. The approved completion date refers to the original approved completion date or the approved extended completion date, where applicable.*

Table 4**Analysis of delays in consultancy projects completion
(2014-15 to 2018-19)**

Year	No. of projects completed	No. of projects with delay	Average duration of delay (Day)
2014-15	874 (100%)	273 (31%)	51
2015-16	746 (100%)	292 (39%)	43
2016-17	878 (100%)	301 (34%)	44
2017-18	866 (100%)	248 (29%)	37
2018-19	935 (100%)	129 (14%)	29
Overall	4,299 (100%)	1,243 (29%)	42

Source: Audit analysis of HKPC records

Remarks: The duration of delay was counted from the approved completion date to the actual completion date.

Costs incurred for consultancy projects not fully recovered

2.21 According to HKPC Standard Practices, fees for projects carried out should be charged on a full-cost recovery basis (Note 13). Audit noted that of the 4,299 consultancy projects completed in the period from 2014-15 to 2018-19, full cost was not recovered in 1,078 (25%) projects. The total deficit of these projects amounted to \$33 million (see Table 5). However, there was no documentary evidence showing the reasons for their deviations from the full-cost recovery basis.

Note 13: *For projects with concessions offered, the full costs will be calculated using the concession rates and the income received shall recover the full costs so calculated.*

Table 5

**Consultancy projects not achieving full-cost recovery
(2014-15 to 2018-19)**

Year of completion	No. of projects completed	No. of projects with deficit	Deficit (\$ million)
2014-15	874 (100%)	199 (23%)	3
2015-16	746 (100%)	176 (24%)	2
2016-17	878 (100%)	227 (26%)	4
2017-18	866 (100%)	254 (29%)	16
2018-19	935 (100%)	222 (24%)	8
Overall	4,299 (100%)	1,078 (25%)	33

Source: Audit analysis of HKPC records

2.22 In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 1,078 consultancy projects with deficits:

- (a) 923 (86%) were budgeted with full-cost recovery. The deficits were due to unexpected technical or execution difficulties; and
- (b) for the remaining 155 (14%), the deficits had been foreseen when the projects were accepted:
 - (i) 121 were accepted despite deficits in the budgets as they would allow HKPC to acquire new technical skills or enter into new industry segments; and
 - (ii) 34 were government funded projects to fulfil HKPC's public mission to serve the industry and hence cost recovery was not planned for.

2.23 Audit considers that HKPC needs to take appropriate measures to ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices. For projects which are accepted despite the fact that full-cost recovery is not expected, HKPC needs to ensure that they are fully justified with the justifications properly documented.

Costs incurred for terminated projects not fully recovered

2.24 Consultancy projects can be terminated by clients or HKPC prior to completion. It is a standard term in the agreement between a client and HKPC that in the event of project termination, the clients shall be liable to reimburse HKPC for all costs incurred up to the date of project termination. In the period from 2014-15 to 2018-19, 109 consultancy projects were terminated. In 58 (53%) of these 109 projects, the clients did not reimburse HKPC for all costs incurred up to the date of project termination. The total costs not reimbursed amounted to \$3 million, representing 27% of the total costs incurred for these projects. There was no documentary evidence showing the justifications for not seeking reimbursement from the clients. Case 1 shows an example.

Case 1

A terminated consultancy project where the client did not reimburse HKPC any cost (February to October 2018)

1. In February 2018, HKPC entered into an agreement with a client for a consultancy project for developing an electric device with a project fee of \$1,050,000. According to the project agreement:
 - (a) the client should make a down payment of \$400,000 to HKPC before the commencement of the project;
 - (b) the project agreement might be terminated by either party by giving one-month notice in writing; and
 - (c) in the event of project termination, the client should be liable to reimburse HKPC for all costs and expenses actually incurred up to the date of agreement termination.

Case 1 (Cont'd)

2. Following the receipt of down payment from the client, the project commenced in March 2018. In October 2018, the project manager sought the Director of the Digital Branch's approval for terminating the project because:

- (a) the client had changed the product design several times. The project team was of the view that the product design proposed by the client could not be accepted because of risk, cost and functional consideration; and
- (b) the project team expected that there would be other difficulties with the client.

3. The project team also informed the Director of the Digital Branch that upon the project termination, it would hand over the semi-finished deliverables to the client and fully refund the down payment of \$400,000 to the client. The project team, however, did not state the justification for the handover of the semi-finished deliverables free of charge and the full refund of down payment without any deduction of the costs incurred for the project. The Director of the Digital Branch approved the termination of the project, together with the handover of all semi-finished deliverables and the full refund of the down payment without deducting the costs incurred.

Audit comments

4. Up to the termination of the project in October 2018, the total cost incurred by HKPC for the project amounted to \$254,000. According to the project agreement, in the event of project termination, the client should be liable to reimburse HKPC for all costs incurred up to the date of project termination. However, HKPC did not request the client to reimburse HKPC for the costs incurred and there was no documentary evidence showing the justifications for not doing so.

Source: Audit analysis of HKPC records

Provision of consultancy and manufacturing support services

2.25 In response to Audit's enquiry, HKPC informed Audit in September 2019 that of the 58 terminated projects where the clients did not reimburse HKPC for all costs incurred:

- (a) in 55 projects, the deficits were resulted from project issues not due to the clients such as extra manhours on project R&D work with learning element on HKPC's part, technical and project execution challenges causing the deliverable not meeting project requirement, extra project preparation work, etc. HKPC considered that it might not have strong valid grounds to recover the costs from the clients;
- (b) in two projects, the project work was continued in another two projects from which all costs incurred had been recovered; and
- (c) in one project, the client was liquidated.

2.26 Audit considers that HKPC needs to take measures to ensure that where appropriate, costs incurred for terminated projects are reimbursed by clients according to the project agreements. For terminated projects where the waiver of the requirement on the clients to reimburse HKPC for the costs incurred is justified, the justifications and the approval for granting the waiver shall be properly documented.

Audit recommendations

2.27 **Audit has *recommended* that ED, HKPC should:**

- (a) **when there is a change in the definition of a performance indicator:**
 - (i) **review the performance target to ascertain whether a corresponding revision is necessary;**
 - (ii) **inform ITC and the Council of the change and the justifications for the change; and**
 - (iii) **disclose the effects of the change on achievement of KPI target in the annual review report submitted to CIT and the Council;**

- (b) document the justifications for failing to recover all costs incurred for consultancy projects outside Hong Kong, and take measures to ensure that the minimum rate charged for productivity related assignments elsewhere than in Hong Kong is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance;
- (c) promulgate guidelines on the basis of determining fee concession rate for each project to ensure that concessions are appropriately offered to clients on a consistent basis;
- (d) ascertain the reasons why a considerable proportion of consultancy projects experienced delay and take appropriate measures to ensure that consultancy projects are completed in a timely manner;
- (e) take appropriate measures to ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices;
- (f) for projects which are accepted despite the fact that full-cost recovery is not expected, ensure that they are fully justified with the justifications properly documented;
- (g) take measures to ensure that where appropriate, costs incurred for terminated projects are reimbursed by clients according to the project agreements; and
- (h) for terminated projects where the waiver of the requirement on the clients to reimburse HKPC for the costs incurred is justified, ensure that the justifications and the approval for granting the waiver are properly documented.

Response from HKPC

2.28 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) when there is a change in the definition of a performance indicator, HKPC will:
 - (i) document clearly the reasons for the change;
 - (ii) review the performance target to ascertain whether a corresponding revision is necessary;
 - (iii) inform ITC and the Council of the change and the impact if the change will affect the performance of KPIs; and
 - (iv) disclose the effect of the change on achievement of KPI target in the annual review report submitted to CIT and the Council;
- (b) of the 308 consultancy projects outside Hong Kong which did not recover all costs incurred (see para. 2.11), 286 (93%) were either for Hong Kong enterprises or their subsidiaries in Guangdong;
- (c) for productivity related assignments elsewhere than in Hong Kong, HKPC will remind its staff to:
 - (i) monitor project cost closely to ensure full-cost recovery of projects and to document the justifications for failing to recover all costs incurred; and
 - (ii) ensure that the minimum rate charged is sufficient to recover all costs incurred as stipulated by the HKPC Ordinance;
- (d) HKPC will state the criteria and the requirements for applying the concession in a more precise fashion in HKPC Standard Practices;

Provision of consultancy and manufacturing support services

- (e) in view of the fact that the growth in value added of HKPC has become steady in the recent two years, and that the economic outlook for SMEs has significantly deteriorated, the management of HKPC decided in September 2019 that it would offer 30% concession on labour rate to all SMEs in Hong Kong for consultancy projects, R&D projects and testing services. All new projects for SME clients will be subject to the same level of concession on labour rate and this measure will be continued until the end of March 2020. HKPC will review the impact of this measure on the value added of HKPC;
- (f) some projects were delayed because the clients requested more time for project execution. All project delays will be reported to the Directorate Office on a monthly basis with justifications; and
- (g) HKPC will remind its staff to:
 - (i) ensure that consultancy projects are completed with full cost recovered in accordance with HKPC Standard Practices;
 - (ii) document justifications for accepting those projects for which full-cost recovery is not expected; and
 - (iii) request clients of terminated projects to reimburse cost incurred and seek management's written approval for exception.

Management of manufacturing support services

2.29 HKPC provides manufacturing support services through:

- (a) ***Manufacturing support projects.*** These mainly include projects that provide testing, machining and other professional support services to clients (e.g. laboratory testing); and
- (b) ***Theme-based manufacturing support services.*** Apart from manufacturing support projects, HKPC has recently introduced various theme-based initiatives as part of its manufacturing support services to the industry. For example, HKPC established Inno Space in October 2017 to provide

Provision of consultancy and manufacturing support services

workspace and technical support to users and assist them in developing innovative ideas into industrial design (see para. 2.37).

2.30 In 2017-18, the total income from manufacturing support services provided to clients in the private sector and non-governmental organisations was \$20 million.

2.31 As part of the manufacturing support services of HKPC, clients of manufacturing support projects may use HKPC's manufacturing supporting facilities (see Table 6). HKPC charges these manufacturing support projects on a full-cost recovery basis.

Table 6

**Facilities for manufacturing support projects
(31 March 2019)**

Division	Facility
Automotive and Electronics Division (AED)	Electromagnetic Compatibility Centre
	Optics Manufacturing Workshop (OMW)
	Reliability Testing Centre
Environmental Management Division	Environmental and Product Innovation Laboratory
	Textile and Apparel Testing Service Centre
Smart Manufacturing and Mainland Business Division	3D Printing Centre
	Advanced Surface Technology Development Centre
	Conformal Cooling Technology Centre
	Materials Testing Laboratory
	Metal Injection Moulding Centre
	Plastics Technology Centre
	Watch and Clock Testing Centre

Source: HKPC records

Need to tighten controls on services provided for manufacturing support projects

2.32 In September 2018, the General Manager of AED found that a staff (Staff A) did not record some of the workshop service income of OMW. Upon enquiry, Staff A said that he intended to record the income as sponsorship for an ITF project of which he was in charge. Staff A resigned from HKPC with his last working day being 30 September 2018.

2.33 In response to the incident, HKPC's ARO conducted a review of all workshop services provided by OMW in the period from July 2016 to September 2018. In March 2019, ARO reported to the HKPC Audit Committee that Staff A had not billed Clients A and B after providing services to them with a total value of \$200,000 and \$70,000 respectively. During the same period, Clients A and B had provided \$200,000 and \$70,000 respectively as sponsorships for two ITF projects of which Staff A was in charge.

2.34 In March 2019, HKPC issued bills to Clients A and B demanding the payments of the outstanding service fees. Client A said that it was an agreed arrangement with Staff A that, in exchange for the services provided by OMW, Staff A received \$200,000 from Client A as sponsorships for two ITF funded R&D projects of which he was in charge. In the event, Clients A and B had not settled the bills.

2.35 According to the Guide to Filling in the Application Forms issued by ITC, the minimum industry sponsorship for an ITF project shall be 10% of the total project cost. For the two ITF projects in this case, Audit noted that the minimum sponsorship requirement would not have been met if the \$200,000 and \$70,000 had been accounted for as workshop service income instead of sponsorships.

2.36 Audit considers that HKPC needs to review manufacturing support projects to identify services provided that were not billed. HKPC also needs to tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected. Audit also considers that, in connection with the reviews by HKPC, ITC needs to consider whether appropriate follow-up actions on the sponsorship issue identified by HKPC are required.

Manufacturing support services provided by Inno Space

2.37 In the 2017 Policy Address, the Government announced that it would establish Inno Space with HKPC in order to support a start-up culture and re-industrialisation. Inno Space was established in October 2017 to provide manufacturing support services to users not engaged in manufacturing support projects (see para. 2.29(a)). The Government had provided \$17.8 million to support the operation of Inno Space up to March 2019. Since April 2019, Inno Space has been operated by HKPC on a self-recovery basis (i.e. the Government no longer provides any funding for Inno Space and any surplus or deficit of Inno Space is recognised by HKPC). The services of Inno Space include:

- (a) providing start-ups, makers and designers with equipment and machinery for developing prototypes;
- (b) providing business training for entrepreneurs and start-ups;
- (c) providing a focal point for developing an eco-system for the start-up community; and
- (d) providing technical advisory services on patent application, standard compliance, testing and production.

2.38 Inno Space is located in the HKPC Building in Kowloon Tong, which consists of the following three areas with a total area of approximately 8,000 square feet:

- (a) ***Inno Idea.*** An area where members can hold meetings, design products and develop mobile applications (see Photograph 4);
- (b) ***Inno Network.*** An event space for workshops, seminars and networking (see Photograph 5); and
- (c) ***Inno Prototype.*** An area where equipment items are available for members to create prototypes (see Photograph 6).

Photograph 4

Inno Idea



Source: HKPC records

Photograph 5

Inno Network



Source: HKPC records

Photograph 6

Inno Prototype



Source: HKPC records

Provision of consultancy and manufacturing support services

2.39 Users are required to register as a member and pay membership fees (Note 14) before they can use the facilities of Inno Space (see Table 7).

Table 7

**Membership scheme of Inno Space
(31 March 2019)**

Validity period	Membership fee
One-month free trial (for new members only)	Free of charge
One day	\$20 to \$200
Seven days	\$100 to \$650
One month	\$200 to \$800
Three months	\$600 to \$1,920
Six months	\$1,200 to \$3,360
12 months	\$2,400 to \$4,800

Source: HKPC records

Target on the income of Inno Space not met

2.40 HKPC has set five performance indicators for Inno Space:

- (a) income;
- (b) number of events;
- (c) number of members recruited;

Note 14: *There are three tiers of membership for Inno Space, namely: (a) Creator; (b) Partner Creator (for members of partner organisations); and (c) Student Creator (for full-time students aged 16 or above). Membership fees for Partner Creators and Student Creators are charged at discount prices.*

Provision of consultancy and manufacturing support services

(d) number of partner organisations; and

(e) number of visitors.

2.41 In 2018-19, Inno Space did not meet two of the five performance targets (see Table 8).

Table 8
Performance of Inno Space
(2018-19)

Performance indicator	Target (a)	Actual (b)	Actual as a percentage of target (c)=(b)÷(a)×100 %
Income	\$532,000	\$319,000	60 %
No. of events	48	52	108 %
No. of members recruited	200	450	225 %
No. of partner organisations	20	10	50 % (Note)
No. of visitors	7,200	16,682	232 %

Source: Audit analysis of HKPC records

Note: According to the 2019-20 Annual Plan of Inno Space, HKPC will actively approach potential partners in 2019-20 with a view to increasing the number of partner organisations.

2.42 Membership fee was the main source of income of Inno Space other than government subvention. Audit noted that in 2018-19, while the number of members recruited exceeded the target of 200 by 125%, the income fell short of the target by 40%. Audit analysed the number of members recruited in 2018-19 and found that of the 450 members recruited in 2018-19, 236 (52%) were trial members who were not required to pay any membership fee.

2.43 Audit considers that HKPC needs to step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis.

Need to improve the booking system for the equipment of Inno Space and promote utilisation

2.44 As at 31 March 2019, there were 25 items of equipment available for booking by members. The total acquisition cost of the equipment was \$4 million. According to the rules of Inno Space, a member can book items of equipment for intervals of 30 minutes for up to four hours per week for each item of equipment. A booking logbook is maintained for each item of equipment. Audit reviewed the logbooks of 2018-19 and found that in some cases, when a member made a booking, the logbook only recorded the date on which the member intended to use the equipment without recording the time of the intended usage. This was not satisfactory because:

- (a) the item of equipment may be mistaken as not available for booking throughout all the 30-minute intervals on the same date; and
- (b) it was not possible to ensure that the booking of the member did not exceed four hours per week for the booked item of equipment.

2.45 Audit reviewed the 2018-19 booking records of ten items of equipment with total cost of \$2.4 million and analysed the number of days on which they were booked. Audit found that of the 297 available days in 2018-19, the number of days on which the items of equipment were booked was only 26 (8.8% of the available days for booking) on average, ranging from 1 (0.3%) to 138 (46.5%) (see Table 9). When an item of equipment was booked on a particular day, information was not available on how many 30-minute intervals the equipment was used.

Provision of consultancy and manufacturing support services

Table 9

**Booking records of ten items of equipment of Inno Space
(2018-19)**

Equipment	Purchase cost	No. of days on which the equipment was booked	Percentage of days on which the equipment was booked
	(\$)	(a)	(Note)
			(b) = (a) ÷ 297 days × 100%
1. Drilling machine	5,000	1	0.3%
2. Grinding machine	77,000	1	0.3%
3. Vacuum forming machine	147,000	3	1.0%
4. Sewing machine	17,000	4	1.3%
5. Laser welding machine	196,000	14	4.7%
6. Sand blasting machine	26,000	17	5.7%
7. Metal laser cutting machine	1,073,000	21	7.1%
8. Milling machine	50,000	26	8.8%
9. Professional 3D printer	600,000	32	10.8%
10. Laser cutting (plastic and wood) machine	200,000	138	46.5%
	Average	26	8.8%

Source: Audit analysis of HKPC records

Note: In 2018-19, there were 297 days on which the equipment was available for booking.

2.46 Audit considers that HKPC needs to take measures to improve the booking system of the equipment of Inno Space and promote the utilisation of the equipment.

Audit recommendations

2.47 Audit has *recommended* that ED, HKPC should:

- (a) review manufacturing support projects to identify services provided that were not billed, and tighten controls on services provided for manufacturing support projects to ensure that all service fees are collected;
- (b) step up efforts to ensure the sustainable operation of Inno Space on a self-recovery basis;
- (c) take measures to improve the booking system of the equipment of Inno Space; and
- (d) take measures to promote the utilisation of the equipment of Inno Space.

2.48 Audit has *recommended* that CIT should, in connection with the reviews of manufacturing support projects by HKPC, consider whether ITC should take appropriate follow-up actions on the sponsorship issue identified by HKPC.

Response from HKPC

2.49 ED, HKPC agrees with the audit recommendations in paragraph 2.47. He has said that:

- (a) HKPC will review all manufacturing support projects with a view to ensuring that all services provided in the past were paid for and take measures to ensure that in future, all service fees are collected;
- (b) while it was expected that HKPC would operate Inno Space on a self-recovery basis after the Government had provided additional subvention to support its establishment and its initial operation, given that the service focus of Inno Space is still under review at its early stage of establishment, Inno Space may not be able to be self-financing. Indeed, the latest strategy is to position Inno Space as a social mission and to expand its scope of services to cover science, technology, engineering and mathematics education to offer more services to the youth community;
- (c) HKPC will continue to review the operation of Inno Space with a view to increasing the income to ensure its sustainable operation;
- (d) additional procedures with system enhancement will be put in place to enhance the current booking system procedures and records of the equipment of Inno Space; and
- (e) HKPC will promote usage of the equipment of Inno Space to members through different channels.

Response from the Government

2.50 CIT agrees with the audit recommendation in paragraph 2.48. She has said that ITC will consider taking appropriate follow-up actions on the sponsorship issue identified by HKPC.

PART 3: RESEARCH AND DEVELOPMENT PROJECTS

3.1 This PART examines the R&D projects of HKPC. Audit found room for improvement in the following areas:

- (a) management of R&D projects (paras. 3.2 to 3.15); and
- (b) commercialisation of results of R&D projects (paras. 3.16 to 3.29).

Management of R&D projects

3.2 HKPC's R&D projects can be classified into three categories according to their sources of funding:

- (a) ***ITF funded projects.*** ITF funded projects are approved by ITC. In addition to HKPC Standard Practices, the project managers of ITF funded projects need to observe the Funding and Administrative Guidelines for Successful Applicants issued by ITC and the Project Agreements signed between HKPC and ITC. In the period from 2014-15 to 2018-19, HKPC completed 33 ITF funded R&D projects. The total project cost of these 33 projects was \$153 million;
- (b) ***Projects supported by the Commercial Research and Development Fund (CRDF) of HKPC.*** CRDF is a fund established by HKPC using internal resources to support HKPC divisions to conduct preliminary R&D projects on new technologies, methodologies, services, etc. In the period from 2014-15 to 2018-19, HKPC completed 55 CRDF projects. The total project cost of these 55 projects was \$13 million; and
- (c) ***Other projects.*** These are projects supported by funding sources other than ITF and CRDF, including projects funded by other government funding schemes and projects commissioned by private sector clients. In the period from 2014-15 to 2018-19, HKPC completed 85 such projects. The total project cost of these 85 projects was \$151 million.

Need to review KPIs for managing R&D projects

3.3 HKPC has set two KPIs for managing R&D projects, namely “Number of new R&D projects” and “Number of on-going R&D projects” in the Annual Programme and Estimates approved by the Council and CIT. In the period from 2014-15 to 2018-19, the actual numbers exceeded the targets on the KPIs significantly (see Table 10).

Table 10

**Achievement of targets on KPIs for R&D projects
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19	Total
<i>Number of new R&D projects</i>						
Target (a)	29	29	30	35	35	158
Actual (b)	31	38	46	45	43	203
Actual as a percentage of target (c)=(b)÷(a)×100%	107%	131%	153%	129%	123%	128%
<i>Number of on-going R&D projects</i>						
Target (d)	43	52	49	65	65	274
Actual (e)	67	99	99	127	132	524
Actual as a percentage of target (f)=(e)÷(d)×100%	156%	190%	202%	195%	203%	191%

Source: Audit analysis of HKPC records

Research and development projects

3.4 **KPI “Number of new R&D projects”.** Audit reviewed the number of new R&D projects in the period from 2014-15 to 2018-19 and found the following issues:

- (a) **Projects counted as both consultancy projects and R&D projects.** One of the KPIs for consultancy projects was “Number of consultancy projects accepted” (see para. 2.5(d)). In the period from 2014-15 to 2018-19, 68 (33%) of the 203 new projects were counted as both consultancy projects and R&D projects at the same time (i.e. double-counted projects). They were counted against two targets, namely “Number of consultancy projects accepted” and “Number of new R&D projects” in the respective years. If these 68 projects had only been allowed to be counted against the target for either R&D projects or consultancy projects, the achievement of the targets on the KPIs might have been affected (see Tables 11(a) and (b)); and

Table 11(a)

**Number of new R&D projects if
all double-counted projects were excluded
(2014-15 to 2018-19)**

Year	Double-counted projects (a) (No.)	New R&D projects		
		Target (No.)	Actual (b) (No.)	Excluding double-counted projects (c) = (b) – (a) (No.)
2014-15	4	29	31	*27
2015-16	20	29	38	*18
2016-17	14	30	46	32
2017-18	20	35	45	*25
2018-19	10	35	43	*33
Total	68	158	203	135

Legend: * KPI target could not be met after excluding double-counted projects

Source: Audit analysis of HKPC records

Table 11(b)

**Number of consultancy projects accepted if
all double-counted projects were excluded
(2014-15 to 2018-19)**

Year	Double-counted projects (a) (No.)	Consultancy projects accepted		
		Target (No.)	Actual (b) (No.)	Excluding double-counted projects (c) = (b) – (a) (No.)
2014-15	4	1,250	970	#966
2015-16	20	1,070	917	#897
2016-17	14	1,020	948	#934
2017-18	20	968	699	#679
2018-19	10	935	944	*934
Total	68	5,243	4,478	4,410

Legend: * KPI target could not be met after excluding double-counted projects
KPI target could not be met both before and after excluding double-counted projects

Source: *Audit analysis of HKPC records*

- (b) ***Lack of clear guidelines on classification of projects.*** HKPC guidelines on the reporting of performance on KPIs clearly defined “consultancy projects” by specifying the types of projects that would be counted as consultancy projects. However, the guidelines only stated that projects with “R&D elements” should be counted as R&D projects, without elaborating what “R&D elements” were, and whether a project could be both a consultancy project and an R&D project at the same time, and counted for performance measurement against two targets.

Research and development projects

3.5 In response to Audit’s enquiry, HKPC informed Audit in September 2019 that:

- (a) for each consultancy project, technical staff of HKPC assessed whether the project contained “R&D elements” and the management of each division reviewed and reported to ED the new R&D projects commenced in their divisions on a monthly basis; and
- (b) KPIs were set to assess HKPC’s performance in different aspects and consultancy projects with R&D elements could be counted against the KPI targets for both R&D projects and consultancy projects.

3.6 Audit considers that HKPC needs to issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement against targets. To enhance transparency, Audit considers that HKPC needs to disclose the number of projects that are counted against both the targets on KPIs “Number of consultancy projects accepted” and “Number of new R&D projects” in the annual review report submitted to CIT and the Council.

3.7 ***KPI “Number of on-going R&D projects”.*** HKPC counts the number of on-going R&D projects as projects that are completed during the year plus projects that are in progress at the end of the year. Audit analysed the number of on-going R&D projects in the period from 2014-15 to 2018-19 and found that:

- (a) on average, 60% of the on-going R&D projects were projects brought forward from previous years; and
- (b) on average, 4% of the on-going R&D projects were delayed projects (i.e. projects that were not completed on or before the approved completion dates) (see Table 12), all of which were brought forward from previous years (see para. 3.7(a)).

Table 12

**Projects brought forward and delayed projects included in the
number of on-going R&D projects
(2014-15 to 2018-19)**

Year	No. of on-going projects (a)	Projects brought forward		Delayed projects	
		No. (b)	Percentage (c) = (b) ÷ (a) × 100%	No. (d)	Percentage (e) = (d) ÷ (a) × 100%
2014-15	67	39	58%	3	4%
2015-16	99	56	57%	2	2%
2016-17	99	54	55%	7	7%
2017-18	127	80	63%	5	4%
2018-19	132	86	65%	1	1%
Average	105	63	60%	4	4%

Source: Audit analysis of HKPC records

3.8 In the period from 2014-15 to 2018-19, HKPC exceeded the targets on the number of on-going R&D projects significantly, ranging from 56% to 103% of the targets (see Table 10 in para. 3.3). In Audit's view, the number of on-going R&D projects is a workload indicator which can be affected by many factors such as the number of uncompleted projects brought forward from previous years and delays in project completion. It might not be a favourable variance when the actual number of on-going projects exceeds the target. Using such KPI for performance management might give an unintended incentive for project teams to delay the R&D projects in hand unnecessarily. Audit considers that HKPC may need to examine the suitability of using the number of on-going R&D projects as a KPI.

Project delays

3.9 Audit noted that of the 173 R&D projects completed in the period from 2014-15 to 2018-19, 102 (59%) were completed after the approved completion date (see Table 13). In particular, of the 33 ITF funded R&D projects completed during the period, 27 (82%) experienced delays in completion.

Research and development projects

Table 13

**Analysis of delays in R&D projects completion
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19	Overall
(a) ITF funded projects						
— No. of projects completed on time	1 (33%)	— (0%)	— (0%)	1 (11%)	4 (40%)	6 (18%)
— No. of projects completed with delay	2 (67%)	5 (100%)	6 (100%)	8 (89%)	6 (60%)	27 (82%)
Subtotal	3 (100%)	5 (100%)	6 (100%)	9 (100%)	10 (100%)	33 (100%)
Average duration of delay (No. of days)	211	159	121	148	36	124
(b) Non-ITF funded projects						
— No. of projects completed on time	4 (21%)	8 (40%)	8 (30%)	19 (53%)	26 (68%)	65 (46%)
— No. of projects completed with delay	15 (79%)	12 (60%)	19 (70%)	17 (47%)	12 (32%)	75 (54%)
Subtotal	19 (100%)	20 (100%)	27 (100%)	36 (100%)	38 (100%)	140 (100%)
Average duration of delay (No. of days)	57	18	33	20	34	32
Total ((a) + (b))						
— No. of projects completed on time	5 (23%)	8 (32%)	8 (24%)	20 (44%)	30 (63%)	71 (41%)
— No. of projects completed with delay	17 (77%)	17 (68%)	25 (76%)	25 (56%)	18 (37%)	102 (59%)
Total	22 (100%)	25 (100%)	33 (100%)	45 (100%)	48 (100%)	173 (100%)
Average duration of delay (No. of days)	75	59	54	61	34	57

Source: Audit analysis of HKPC records

Remarks: The duration of delay was counted from the approved completion date (i.e. the original approved completion date or the approved extended completion date, where applicable) to the actual completion date.

3.10 In response to Audit's enquiry, HKPC informed Audit in September 2019 that some of the delayed ITF funded projects had already delivered the completed R&D deliverables to the sponsors, and the project delays recorded in the system were largely caused by uncompleted paper work and reporting. Audit considers that HKPC needs to take measures to ensure that R&D projects are completed in a timely manner, including completion of R&D deliverables and reporting requirements.

Late submission of project reports for ITF funded R&D projects

3.11 For each ITF funded R&D project, a Project Agreement is signed between HKPC and ITC. The Project Agreement requires HKPC to submit to ITC for approval:

- (a) Progress Reports within one month from the dates of project milestones specified in the Project Agreement; and
- (b) a Final Report within two months after project completion.

The Reports are required to include information on project progress, updates on project team and financial position of the project. Funds are disbursed if ITC is satisfied with the progress and has approved the Progress Reports. ITC has the right to defer payments until the milestones have been met, or terminate the project if there is a lack of material progress. Delay in submission of the Reports may also affect the applicant's future applications for funding support from ITC.

3.12 Audit reviewed the timeliness of the submission of Progress Reports and Final Reports for 33 ITF funded R&D projects completed in the period from 2014-15 to 2018-19. Of the 106 Progress Reports and Final Reports that were due for submission, 37 (35%) were submitted late (see Table 14).

Research and development projects

Table 14

**Late submission of Progress Reports and Final Reports
(2014-15 to 2018-19)**

Submission time	No. of Reports		
	Progress Report	Final Report	Overall
On time	47 (63%)	22 (69%)	69 (65%)
Late by 1 to 30 days	23 (31%)	6 (19%)	29 (27%)
Late by 31 to 90 days	2 (3%)	2 (6%)	4 (4%)
Late by 91 to 180 days	– (0%)	2 (6%)	2 (2%)
Late by 181 days to 428 days	2 (3%)	– (0%)	2 (2%)
Total	74 (100%)	32 (100%)	106 (100%)
Average number of days of delay	41	39	41

} Late submission: 37 (35%)

Source: Audit analysis of ITC records

Remarks: In the period from 2014-15 to 2018-19, 33 projects were completed. ITC has approved to extend the report submission deadline of one of the completed projects.

3.13 To ensure effective monitoring of projects, Audit considers that HKPC needs to take measures to ensure that Progress Reports and Final Reports of ITF funded R&D projects are submitted to ITC in a timely manner.

Audit recommendations

3.14 **Audit has recommended that ED, HKPC should:**

- (a) **issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement against targets, including making**

disclosures on projects counted against both the targets for consultancy projects and R&D projects;

- (b) examine the suitability of using the number of on-going R&D projects as a KPI;**
- (c) take measures to ensure that R&D projects are completed in a timely manner, including completion of R&D deliverables and reporting requirements; and**
- (d) take measures to ensure that Progress Reports and Final Reports of ITF funded R&D projects are submitted to ITC in a timely manner.**

Response from HKPC

3.15 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) HKPC will issue clear guidelines on the classification of projects into consultancy projects and R&D projects and on the counting of projects for performance measurement against targets, including making disclosures on projects counted against both the targets for consultancy projects and R&D projects;
- (b) HKPC will examine the suitability of using the number of on-going R&D projects as a KPI and report to ITC;
- (c) since July 2018, ED's approval with justifications has been required for all project delay requests. As a result of close management monitoring, the number of delayed projects has started to be trending down in 2018-19, and a majority of them were delays requested by clients. HKPC will continue to monitor closely the project progress; and
- (d) HKPC will monitor closely the submission of project Progress Reports and Final Reports and prepare monthly reports on late submission of Reports and check the justifications provided.

Commercialisation of results of R&D projects

3.16 If a product or technology developed is considered appropriate for wider commercial use, HKPC will apply for a patent for the product or technology and transfer it to the industry by way of commercialisation. HKPC's objectives of commercialisation are:

- (a) to provide an effective and transparent channel for transferring products or technologies to industries to fully exploit their commercial potentials;
- (b) to make the products or technologies available to industries as wide as practicable under suitable intellectual property protection and management;
- (c) to derive a reasonable investment return to HKPC's development efforts; and
- (d) to ensure fair access to HKPC's products or technologies developed by potential commercialisation transferee in a transparent manner.

3.17 According to HKPC Standard Practices, there are two modes of commercialisation:

- (a) ***Licensing agreement.*** Through a licensing agreement, the licensee can make use of the products or technologies developed by HKPC for a specific period by paying an upfront licensing fee and royalty fees to HKPC; and
- (b) ***Sale.*** The products or technologies are sold to an external party and HKPC no longer retains the ownership of the intellectual property associated with the products or technologies.

Need to improve KPIs for commercialisation of R&D results

3.18 HKPC has set two KPIs relating to commercialisation of its products and technologies, namely "Number of patents/licences/royalties" and "Number of products/technologies commercialised". Table 15 shows the targets and actual performance of the two KPIs in the period from 2014-15 to 2018-19.

Table 15

**Performance of commercialisation of new products and technologies
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19	Overall
<i>Number of patents/licences/royalties</i>						
Target (a)	8	8	8	10	10	44
Actual (b)	19	13	18	14	22	86
Actual as a percentage of target (c) = (b) ÷ (a) × 100 %	238 %	163 %	225 %	140 %	220 %	195 %
<i>Number of products/technologies commercialised</i>						
Target (d)	13	14	14	18	18	77
Actual (e)	15	21	19	24	18	97
Actual as a percentage of target (f) = (e) ÷ (d) × 100 %	115 %	150 %	136 %	133 %	100 %	126 %

Source: Audit analysis of HKPC records

3.19 ***Targets were exceeded by significant margins.*** HKPC over-performed in the period from 2014-15 to 2018-19 by a significant margin. During the period, the number of patents/licences/royalties exceeded the target by 40% to 138%. The number of products/technologies commercialised exceeded the target by up to 50%. To ensure effective performance management, Audit considers that HKPC needs to review whether the targets are realistic and challenging.

3.20 ***KPI “Number of patents/licences/royalties”.*** This KPI comprised two parameters:

- (a) number of patents awarded; and
- (b) number of licence or royalty agreements entered.

Research and development projects

3.21 Audit noted that in the period from 2014-15 to 2018-19, the targets were achieved mainly due to the number of patents awarded. Of the 86 patents, licences or royalties awarded/entered during the period, 77 (90%) were patents awarded, while the number of licence or royalty agreements entered only contributed 9 (10%) of the total (see Table 16). However, a product or technology is not commercialised when a patent is awarded.

Table 16

**Number of patents awarded and licence or royalty agreements entered
(2014-15 to 2018-19)**

Year	No. of patents awarded (a)	No. of licence or royalty agreements entered (b)	Total (c)=(a)+(b)
2014-15	14 (74%)	5 (26%)	19 (100%)
2015-16	11 (85%)	2 (15%)	13 (100%)
2016-17	17 (94%)	1 (6%)	18 (100%)
2017-18	14 (100%)	— (0%)	14 (100%)
2018-19	21 (95%)	1 (5%)	22 (100%)
Overall	77 (90%)	9 (10%)	86 (100%)

Source: Audit analysis of HKPC records

3.22 Audit considers that to enhance performance monitoring on commercialisation of R&D results, HKPC needs to explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered.

3.23 ***Number of products/technologies commercialised.*** Audit reviewed the number of products or technologies commercialised in the period from 2014-15 to 2018-19 and noted that:

- (a) the number included products or technologies developed from projects other than R&D projects. Of the 97 products or technologies commercialised during the period, only 45 (46%) were developed from R&D projects, and the remaining 52 (54%) were mainly generated by pilot technology development projects conducted by individual divisions; and
- (b) when a product or technology was sold to more than one client, the single product or technology was counted as more than one products or technologies commercialised. For example, in 2017-18, a product was sold to five clients and HKPC counted that as five products commercialised.

3.24 In response to Audit's enquiry, HKPC informed Audit in September 2019 that the measurement of the KPI "Number of products/technologies commercialised" was intended to measure the success of a developed product/technology, which was reflected by the number of clients adopting the product/technology.

3.25 In Audit's view, there is a need to consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately with a view to enhancing transparency. Moreover, the KPI "Number of products/technologies commercialised" was ambiguous as it was not clear whether the KPI represented the number of products/technologies commercialised or the number of commercialisation transactions of which HKPC had carried out during the year. To ensure effective performance management, HKPC needs to report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council.

Need to endeavour to increase the number of patents commercialised

3.26 As at 31 August 2019, HKPC had 123 patents. Particulars of the patents (e.g. patent title, registered country, patent number, etc.) were published on HKPC's website for licence application by interested parties. Audit noted that of these 123 patents:

- (a) only 4 (3%) had generated licence or royalty income since patent registration, and the total licence and royalty income generated by them was \$1.5 million; and

Research and development projects

- (b) 119 (97%) patents had not generated any licence or royalty income since patent registration. Audit noted that 27 of them had been registered for over five years.

3.27 In response to Audit's enquiry, HKPC informed Audit in September 2019 that:

- (a) due to the business nature of HKPC, the patents registered were not solely intended for licensing but mostly used for providing the technology basis for future projects (e.g. consultancy projects, ITF funded R&D projects, etc.) to serve the industry; and
- (b) another use of the patents was to prevent unauthorised use of HKPC's intellectual properties by other companies.

To maximise commercial use for new products/technologies developed, Audit considers that HKPC needs to endeavour to increase the number of licence/royalty agreements.

Audit recommendations

3.28 **Audit has *recommended* that ED, HKPC should:**

- (a) **review whether the targets for commercialisation of new products or technologies are realistic and challenging for effective performance management purpose;**
- (b) **explore the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered;**
- (c) **consider the merits of reporting the commercialisation of products or technologies developed from R&D projects and other projects separately with a view to enhancing transparency;**

- (d) **report both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council; and**
- (e) **endeavour to increase the number of licence/royalty agreements.**

Response from HKPC

3.29 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) HKPC will examine whether the targets for commercialisation of new products or technologies are realistic and challenging for effective performance management;
- (b) HKPC will examine the desirability of setting two separate KPIs on the number of patents awarded and the number of licence or royalty agreements entered. HKPC will consider including additional KPIs such as “Income generated from commercialisation of technologies” to assess the commercialisation results;
- (c) to accurately reflect the R&D efforts and commercialisation results generated, HKPC will record other projects that may develop products/technologies as divisional-level R&D projects for internal reference, so that commercialisation of products/technologies developed from these divisional-level R&D projects could be included for reporting;
- (d) HKPC will examine with ITC the disclosure of both the number of products/technologies commercialised and the number of clients to which products/technologies were sold during the year in the annual review report submitted to CIT and the Council; and
- (e) HKPC will step up the marketing of relevant and market-ready HKPC’s patents in Hong Kong and the Greater Bay Area.

PART 4: PROVISION OF TRAINING PROGRAMMES

4.1 This PART examines the provision of training programmes by HKPC, focusing on the following areas:

- (a) strategic planning of training programmes (paras. 4.4 to 4.13);
- (b) programme development and enrolment (paras. 4.14 to 4.27);
- (c) evaluation of training programmes (paras. 4.28 to 4.38); and
- (d) management of training venues (paras. 4.39 to 4.45).

Background

4.2 HKPC provides diversified training programmes designed to upgrade and update the knowledge and skills of practitioners in different business sectors. In 2004, HKPC established the Productivity Training Institute to provide HKPC's training programmes. In 2018, HKPC renamed the Productivity Training Institute as the HKPC Academy.

4.3 HKPC provides the following training programmes:

- (a) ***Public training programmes.*** These programmes are available for enrolment by the public. Programme fees are determined by HKPC on a full-cost recovery basis. In 2018-19, HKPC organised 120 public training programmes; and
- (b) ***Corporate training programmes.*** These programmes are customised training programmes for companies and organisations, including in-company training programmes, training programmes conducted as part of consultancy projects and government funded projects. Topics are agreed in advance between the clients and HKPC. Fixed fees are charged on a full-cost recovery basis according to the agreements entered into between

the clients and HKPC. In 2018-19, HKPC organised 113 corporate training programmes.

Strategic planning of training programmes

4.4 According to the requirements in MAA, HKPC submits to CIT for approval annually a Three-year Forecast and an Annual Programme and Estimates (see para. 1.11), setting out the following information on HKPC's training programmes:

- (a) *For the forthcoming three years.* Strategic focus of training programmes, the estimated income and expenditure and the estimated number of training programmes; and
- (b) *For the forthcoming year.* KPIs for training programmes and the related targets.

Targets on KPIs for training programmes not met

4.5 HKPC has set four KPIs for training programmes in the Annual Programme and Estimates approved by the Council and CIT:

- (a) number of fee-charging training courses launched (Note 15);
- (b) number of people attended the fee-charging training courses (Note 15);
- (c) training participants satisfaction index; and
- (d) income from training courses (Note 16).

Note 15: *The term "training courses" used in these KPIs refers to training programmes organised by HKPC.*

Note 16: *KPI "Income from training courses" refers to income from public training programmes.*

Provision of training programmes

4.6 Audit analysed the performance of HKPC's training programmes for the period from 2014-15 to 2018-19 and found that:

- (a) although the target on KPI "Number of fee-charging training courses launched" was adjusted downwards by 25% from 300 in 2014-15 to 226 in 2016-17, the actual numbers in these years were only 60% to 90% of the targets;
- (b) although the target on KPI "Number of people attended the fee-charging training courses" was adjusted downwards by 7% from 5,800 in 2014-15 to 5,370 in 2015-16, the actual numbers in these years were only 52% and 79% of the targets; and
- (c) although the target on KPI "Income from training courses" was adjusted downwards every year from \$19.8 million in 2014-15 to \$12.6 million in 2018-19 (i.e. a reduction of 36%), the actual income amounted to only 47% to 65% of the targets, decreasing from \$12.9 million in 2014-15 to \$7.6 million in 2018-19 (see Table 17).

Provision of training programmes

Table 17

Achievement of targets on KPIs for training programmes (2014-15 to 2018-19)

KPI	Performance	2014-15	2015-16	2016-17	2017-18	2018-19
No. of fee-charging training courses launched	Target (a)	300	285	226	200	200
	Actual (b)	180	196	203	267	233
	Actual as a percentage of target (c) = (b) ÷ (a) × 100 %	*60 %	*69 %	*90 %	134 %	117 %
No. of people attended the fee-charging training courses	Target (d)	5,800	5,370	3,390	3,000	3,000
	Actual (e)	3,041	4,248	4,198	6,196	6,079
	Actual as a percentage of target (f) = (e) ÷ (d) × 100 %	*52 %	*79 %	124 %	207 %	203 %
Training participants satisfaction index	Target (g)	7.7	8.0	8.0	8.2	8.2
	Actual (h)	8.1	8.4	8.4	8.4	8.6
	Actual as a percentage of target (i) = (h) ÷ (g) × 100 %	105 %	105 %	105 %	102 %	105 %
Income from training courses (\$ million)	Target (j)	19.8	19.0	17.6	14.0	12.6
	Actual (k)	12.9	8.9	9.4	8.0	7.6
	Actual as a percentage of target (l) = (k) ÷ (j) × 100 %	*65 %	*47 %	*53 %	*57 %	*60 %

Legend: * KPI target not met

Source: Audit analysis of HKPC records

4.7 Audit considers that HKPC needs to step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes.

Provision of training programmes

Number of training programmes launched deviated from the Annual Programme and Estimates

4.8 In the Annual Programme and Estimates, the activities of HKPC are categorised into the following four programme areas:

- (a) environmental technology;
- (b) information technology;
- (c) management systems; and
- (d) manufacturing technology.

4.9 Audit compared the actual number of training programmes against that set in the Annual Programme and Estimates approved by CIT and the Council (see Table 18) for the period from 2016-17 to 2018-19 and found that the number of training programmes organised under each programme area had deviated significantly from those set out in the approved Annual Programme and Estimates:

- (a) for the programme areas of environmental technology and manufacturing technology, the actual numbers of training programmes were consistently less than the estimated numbers; and
- (b) for the programme area of information technology throughout the period and the programme area of management systems for 2017-18 and 2018-19, the actual numbers of training programmes were much more than that estimated.

Table 18

**Actual numbers of training programmes
deviated from those estimated
(2016-17 to 2018-19)**

Programme area	2016-17	2017-18	2018-19
<i>Environmental technology</i>			
Estimated (a)	26	28	34
Actual (b)	11	13	16
Actual as a percentage of estimated number (c) = (b) ÷ (a) × 100 %	42 %	46 %	47 %
<i>Information technology</i>			
Estimated (d)	12	28	37
Actual (e)	50	87	85
Actual as a percentage of estimated number (f) = (e) ÷ (d) × 100 %	417 %	311 %	230 %
<i>Management systems</i>			
Estimated (g)	133	111	66
Actual (h)	103	137	77
Actual as a percentage of estimated number (i) = (h) ÷ (g) × 100 %	77 %	123 %	117 %
<i>Manufacturing technology</i>			
Estimated (j)	55	33	63
Actual (k)	39	30	55
Actual as a percentage of estimated number (l) = (k) ÷ (j) × 100 %	71 %	91 %	87 %

Source: Audit analysis of HKPC records

4.10 In response to Audit's enquiry, HKPC informed Audit in September 2019 that the number of training programmes under each programme area in the Annual Programme and Estimates was not an approved target but only an estimate to give an indication of the distribution of training activities amongst the programme areas, and

Provision of training programmes

the actual delivery of the training programmes would depend on the prevailing market demand and competition.

4.11 According to MAA, in the Annual Programme and Estimates, HKPC shall categorise its activities into different programme areas. The Annual Programme and Estimates shall include the strategic objective of each programme area and how it fits into the Government priorities and HKPC mission. In Audit's view, the estimated number of training programmes for each programme area in the Annual Programme and Estimates reflects HKPC's overall strategy on training services. Audit considers that HKPC needs to organise training programmes according to the estimated number for each programme area set out in the Annual Programme and Estimates as far as practicable, and any deviations, if considered justifiable, are properly approved by CIT and the Council.

Audit recommendations

4.12 **Audit has *recommended* that ED, HKPC should:**

- (a) **step up efforts to enhance the performance of training programmes, in particular, the income from public training programmes; and**
- (b) **organise training programmes according to the estimated number for each programme area set out in the Annual Programme and Estimates as far as practicable, and any deviations, if considered justifiable, are properly approved by CIT and the Council.**

Response from HKPC

4.13 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) HKPC has taken various measures to enhance the performance of training programmes recently. The income from training programmes has started to pick up, with the income of the first quarter of 2019-20 exceeding that of the same period of 2018-19 by 41%. The income for the second quarter of 2019-20 is projected to exceed the same period of last year by 60%;

- (b) in 2019-20, HKPC established a new strategic model with a new management team with the aim to improve the performance of training programmes. Staff responsible for training programmes have enhanced communications with business divisions to ensure that the training programmes provided by HKPC can meet the latest needs of the industry;
- (c) HKPC will continue to execute the enhancement measurements and regularly review the effectiveness of these measures; and
- (d) HKPC will review and monitor quarterly the actual activities of training operation according to the approved estimates in the Annual Programme and Estimates.

Programme development and enrolment

4.14 The procedures for organising public training programmes are set out in the Guidebook for Organising Public Training Programme (Guidebook). According to the Guidebook, for all new public training programmes:

- (a) a proposal containing justifications for organising the programme, estimated income and expenditure, estimated enrolment number and minimum enrolment number shall be prepared and submitted to the management for approval; and
- (b) the responsible division should conduct a market demand assessment and pricing research to justify the launch of the programme and the pricing decision.

Low enrolment of public training programmes

4.15 *Many public training programmes under-enrolled.* In 2018-19, HKPC organised 120 public training programmes. Audit examined the enrolment rates of 30 of the 120 public training programmes by dividing the actual enrolment by the estimated enrolment and found that:

- (a) for 10 (33%) programmes, the estimated enrolment was not included in the proposals; and

Provision of training programmes

- (b) for the remaining 20 (67%) programmes where the estimated enrolment was included in the proposals, the actual enrolment of 12 (60%) of these 20 programmes were less than the estimated enrolment. The enrolment rates of these 12 programmes ranged from 15% to 92%, averaging 59%. In particular, the enrolment rates of 4 (20%) of these programmes were less than 50%, ranging from 15% to 40% (see Table 19).

Table 19

**Enrolment rates of 20 public training programmes
(2018-19)**

Enrolment rate	No. of programmes
< 50%	4 (20%)
50% to < 70%	3 (15%)
70% to < 100%	5 (25%)
100% and above	8 (40%)
Total	20 (100%)

Source: Audit analysis of HKPC records

4.16 Audit considers that HKPC needs to ascertain the reasons for the low enrolments and step up efforts to improve the enrolment rates of its public training programmes. HKPC also needs to take measures to ensure that the estimated enrolment of each proposed public training programme is prepared and included in the proposal.

4.17 ***Public training programmes with very few participants.*** Audit analysed the number of participants of the 120 public training programmes organised in 2018-19 and found that 38 (32%) programmes had fewer than ten participants (see Table 20).

Table 20

**Number of participants of public training programmes
(2018-19)**

No. of participants	No. of programmes
3 to < 5	4 (3%) } 38 (32%)
5 to < 10	34 (29%) }
10 and above	82 (68%)
Total	120 (100%)

Source: Audit analysis of HKPC records

4.18 Audit examined the proposals of the 38 public training programmes with fewer than ten participants and found that:

- (a) in 15 (39%) proposals, the estimated numbers of enrolment were not included in the proposals; and
- (b) in 8 of the remaining 23 proposals, the estimated numbers of enrolment were set below ten. However, in all of these eight proposals, there was no documentary evidence showing the justifications for organising such programmes despite the fact that only a few people were expected to attend the programmes.

4.19 In response to Audit's enquiry, HKPC informed Audit in September 2019 that in considering whether to organise a programme:

- (a) HKPC would consider whether the programme could achieve cost-recovery or fulfil other missions of HKPC. Therefore, in order to provide services to the industry, HKPC would still organise a programme with a low estimated number, as long as it could achieve cost-recovery; and
- (b) for programmes that could not achieve cost-recovery, the management would only approve to organise such programmes for special reasons (e.g. to strategically introduce new technologies for awareness raising).

Provision of training programmes

4.20 In Audit's view, it may not be conducive to the efficiency and effectiveness of the training programmes if there are only a small number of participants. Audit considers that HKPC needs to consider their worthiness before public training programmes with very few expected participants are organised. HKPC also needs to ensure that full justifications are provided in the proposals for programmes with small number of expected participants.

Market demand assessment not conducted for some programmes

4.21 According to the Guidebook:

- (a) new public training programmes developed shall be in line with the mission of HKPC and meet the market or industry needs; and
- (b) the responsible division should conduct a market demand assessment to justify the launch of the programme.

4.22 Audit examined the proposals of 30 new public training programmes organised in 2018-19 and found that:

- (a) for 11 (37%) proposals, market demand assessment was not conducted; and
- (b) for 2 (7%) proposals, the programme organisers stated in the proposals that market demand assessments had been conducted. However, details and results of the market demand assessments could not be found in the proposals and there was no documentary evidence showing that market demand assessments had been conducted.

In response to Audit's enquiry, HKPC informed Audit in September 2019 that for programmes organised by subject divisions, market assessments were not necessary as the subject divisions were well aware of the market demands, had close relationship with the relevant trade associations and had first-hand information on their demands.

4.23 Audit considers that HKPC needs to ensure that the Guidebook accurately stipulates the types of new public training programmes for which market demand assessment should be conducted. HKPC also needs to take measures to ensure that market demand assessments for new public training programmes are conducted according to the Guidebook, and the details and results of the assessments are included in the proposals.

Need to improve market demand assessments

4.24 Audit noted that of the 241 public training programmes launched in 2018-19, 121 (50%) were cancelled due to insufficient enrolment. Of these cancelled programmes, 76 (63%) had zero enrolment. Audit reviewed the market demand assessments of five cancelled programmes and found that there was room for improvement in conducting the market demand assessments:

- (a) the number of target participants of the programmes in the market (e.g. the number of pertinent personnel in the industry sector covered by the training topics) was not assessed; and
- (b) availability of similar programmes provided by other training service providers in the market and the competitiveness of the proposed programmes against them was not assessed.

Case 2 shows an example:

Case 2

The cancellation of a training programme due to zero enrolment (October 2018 to March 2019)

1. In October 2018, a programme entitled “English Writing Skills for Financial Executive” was approved. The programme comprised three one-day workshops.
2. According to the proposal, the programme fee was \$1,700 per participant per workshop. The project team estimated that the programme would have a total of 45 participants and the cost recovery rate would be 107%.
3. The first workshop was published on HKPC’s website for enrolment starting from 5 October 2018. However, no enrolment was received and the whole programme was eventually cancelled on 15 March 2019. In the paper submitted for seeking approval for the programme cancellation, the project team explained that the low enrolment was mainly due to fierce market competition.
4. Audit examined the market demand assessment contained in the proposal and noted that:
 - (a) the assessment consisted of only two Internet articles covering the benefits of attending this training topic. The number of financial executives in the market and assessment on the market demand on English writing skills for financial executives were not available; and
 - (b) there was no documentary evidence showing that the project team had considered whether similar programmes were provided by other training service providers in the market, and assessed the competitiveness of the proposed training programme against them.

Audit comments

5. In Audit’s view, there was room for improvement in the market demand assessment conducted by the project team as it did not actually assess the market demand and competitiveness of the programme.

Source: Audit analysis of HKPC records

4.25 Audit considers that HKPC needs to take measures to improve the market demand assessments for new public training programmes.

Audit recommendations

4.26 Audit has *recommended* that ED, HKPC should:

- (a) **ascertain the reasons for the low enrolments of some public training programmes and step up efforts to improve the enrolment rates;**
- (b) **take measures to ensure that the estimated enrolment of each proposed public training programme is prepared and included in the proposal;**
- (c) **consider their worthiness before public training programmes with very few expected participants are organised;**
- (d) **ensure that full justifications are provided in the proposals for public training programmes with small number of expected participants;**
- (e) **ensure that the Guidebook accurately stipulates the types of new public training programmes requiring market demand assessment;**
- (f) **take measures to ensure that market demand assessments for new public training programmes are conducted according to the Guidebook, and the details and results of the assessments are included in the proposals; and**
- (g) **take measures to improve the market demand assessments for new public training programmes.**

Provision of training programmes

Response from HKPC

4.27 ED, HKPC agrees with the audit recommendations. He has said that HKPC will:

- (a) continue to enhance promotion of the training programmes to improve the enrolment rates;
- (b) include the estimated enrolment number of each proposed public training programme in the proposal;
- (c) provide justifications for programmes with a large variance of the actual versus the estimated number of participants;
- (d) document the reasons for launching public training programmes with small number of expected participants;
- (e) monitor closely the conduct of proper market demand assessments for new public training programmes;
- (f) update the Guidebook to stipulate accurately the requirement for market demand assessment; and
- (g) improve the quality of market demand assessment including competitor analysis.

Evaluation of training programmes

4.28 According to the Guidebook, all public training programmes organised would be subject to the following three-level evaluation mechanism:

- (a) ***Class observation.*** The Officer-in-charge (OIC) of the programme carries out a class observation and completes a “Class Observation Form”, which records the teaching quality of the trainer. The OIC will share his observations and expectations with the trainer for improvements;

- (b) ***Programme-end evaluation.*** The programme administrator distributes and collects feedbacks from the trainees using an end-of-programme evaluation form. The performance of the trainer and the logistic support provided by HKPC are evaluated by the trainees using a scale of 1 to 5. Results from the evaluation forms are input into the Public Training Administration (PTA) system for review by the OIC and management. If the rating score of any of the evaluation items is 3 or below, the OIC will investigate the cause of the low score and suggest follow-up actions for management's approval. The PTA system will compute an overall participants satisfaction index for all programmes, which is one of the KPIs for HKPC's training programmes (see para. 4.5(c)); and
- (c) ***Annual review.*** The OIC of each programme conducts an annual review to determine whether the programme should be continued in the coming year.

The Guidebook does not cover evaluation of corporate training programmes.

Evaluation data for some programmes not available in PTA system

4.29 ***Evaluation data of some public training programmes not available in the PTA system.*** In the period from 2015-16 to 2018-19, HKPC organised 559 public training programmes. Audit examined the records in the PTA system and noted that the programme-end evaluation data of 242 (43%) programmes were not available in the PTA system. It was not known whether programme-end evaluation had been conducted for these programmes.

4.30 ***Evaluation data of some corporate training programmes found in the PTA system.*** In the period from 2015-16 to 2018-19, HKPC also organised 340 corporate training programmes. While there were no internal guidelines on whether the evaluation data of corporate training programmes should also be kept in the PTA system, Audit found that the evaluation data of 65 (19%) corporate training programmes were also kept in the PTA system and used for the computation of the overall participants satisfaction index (i.e. one of the KPIs for training programmes). The evaluation data of the remaining 275 corporate training programmes were not kept in the PTA system. In other words, the overall participants satisfaction index was computed based on the programme-end evaluation data of some (57%) public training programmes and a small percentage (19%) of corporate training programmes.

Provision of training programmes

4.31 Audit considers that HKPC needs to take measures to ensure that programme-end evaluation data for public training programmes are collected and properly input into the PTA system according to the requirements stipulated in the Guidebook. HKPC also needs to issue guidelines to clarify whether evaluation data of corporate training programmes should also be kept in the PTA system for the computation of the overall participants satisfaction index.

Need to improve the response rate of programme evaluation forms

4.32 Audit examined the number of end-of-programme evaluation forms for both public and corporate training programmes distributed and received in the period from 2015-16 to 2018-19, and noted that the annual response rate of the evaluation forms decreased from 51 % in 2015-16 to 43 % in 2018-19 (see Table 21).

Table 21

**Response rates of programme evaluation forms
(2015-16 to 2018-19)**

	2015-16	2016-17	2017-18	2018-19
No. of evaluation forms distributed (a)	3,938	4,335	3,313	2,296
No. of evaluation forms received (b)	2,017	2,154	1,918	996
Response rate (c) = (b) ÷ (a) × 100 %	51 %	50 %	58 %	43 %

Source: Audit analysis of HKPC records

Remarks: The number of evaluation forms distributed does not add up to the number of participants because more than one evaluation form would be distributed for programmes with more than one trainer.

4.33 In Audit's view, the results of programme-end evaluation are useful in understanding the areas of possible improvement for the purpose of monitoring programme quality. Audit considers that HKPC needs to take measures to improve the response rate of end-of-programme evaluation forms.

Annual review not conducted for some programmes

4.34 According to the Guidebook, the OIC of each public training programme should conduct an annual review to determine the continuation of the programme (see para. 4.28(c)). The review covers the following aspects and the results are subject to management's approval:

- (a) alignment with HKPC's strategic plan;
- (b) uniqueness of technology or knowledge covered by the programme in the current market; and
- (c) public reception for the past 18 consecutive months, particularly the performance of the last three intakes, by comparing actual enrolment to minimum enrolment.

4.35 Audit found that in the period from 2015-16 to 2018-19, annual reviews had not been conducted for some public training programmes, ranging from 9% to 33% of the programmes organised (see Table 22).

Table 22

**Public training programmes not covered by annual reviews
(2015-16 to 2018-19)**

	2015-16	2016-17	2017-18	2018-19
No. of programmes organised	113	170	156	120
No. of programmes not covered by annual reviews	10 (9%)	29 (17%)	17 (11%)	39 (33%)

Source: Audit analysis of HKPC records

Provision of training programmes

4.36 In Audit's view, the annual review can help ensure that public training programmes organised align with HKPC's strategic plan and there is a market demand for the programmes. Omission in conducting the annual review may lead to continuation of programmes that are no longer in demand, and eventually very low enrolment of the programmes. Audit considers that HKPC needs to take measures to ensure that annual reviews of public training programmes are conducted according to the Guidebook.

Audit recommendations

4.37 **Audit has *recommended* that ED, HKPC should:**

- (a) **take measures to ensure that programme-end evaluation data for public training programmes are collected and properly input into the PTA system;**
- (b) **issue guidelines to clarify whether evaluation data of corporate training programmes should also be kept in the PTA system for the computation of the overall participants satisfaction index;**
- (c) **take measures to improve the response rate of end-of-programme evaluation forms; and**
- (d) **take measures to ensure that annual reviews of public training programmes are conducted according to the Guidebook.**

Response from HKPC

4.38 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) starting from 2019-20 (which started in April 2019), all divisions have started to implement the arrangements of inputting the evaluation data of all public training programmes into the PTA system;
- (b) HKPC has reminded divisions to record the evaluation data of all public training programmes in the PTA system;

- (c) HKPC will provide guidelines to state clearly that only the public training programme evaluation data are required to be kept in the PTA system for computation of the overall participants satisfaction index;
- (d) HKPC will monitor the response rate of end-of-programme evaluation forms and follow-up closely on non-responding participants;
- (e) the original purpose of the annual review on a programme-by-programme basis is to review if certain training programmes should be continued or exited. However, as the market changes more and more rapidly, HKPC has improved the process by reviewing whether a particular programme should be continued or not on a weekly basis by the management. Accordingly, the annual review exercise on a programme-by-programme basis has become redundant. Instead, HKPC will conduct an annual review on the strategic areas of training in association with all subject divisions in the coming year; and
- (f) HKPC will revise the Guidebook to reflect the latest training programme review arrangements.

Management of training venues

4.39 All the training venues of HKPC (see Table 23) are in the HKPC Building located in Kowloon Tong. Apart from training programmes organised by HKPC, the venues are also available for use by outside organisations including companies, B/Ds and other non-governmental organisations in Hong Kong. Every year, HKPC reviews the venue rates by benchmarking the rates charged by HKPC against those by similar organisations in the market (e.g. the Hong Kong Science and Technology Parks Corporation).

Provision of training programmes

Table 23

**Training venues of HKPC
(31 August 2019)**

Venue	No.	Area (Square feet)	Capacity (No. of seats)
Conference hall (see Photograph 7)	1	5,048	300
Theatres (see Photograph 8)	2	3,537	65 and 100
Standard classrooms	13	10,914	19 to 70
Computer classrooms	2	1,437	30

Source: Audit analysis of HKPC records

Photograph 7

The conference hall of HKPC



Source: HKPC records

Photograph 8

A theatre of HKPC



Source: HKPC records

Need to improve utilisation of training venues

4.40 The utilisation of the training venues is recorded in the PTA system. The PTA system calculates the utilisation rate of a training venue by dividing the actual usage hours (including hours used by outside organisations) of the venue by the total number of opening hours of the venue during the period. Venue utilisation reports can be generated from the PTA system to show the utilisation rate of each training venue.

4.41 Audit examined the venue utilisation reports of 2017-18 and 2018-19 and found that the overall utilisation rates of HKPC training venues were low (i.e. 17% and 16% respectively). In particular, it was not satisfactory that the utilisation rate of each and every training venue was less than 50% during both office hours and non-office hours (see Table 24). Audit considers that HKPC needs to step up efforts to promote the hiring of training venues by outside organisations, and take effective measures (e.g. improving public awareness of the availability of its training venues, converting the training venues which are surplus to requirement into other gainful uses, etc.) to improve the utilisation of the training venues.

Provision of training programmes

Table 24

**Utilisation rates of training venues
(2017-18 and 2018-19)**

Venue	2017-18		2018-19	
	Office hours	Non-office hours	Office hours	Non-office hours
Conference hall	40%	29%	35%	30%
Theatre 1	16%	9%	17%	15%
Theatre 2	16%	39%	12%	33%
Standard classrooms	17%	14%	16%	12%
Computer classrooms	15%	8%	17%	5%
Overall	17%		16%	

Source: Audit analysis of HKPC records

Remarks: Office hours refer to 9:00 a.m. to 6:00 p.m. from Monday to Friday. Non-office hours refer to 6:00 p.m. to 10:00 p.m. from Monday to Friday, and from 9:00 a.m. to 5:00 p.m. on Saturday. All training venues are closed on Sunday and public holidays.

Need to provide online venue booking

4.42 To use the training venues of HKPC, hirers are required to follow booking procedures, as follows:

- (a) the hirer is required to call HKPC during office hours to check the availability of the venue (see para. 4.43);
- (b) if the venue is available, the hirer is requested to complete and submit a booking form and relevant supporting documents (e.g. business registration certificate) to HKPC by fax or e-mail; and

- (c) upon the receipt and checking of the booking form and supporting documents from the hirer, HKPC sends a confirmation reply e-mail to the hirer to confirm the booking.

4.43 In Audit's view, the existing venue booking system is not user-friendly as the potential hirers can only call to check the availability of the venues during office hours. To allow more efficient and user-friendly booking of HKPC training venues by hirers, there is a need to upload information about venue availability and provide online booking function for the hirers on HKPC's website.

Audit recommendations

4.44 Audit has *recommended* that ED, HKPC should:

- (a) **step up efforts to promote the hiring of HKPC training venues by outside organisations;**
- (b) **take effective measures (e.g. improving public awareness of the availability of HKPC training venues, converting the training venues which are surplus to requirement into other gainful uses, etc.) to improve the utilisation of the training venues; and**
- (c) **upload information about venue availability and provide online booking function for the hirers on HKPC's website.**

Response from HKPC

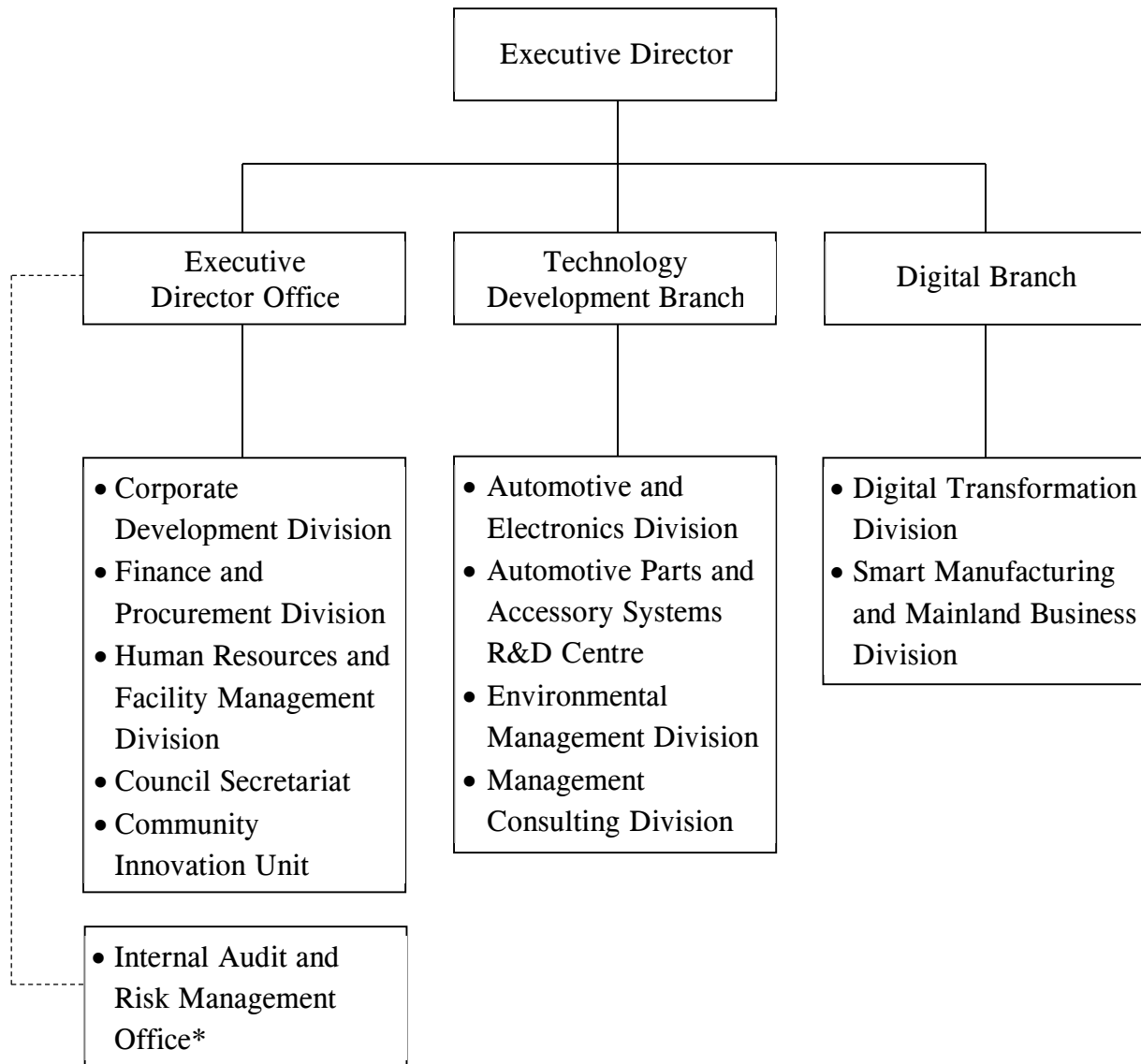
4.45 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) HKPC has taken various measures to improve the overall utilisation rate of HKPC training venues such as:
 - (i) modernising venue facilities (such as the renovated conference hall);

Provision of training programmes

- (ii) stepping up marketing effort to enhance the utilisation of venues;
and
 - (iii) reviewing and putting in place a competitive rate (such as giving a 30% discount on all venue fees for SMEs until the end of March 2020);
- (b) HKPC will monitor closely the implementation of the enhancement measures and venue utilisation rates; and
- (c) an online training venue booking system will be launched in October 2019.

HKPC: Organisation chart (extract)
(31 March 2019)



*Functionally reported to the Audit Committee of HKPC

Source: HKPC records

Acronyms and abbreviations

AED	Automotive and Electronics Division
APAS	Automotive Parts and Accessory Systems Research and Development Centre
ARO	Internal Audit and Risk Management Office
Audit	Audit Commission
B/Ds	Government bureaux/departments
CE	Chief Executive
CIT	Commissioner for Innovation and Technology
CRDF	Commercial Research and Development Fund
ED	Executive Director
Guidebook	Guidebook for Organising Public Training Programme
HKPC	Hong Kong Productivity Council
IPSC	Intellectual Property Services Centre
ITC	Innovation and Technology Commission
ITF	Innovation and Technology Fund
KPI	Key performance indicator
MAA	Memorandum of Administrative Arrangements
OIC	Officer-in-charge
OMW	Optics Manufacturing Workshop
PTA	Public Training Administration
R&D	Research and development
SME	Small and medium enterprise

CHAPTER 3

**Innovation and Technology Bureau
Innovation and Technology Commission
Hong Kong Productivity Council**

**Governance and administrative issues of
the Hong Kong Productivity Council**

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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GOVERNANCE AND ADMINISTRATIVE ISSUES OF THE HONG KONG PRODUCTIVITY COUNCIL

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.17
Audit review	1.18 – 1.20
General response from HKPC	1.21
General response from the Government	1.22
Acknowledgement	1.23
PART 2: CORPORATE GOVERNANCE AND PERFORMANCE REPORTING	2.1
Corporate governance	2.2 – 2.18
Audit recommendations	2.19
Response from HKPC	2.20
Performance reporting	2.21 – 2.27
Audit recommendations	2.28
Response from HKPC	2.29

	Paragraph
PART 3: HUMAN RESOURCE MANAGEMENT	3.1
Staff strength and turnover	3.2 – 3.9
Audit recommendations	3.10
Response from HKPC	3.11
Staff recruitment	3.12 – 3.15
Audit recommendations	3.16
Response from HKPC	3.17
 PART 4: PROCUREMENT AND OTHER ADMINISTRATIVE ISSUES	 4.1
Procurement of goods and services	4.2 – 4.12
Audit recommendations	4.13
Response from HKPC	4.14
Other administrative issues	4.15 – 4.41
Audit recommendations	4.42
Response from HKPC	4.43
 Appendices	 Page
A : HKPC: Organisation chart (extract) (31 March 2019)	75
B : Acronyms and abbreviations	76

GOVERNANCE AND ADMINISTRATIVE ISSUES OF THE HONG KONG PRODUCTIVITY COUNCIL

Executive Summary

1. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. The Council is the governing body of HKPC and is supported by four Committees. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The Commissioner for Innovation and Technology (CIT) is the Controlling Officer of the subventions granted to HKPC. In 2017-18, HKPC had a total income of \$711 million, which included government subventions of \$223.3 million. In the same year, HKPC had a total expenditure of \$663.7 million. The Audit Commission (Audit) has recently conducted a review of HKPC. The findings are contained in this Audit Report and another one entitled “Provision of consultancy, research and development and training services by the Hong Kong Productivity Council” (Chapter 2 of the Director of Audit’s Report No. 73). This Audit Report reviews matters relating to the governance and administrative issues of HKPC.

Corporate governance and performance reporting

2. *Need to improve attendance of some members.* While noting that the overall attendance rates of HKPC Council/Committee meetings were not low, Audit examination of the attendance records of Council/Committee members appointed or reappointed during the period from 2014 to 2019 (up to 31 March) revealed that three members had attended less than half of the Council/Committee meetings over their tenures. Audit noted that: (a) one member attended only 9 (45%) of the 20 Council meetings and 3 (43%) of the 7 Business Development Committee meetings; (b) another member attended only 3 (43%) of the 7 Business Development Committee meetings; and (c) there was also a third member who attended only 1 (25%) of the 4 Finance Committee meetings (para. 2.4).

Executive Summary

3. *Late issue of minutes of Council/Committee meetings.* At a Council meeting held in September 2009, it was decided that the Council Secretariat should: (a) provide members with the draft minutes of Council/Committee meetings within three weeks after the meetings; and (b) provide members with the revised draft minutes (i.e. incorporating proposed amendments to the draft minutes) within two weeks after the issue of the draft minutes. Audit noted that, for 19 (90%) of the 21 Council/Committee meetings held in 2018 and 2019 (up to 31 March), the revised draft minutes were issued more than two weeks after the issue of the draft minutes. The delays ranged from 1 to 29 days, averaging 14 days (paras. 2.6 and 2.7).

4. *Late submission of declaration of interests by some Council members.* According to HKPC's Code of Conduct for Council members, members shall disclose and register in writing their personal interest, direct or indirect, pecuniary or otherwise, on first appointment and thereafter annually to the Council Secretariat. Audit examined 24 declaration of interest forms on first appointment and 95 annual declaration of interest forms submitted by Council members from 2015 to 2019 (up to 31 March). Audit found that 12 (13%) of the 95 annual declaration of interest forms were submitted after the required submission dates. The delays ranged from 1 to 55 days, averaging 15 days (paras. 2.9 and 2.10).

5. *Need to review HKPC's service focus.* A Consultancy Study was commissioned by HKPC in June 2001 to review its role, management and operation to ensure that they remain relevant and competitive in the context of Hong Kong's economic development. The Consultancy Study was completed in April 2002. The Consultancy Study recommended that: (a) HKPC's main focus over the next five years should be to provide integrated support across value chain of Hong Kong firms' activities. The principal market focus should be innovative and growth oriented manufacturing firms, particularly those in the foundation industries of Hong Kong, together with related services; and (b) the principal geographical focus should be Hong Kong and the Pearl River Delta. HKPC accepted the report in May 2002 and agreed to make reference to the recommendations therein in re-positioning its role, focus and operation. In March 2003, the Government and HKPC entered into a Memorandum of Administrative Arrangements (MAA). The service focus recommended in the 2002 Consultancy Study was incorporated in the provisions of MAA. Audit noted that there was a specific time frame in the recommendation in the 2002 Consultancy Study on HKPC's service focus. The Consultancy Study only recommended HKPC's service focus over the following five years (i.e. up to 2007). MAA was reviewed in 2009 and no change was made to HKPC's service focus. There was no documentary evidence showing that the service focus was considered during the review. Since the

Executive Summary

2002 Consultancy Study, HKPC's service focus stated in MAA has not been reviewed to ensure that it remains relevant in the context of Hong Kong's economic development. However, Audit noted that after the Consultancy Study conducted in 2002, there had been changes in Hong Kong's economic development as well as HKPC's strategic themes and service focus (paras. 2.13 to 2.17).

6. ***Performance targets not met.*** According to MAA, HKPC shall propose for CIT's approval a set of performance indicators for measuring the progress of HKPC's activities and submit to CIT a report on its achievements with regard to the performance indicators. Audit examination of the achievements of performance targets in the period from 2014-15 to 2018-19 revealed that: (a) every year, HKPC failed to meet one or more performance targets; and (b) some performance targets were not achieved for three years or more. According to MAA, if HKPC fails to achieve agreed performance targets, HKPC shall provide explanations for such failures to the satisfaction of CIT. However, for the targets on two key performance indicators (KPIs) on "Number of consultancy projects accepted" and "Income from manufacturing support projects", there was no documentary evidence showing that HKPC had provided explanations to CIT for failing to meet these two performance targets in 2017-18 (paras. 2.21, 2.23 and 2.24).

7. ***Need to improve disclosure of KPIs.*** From 2016-17 to 2018-19, 23 KPIs comprising 13 "Core KPIs" and 10 "Other KPIs" were set to assess HKPC's performance. According to HKPC, "Core KPIs" were more meaningful in measuring HKPC performance than "Other KPIs". Audit examined the KPIs disclosed in the Annual Reports and CIT's Controlling Officer's Reports (CORs) for 2016-17 and 2017-18 and noted that of the 23 KPIs, HKPC had not disclosed 11 (48%) KPIs. The 11 KPIs not disclosed in the Annual Reports and the CORs included 9 "Core KPIs" and 2 "Other KPIs". While HKPC disclosed 8 (80%) of the 10 "Other KPIs", only 4 (31%) of the 13 "Core KPIs" were disclosed. Audit also noted that in the HKPC Annual Report, there was only a comparison of current year's performance with that of previous four years. There was no comparison of actual performance against performance targets in the Annual Report (paras. 2.25 and 2.27).

Executive Summary

Human resource management

8. ***Significant difference between staff establishment and strength.*** Audit compared the staff establishment and the staff strength of HKPC as at 30 June 2018 and 30 June 2019 and found that: (a) the total staff strength fell short of the total staff establishment by 131 (18.8%) as at 30 June 2018 and by 123 (17.7%) as at 30 June 2019; (b) as at 30 June 2018 and 30 June 2019, there were significant staff shortfalls for Grade 4 to Grade 8 staff. In particular, there was a shortfall of 33 (18.5%) Grade 4 staff and 109 (45.2%) Grade 5 staff as at 30 June 2019; and (c) as at 30 June 2018 and 30 June 2019, there were significant staff surpluses for Grade 2 and Grade 3 staff (para. 3.3).

9. ***High staff turnover rates.*** Audit examination of HKPC's staff turnover rates for the five years from 2014-15 to 2018-19 revealed that: (a) the overall staff turnover rates were on the high side. The average staff turnover rate was 19.2%, ranging from 17.1% to 22.5%; and (b) the staff turnover rates were particularly high for Grade 3 (17.5% to 28%) and Grade 5 (17.3% to 24.3%) staff. The average staff turnover rates for Grade 3 and Grade 5 staff during the period were over 20%. Audit further analysed the years of service of the 109 staff who left HKPC on a voluntary resignation basis in 2018-19 and found that 46 (42%) of them had served in HKPC for less than two years (paras. 3.5 and 3.6).

10. ***Room for improvement in staff recruitment.*** HKPC recruited 318 staff in 2018-19. Audit reviewed the recruitment records of 100 of the 318 staff and found room for improvement in the following areas (para. 3.15):

- (a) ***Shortlisting criteria not set.*** According to HKPC Standard Practices, shortlisting should be based on criteria against the job requirements. However, Audit found that for all the 100 recruitment exercises examined, HKPC did not set any shortlisting criteria (para. 3.15(a));
- (b) ***Applications received not properly recorded.*** In all the 100 recruitment exercises examined, Audit noted that applications received had not been recorded in a register nor date-stamped upon receipt. Moreover, information on the number of applications received for each recruitment was not available (para. 3.15(b));

Executive Summary

- (c) ***Number of candidates shortlisted for interview fewer than required.*** HKPC Standard Practices stipulate that the requisitioning division/branch can shortlist at least three candidates for interview, where applicable and practicable. Audit noted that, for 22 (22 %) of the 100 recruitment exercises examined, fewer than three (only 1 or 2) candidates were shortlisted for interview. Documentary evidence was not available showing the justifications for shortlisting fewer than three candidates for interview (para. 3.15(c));
- (d) ***Selection Interview Evaluation Forms not properly completed.*** In 52 recruitment exercises, some required information on the Selection Interview Evaluation Forms, such as the ratings and comments on candidates after the interviews, was missing (para. 3.15(d));
- (e) ***Appointment of one candidate not meeting the job requirement.*** According to HKPC Standard Practices, for a successful applicant not meeting the basic entry requirements, approval from appropriate authority needs to be sought with full justification. Audit noted that, in one case, one of the job requirements for a Grade 3 post was “Diploma or Degree from disciplines such as computer science or equivalent”. However, a candidate who had not attained such qualification was appointed for the post. No justification was provided in approving the appointment of this candidate, who did not meet the job requirement (para. 3.15(e));
- (f) ***Need to require staff to refrain from participating in the selection process if a conflict of interest has been declared.*** In four recruitment exercises of Grade 3 and Grade 4 staff, the Selection Panel Chairman, who was the only assessor who decided the ratings of candidates, declared that he was a friend or an ex-colleague of the candidates. However, he continued to sit on the Selection Panel as Selection Panel Chairman (para. 3.15(f)); and
- (g) ***A person appointed to a post which he had not applied for.*** There was a case in which a person was offered a Grade 4 post which he had not applied for. Moreover, he had not gone through the shortlisting and interview procedures laid down in HKPC Standard Practices (para. 3.15(g)).

Executive Summary

Procurement and other administrative issues

11. *Need to improve the quotation process.* According to HKPC Standard Practices, the Procurement Officers will select prospective suppliers for quotations by rotation from the Registered Suppliers List based on the suppliers' capabilities on products/services. However, Audit found that the Procurement Officers did not select suppliers for quotations by rotation from the Registered Suppliers List. Audit reviewed the transaction records for 56 suppliers in 3 categories of products/services in the period from April 2017 to June 2019 and found that 14 (25%) of the 56 suppliers had never been invited for quotations. Moreover, Audit examined the records of 113 procurements of goods and services in March 2019 with purchase value over \$10,000 but not more than \$500,000 and found the following areas for improvement (paras. 4.3 and 4.4):

- (a) *No suppliers randomly selected for quotations.* According to HKPC, with effect from August 2018, the Procurement Officers are required to randomly select one supplier from the Registered Suppliers List for quotations. However, in one procurement, no supplier was randomly selected from the Registered Suppliers List for inviting quotations. Audit also noted that HKPC Standard Practices had not been revised to include the requirement of randomly selecting one supplier from the Registered Suppliers List for quotations (para. 4.4(a)); and
- (b) *No declaration of conflict of interests from procuring staff or approving officer.* According to HKPC Standard Practices, declaration of conflict of interests is mandatory for staff of the Procurement Unit and approving officers. In 9 (8%) of the 113 procurements examined, four staff were required to declare in each of the 9 procurements. However, in each of the 9 procurements, one staff did not indicate whether he/she had any private interest with the suppliers (para. 4.4(b)).

12. *Tendering procedures not conducted as required.* According to HKPC Standard Practices, if split order is suspected, the requisitioning officer is required to justify: (a) why it was unable to anticipate the second purchase at the time when the first purchase was made; or (b) that the repeated orders were made for different projects requiring different delivery dates that made it impossible to bundle the purchases. Audit examination of 125 purchase orders issued in January 2019 revealed that there were two purchase orders issued to the same supplier by the same requisitioning division on the same day (i.e. 24 January 2019) for the purchase of the

Executive Summary

same product (i.e. robot arms). The purchase requisitions of these two purchase orders were also raised on the same day (i.e. 5 December 2018). If the two purchase requisitions were bundled, the total estimated purchase value would amount to \$631,923, which was over the quotation limit of \$500,000, and therefore, tendering procedures needed to be followed. There was no documentary evidence showing that the requisitioning officer was unable to anticipate the second purchase at the time when the first purchase was made and that the different delivery dates had made it impossible to bundle the purchases (paras. 4.5 to 4.8).

13. ***Inactive suppliers in Registered Suppliers List.*** According to HKPC Standard Practices, with effect from October 2018, inactive suppliers who have not responded to any invitation for quotation or tender and have no transaction with HKPC for three consecutive years will be removed from the Registered Suppliers List. However, up to 30 June 2019, there was no readily available information on inactive suppliers on the Registered Suppliers List. Inactive suppliers could not be identified readily from the information kept in the existing computer system (paras. 4.11 and 4.12).

14. ***Need to improve the stocktaking procedures.*** In November 2017, HKPC started to conduct quarterly surprise stocktaking on selected movable and high value fixed assets susceptible to high risk to loss. Up to 30 June 2019, seven surprise stocktaking exercises had been conducted in seven divisions. In each exercise, 5 items susceptible to loss were selected for stocktaking, totalling 35 items selected for the seven exercises. Audit examined the stocktaking reports of the seven surprise stocktaking exercises and found that: (a) the number of fixed asset items selected for surprise stocktaking in each exercise was very small (i.e. 5 items) comparing to the total number of movable and high value fixed asset items (i.e. around 1,030 items); and (b) there were many types of movable and high value fixed assets which were susceptible to high risk to loss, e.g. notepad, digital camera, video recorder, camera lens, etc. However, 33 (94%) of the 35 items selected for surprise stocktaking were notebook computers. The remaining 2 items selected were an IP phone and a mobile phone (para. 4.20).

15. ***Need to improve equipment management.*** According to HKPC Standard Practices, equipment refers to any equipment, machinery or facility installed at HKPC for the purpose of technology development, demonstration or service support to the industry, and with an original purchase value equal to or above \$100,000. Audit examined the equipment management records for 2018-19 and found that: (a) an item

Executive Summary

of equipment (i.e. Cold Room) received on 26 March 2019 with an original purchase value of \$252,000 (i.e. above \$100,000) was not included in the list of equipment as at 31 March 2019; (b) 52 (16%) of the 320 items of equipment did not achieve the expected utilisation; and (c) two of the four divisions with equipment under their custody did not achieve the target rate of asset optimisation (paras. 4.23 and 4.24).

16. ***Need to monitor utilisation of company cars.*** As at 31 March 2019, HKPC had four company cars. Three company cars (i.e. Car A, Car B and Car C) were used with car pool driver service (i.e. with drivers) while one company car (i.e. Car D) was available for car on-loan service (i.e. without driver). HKPC does not calculate the utilisation rate of its company cars. Audit examination of the usage records of the four company cars in the period from January to March 2019 revealed that the utilisation of the company car without driver (i.e. Car D) was low. On 36 (60%) of the 60 working days from January to March 2019, Car D was idle for the whole day. Moreover, according to HKPC Standard Practices, the borrower of Car D is required to complete all the related car usage reports after every trip for monitoring purposes. Audit noted that there were no car usage reports of Car D other than the car log book and the car key collection record. Audit compared the records of the car log book with those of the car key collection record in the period from January to March 2019 and found that there were no records in the car log book for 11 (44%) of 25 trips recorded in the key collection record. The total usage hours of Car D could not be ascertained due to the incomplete records in the car log book (paras. 4.26, 4.29 and 4.30).

17. ***Room for improvement on claims of entertainment expenses.*** According to HKPC Standard Practices, the number of staff members involved in an official entertainment should not exceed the number of guests to be entertained. Otherwise, approval from the appropriate authorities is required. Audit examination of the records of 95 claims of entertainment expenses in the period from January to March 2019 revealed that for 15 claims (ranging from \$375 to \$4,356, averaging \$1,272), approvals were obtained on the claims where the number of staff members involved exceeded the number of guests. However, there was no documentary evidence showing the justifications for such approvals in 11 of the 15 claims (para. 4.34).

18. ***Guidelines on official travels outside Hong Kong not complied with.*** Audit found that: (a) according to HKPC Standard Practices on official travels outside Hong Kong, all official travels outside Hong Kong by staff members must be approved by their General Managers/Directors/Executive Director where appropriate through

Executive Summary

the submission of travel application before departure. Audit examined 73 applications for official travels outside Hong Kong submitted in the period from November 2018 to March 2019 and found that 9 (12%) of the 73 applications were approved after departure. Such approvals were obtained 1 to 15 days after departure (averaging 6 days). In particular, 2 (22%) of these 9 applications were submitted by staff members after departure; and (b) according to HKPC Standard Practices, if a staff member claims flight awards and the awards are credited to his mileage account, the staff member should declare the awards to the Finance and Procurement Division after the business trip to facilitate planning for the possible use of the awards for corporate functions. Audit examined 20 claims for business travels by air submitted by 13 staff in the period from January to March 2019 and the records for flight award mileage kept by the Finance and Procurement Division. Audit found that for 12 (60%) claims involving 10 (77%) staff, the staff concerned had not declared the flight awards to the Finance and Procurement Division after their business trips. There was no information indicating whether these 10 staff had claimed the mileage from the airlines (paras. 4.37 to 4.40).

Audit recommendations

19. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Executive Director, HKPC should:**

Corporate governance and performance reporting

- (a) **step up efforts to encourage Council/Committee members' attendance at meetings and issue minutes of meetings to them in a timely manner (para. 2.19(a) and (b));**
- (b) **ensure that Council members submit declaration of interest in a timely manner (para. 2.19(c));**
- (c) **review the service focus of HKPC stated in MAA and revise it where necessary (para. 2.19(d));**
- (d) **provide explanations for failing to achieve the agreed performance targets to the satisfaction of CIT and consider disclosing more KPIs and**

Executive Summary

reporting actual performance against performance targets in the HKPC Annual Report (para. 2.28(a) to (c));

Human resource management

- (e) take effective measures to address the significant staff shortfalls and surpluses for individual staff grades and step up efforts to reduce high staff turnover (para. 3.10(a) and (b));
- (f) take measures to improve staff recruitment (para. 3.16);

Procurement and other administrative issues

- (g) take measures to improve the quotation process (para. 4.13(a) and (b));
- (h) ensure that purchases are not split into orders of smaller amounts (para. 4.13(c));
- (i) consider enhancing the existing computer system to facilitate the identification of inactive suppliers and ensure that they are removed from the Registered Suppliers List in a timely manner (para. 4.13(d) and (e));
- (j) expand the scope of surprise stocktaking for the quarterly surprise stocktaking exercise (para. 4.42(a));
- (k) ensure that all equipment items are included in the list of equipment, improve their utilisation rates and take appropriate follow-up action for the divisions which have not achieved the target rate of asset optimisation (para. 4.42(c) to (e));
- (l) record all trips and closely monitor the utilisation rate of the company cars and review the cost-effectiveness of maintaining the company car with low utilisation rate (para. 4.42(f) and (g));

Executive Summary

- (m) ensure that all claims of entertainment expenses where the number of staff members involved exceeds the number of guests are well justified (para. 4.42(h)); and
- (n) ensure that applications for official travels outside Hong Kong are submitted by staff members and approved before departure and all staff members declare their flight awards arising from business trips (para. 4.42(i) and (j)).

Response from HKPC and the Government

20. The Executive Director, HKPC and CIT agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 In the 1960s, with the predominance of family-owned small operations in the manufacturing sector, the Government saw the need to provide organised facilities to support the further development of Hong Kong industry. In 1967, the Government established the Hong Kong Productivity Council (HKPC) under the HKPC Ordinance (Cap. 1116) with an aim to improve the productivity, operational efficiency and competitiveness of local industries. According to section 4 of the HKPC Ordinance, the functions of HKPC shall be:

- (a) to promote the increased productivity of industry in Hong Kong and to encourage the more efficient utilisation of resources therein;
- (b) to consider matters affecting productivity of industry in Hong Kong;
- (c) to advise the Chief Executive (CE) of the Hong Kong Special Administrative Region concerning the productivity of industry in Hong Kong and measures designed to increase it;
- (d) to consult with, co-ordinate and assist the activities of persons or organisations, either in Hong Kong or elsewhere, engaged in the study, development or dissemination of programmes, methods or techniques designed to increase productivity in industry; and
- (e) to take on productivity related assignments elsewhere than in Hong Kong subject to the conditions that:
 - (i) the work can be carried out without prejudice to the performance by HKPC of the functions referred to in (a) to (d) above; and

Introduction

- (ii) the minimum rate charged by HKPC for the work is sufficient to recover all costs incurred in carrying out that work, which costs shall include direct costs (recurrent and capital) and overhead costs.

Consultancy Study of 2002

1.3 Since the early 1980s, more and more Hong Kong manufacturers had relocated their factories to the Pearl River Delta (PRD) Region and their Hong Kong offices became headquarters for manufacturing support and other higher value-adding activities (e.g. product design, procurement, marketing, quality control, etc.). In June 2001, in the light of the rapidly evolving economic landscape of Hong Kong, HKPC commissioned a Consultancy Study to review its role, management and operation to ensure its effectiveness in fulfilling its public mission and delivering its services to meet the need of its clients and the economy as a whole.

1.4 The Consultancy Study was completed in April 2002. The study recommended that HKPC's future service focus should be on providing integrated support to innovative and growth oriented Hong Kong firms across the value chain. The main sectoral focus should be on manufacturing firms, particularly those in Hong Kong's foundation industries (Note 1), and related service activities. According to the study:

- (a) a role in relation to the manufacturing value chain fitted better with HKPC's existing competencies; and
- (b) this provided a sharp service focus and ensured that the manufacturing sector, which was vital to Hong Kong's prosperity, was properly supported.

HKPC accepted the recommendations of the study.

Note 1: *According to the Consultancy Study, Hong Kong's foundation industries included electronics, machinery and equipment, toys and plastics, textiles and clothing.*

Memorandum of Administrative Arrangements with the Government

1.5 In March 2003, the Government and HKPC entered into a Memorandum of Administrative Arrangements (MAA). MAA provides a framework for the relationship between the Government and HKPC and sets out in detail the responsibilities of each party. Following the recommendations of the 2002 Consultancy Study (see para. 1.4), MAA states that:

- (a) the provisions of MAA are founded on the principle that HKPC should have autonomy and flexibility in utilising its funds and resources insofar as it is not inconsistent with the provisions of the HKPC Ordinance;
- (b) the service focus of HKPC is to provide integrated support to innovative and growth oriented Hong Kong firms across the value chain, with the sectoral focus on manufacturing, particularly in Hong Kong's foundation industries, and related service activities, and the main geographical focus on Hong Kong and the PRD in Mainland China;
- (c) HKPC may keep as reserves any savings from its annual block grant arising from any reasons other than a curtailment or cessation of activity stated in its Annual Programme and Estimates (see para. 1.11), or reduction in remuneration for its staff as a consequence of any civil service's pay adjustment; and
- (d) at any one point in time the level of reserves shall not exceed 15% of HKPC's annual block grant in the current financial year. Amount in excess of the limit shall be returned to the Government in the following financial year.

1.6 In June 2009, the Government and HKPC renewed MAA. A number of revisions were made to MAA including, for example, removal of the clause that required HKPC to use part of its subvention obtained from the Government to fund the recurrent operating cost of the Clothing Technology Demonstration

Introduction

Centre Company Limited (Note 2). However, the salient features mentioned in paragraph 1.5 remained unchanged.

Recent initiatives of HKPC

1.7 In the 2016 Policy Address, CE said that re-industrialisation was a potential new area of economic growth for Hong Kong and announced that HKPC would facilitate industrial upgrading and transformation, enabling enterprises to embrace re-industrialisation and move towards high value-added production. Examples of major initiatives introduced by HKPC in 2017 and 2018 to facilitate the Government's policy direction of re-industrialisation included:

- (a) establishing the “Smart Industry One” (see Photograph 1) in August 2017 to showcase the concept and features of the Fourth Industrial Revolution;
- (b) establishing the “Inno Space” (see Photograph 2) in October 2017 to provide working space and technical support for start-ups, students and graduates so as to help them develop their innovative ideas into industrial designs; and
- (c) launching the “Smart Industry One Consortium” exchange platform in March 2018 to enable the industry to keep abreast of the latest development on smart industry.

Note 2: *Clothing Technology Demonstration Centre Company Limited was a subsidiary of HKPC, which served to demonstrate technologies and production systems with a view to improving the efficiency of the textile and garment sectors. The Council (see para. 1.8) decided that the company had completed its mission and the company was wound up in October 2008.*

Photograph 1

Smart Industry One of HKPC



Source: HKPC records

Photograph 2

Inno Space of HKPC



Source: HKPC records

Governance and management

1.8 The Council is the governing body of HKPC. According to the HKPC Ordinance, the Council shall consist of not more than 23 members appointed by CE (Note 3), comprising a Chairman, 17 persons representing management, labour and professional or academic interests, and not more than five public officers (Note 4). The Council meets three times a year and is supported by four Committees:

- (a) ***Audit Committee.*** The responsibilities of this Committee include monitoring and making recommendations to enhance HKPC's healthy corporate governance. As at 31 March 2019, there were seven members in this Committee;
- (b) ***Business Development Committee.*** The responsibilities of this Committee include reviewing the business activities of HKPC, exploring new business opportunities, and recommending the three-year strategic plan of HKPC to the Council. As at 31 March 2019, there were eight members in this Committee;
- (c) ***Finance Committee.*** The responsibilities of this Committee include monitoring the financial performance of HKPC, making recommendations on HKPC's Three-year Forecast (see para. 1.11) and Annual Programme and Estimates, and the transfer of funds between major heads of expenditure, for consideration by the Council. It also advises the Council on matters relating to HKPC's financial policies and matters that have a significant financial impact on HKPC. As at 31 March 2019, there were eight members in this Committee; and
- (d) ***Staffing Committee.*** The responsibilities of this Committee include appointing staff and monitoring the staffing situation. It also advises the Council on human resources development policies and monitors HKPC's

Note 3: *The authority of CE to appoint members of the Council, other than the Chairman, has been delegated to the Secretary for Innovation and Technology.*

Note 4: *As at 31 March 2019, the five public officers appointed as Council members were: (a) the Permanent Secretary for Innovation and Technology; (b) the Commissioner for Innovation and Technology; (c) the Director-General of Trade and Industry; (d) the Government Economist; and (e) the Deputy Commissioner for Labour (Labour Administration).*

general terms and conditions of service. As at 31 March 2019, there were ten members in this Committee.

1.9 Under the HKPC Ordinance, the Council is given the power to appoint an Executive Director (ED) to be the chief administrative officer, other officers, servants and agents. As at 31 March 2019, HKPC had a total of 640 staff, comprising 245 permanent and 395 contract staff. The organisation chart of HKPC as at 31 March 2019 is shown at Appendix A.

Role of the Commissioner for Innovation and Technology

1.10 The Commissioner for Innovation and Technology (CIT), who heads the Innovation and Technology Commission (ITC), is the Controlling Officer of the subventions granted to HKPC (see para. 1.15). As the Controlling Officer, CIT is responsible for ensuring that HKPC's activities accord with its objectives and relevant public policies and priorities, and that HKPC's policy objectives are appropriate. CIT may also advise HKPC on the need to review these objectives in the light of changes in the economic environment.

1.11 According to MAA, HKPC is required to submit to CIT annually a Three-year Forecast and an Annual Programme and Estimates. The Three-year Forecast should set out the strategic targets of HKPC, the plans to be adopted in achieving these targets and an assessment of their resource implications. On the other hand, the Annual Programme and Estimates should include proposed activities categorised in different programme areas and estimates of income and expenditure for the forthcoming financial year for the Government's approval.

1.12 Under the HKPC Ordinance, HKPC is also required to submit to the Government within six months after the end of each financial year, for tabling in the Legislative Council:

- (a) a report on its activities; and
- (b) a copy of its audited accounts.

HKPC Standard Practices

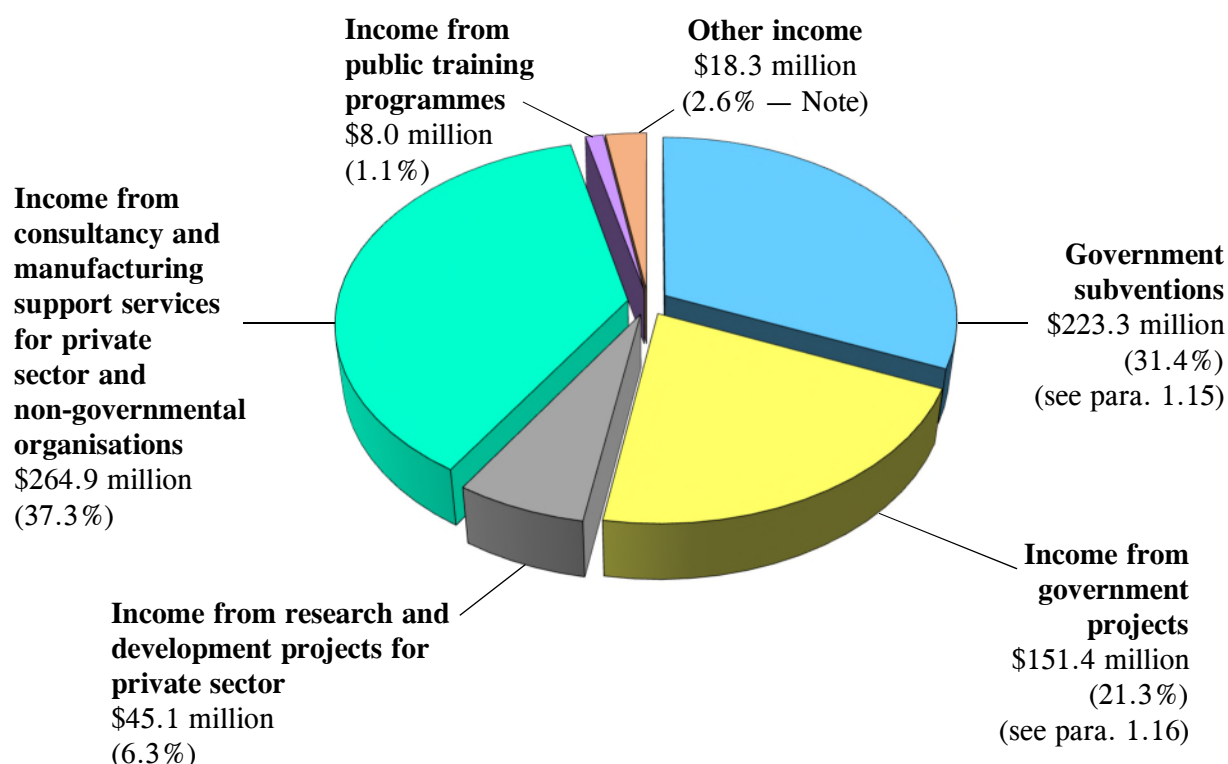
1.13 HKPC has issued a set of HKPC Standard Practices to provide guidance to staff for the proper administration and functioning of HKPC. HKPC Standard Practices stipulate the policies, regulations and procedures governing HKPC's operations (e.g. human resource and procurement management).

Income

1.14 In 2017-18, HKPC had a total income of \$711 million. Figure 1 provides an analysis of the sources of income.

Figure 1

**Analysis of total income of \$711 million of HKPC
(2017-18)**



Source: HKPC records

Note: Other income was mainly income from exhibitions and study missions, interest income and rental income.

1.15 The Government partly funds the operation of HKPC. In 2017-18, total government subventions received by HKPC amounted to \$223.3 million. The subventions comprised the following:

- (a) ***Recurrent subvention.*** This is provided to HKPC in the form of a cash-limited annual block grant. In 2017-18, HKPC received a recurrent subvention of \$201.9 million from ITC;
- (b) ***Subvention in addition to annual block grant.*** To enhance HKPC's services, additional subventions have been provided on top of the annual block grant on a time limited basis. In 2017-18, income recognised from ITC's additional subvention for Inno Space (see para. 1.7(b)) amounted to \$5.4 million (Note 5); and
- (c) ***Funding to the Automotive Parts and Accessory Systems Research and Development Centre (APAS)*** (Note 6). According to a Funding Agreement entered into between the Government and HKPC in March 2013, the Innovation and Technology Fund (ITF — Note 7) provides financial assistance to support the operation of APAS for the period from 1 April 2006 to 31 March 2021. In 2017-18, HKPC received \$16 million from ITF to cover the operating costs of APAS.

Note 5: *ITC's financial provision to HKPC in 2017-18 under the Government's General Revenue Account amounted to \$215.9 million, comprising a recurrent subvention of \$201.9 million and an additional subvention of \$14 million for the Inno Space. Of the \$14 million for the Inno Space, HKPC recognised \$5.4 million and \$8.6 million as its income in 2017-18 and 2018-19 respectively in accordance with its accounting policies.*

Note 6: *APAS was initially set up as an independent legal entity. In November 2012, it merged with HKPC and became a division of the Technology Development Branch of HKPC.*

Note 7: *ITF was established under the Public Finance Ordinance (Cap. 2) to finance projects that contribute to innovation and technology upgrading in the manufacturing and service industries, as well as those that contribute to the upgrading and development of the manufacturing and service industries.*

Introduction

1.16 In addition to government subventions, HKPC also received the following income from the Government:

- (a) ***Income from government funding schemes.*** These mainly represented ITF funded research and development projects initiated by HKPC. In 2017-18, project funding from ITF amounted to \$57.9 million;
- (b) ***Consultancy services for government bureaux/departments (B/Ds).*** These mainly represented consultancy services engaged by B/Ds through competitive bidding processes. For example, the Highways Department engaged HKPC to develop a robot system for placement and collection of traffic cones and lanterns in road works (see Photograph 3). In 2017-18, income from consultancy services for B/Ds amounted to \$65.7 million; and
- (c) ***Secretariat services for government funding schemes*** (Note 8). Services provided by HKPC included planning and organising publicity and promotional activities, receiving and undertaking initial vetting of applications, monitoring the progress of approved projects, and disbursing funds for the funding schemes. In 2017-18, income from secretariat services for government funding schemes amounted to \$27.8 million.

Note 8: *In 2017-18, HKPC provided secretariat services for four government funding schemes, namely: (a) Cleaner Production Partnership Programme; (b) Dedicated Fund on Branding, Upgrading and Domestic Sales; (c) Recycling Fund; and (d) Retail Technology Adoption Assistance Scheme for Manpower Demand Management.*

Photograph 3

A consultancy project on robot system engaged by the Highways Department



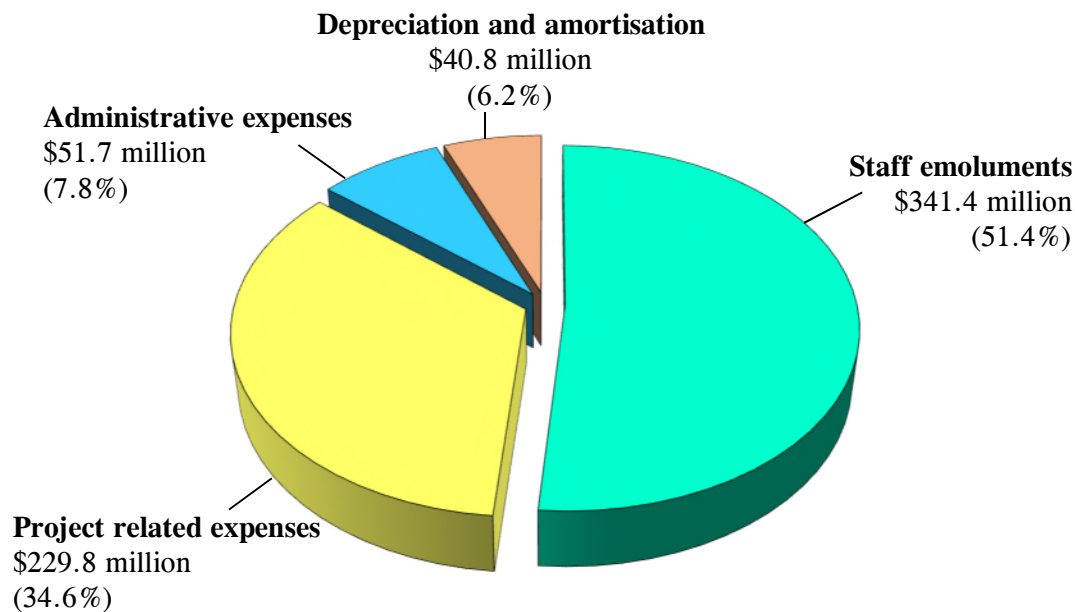
Source: HKPC records

Expenditure

1.17 In 2017-18, HKPC had a total expenditure of \$663.7 million. Figure 2 provides an analysis of the expenditure.

Figure 2

**Analysis of total expenditure of \$663.7 million of HKPC
(2017-18)**



Source: HKPC records

Audit review

1.18 In 2009, the Audit Commission (Audit) completed a review of HKPC and reported the results in Chapter 7 and Chapter 8 of the Director of Audit's Report No. 53 of October 2009.

1.19 In March 2019, Audit commenced a review of HKPC. The findings of this audit review are contained in two separate Audit Reports, as follows:

- (a) "Governance and administrative issues of the Hong Kong Productivity Council" (the subject matter of this Audit Report); and
- (b) "Provision of consultancy, research and development and training services by the Hong Kong Productivity Council" (Chapter 2 of the Director of Audit's Report No. 73).

1.20 This Audit Report focuses on the following areas:

- (a) corporate governance and performance reporting (PART 2);
- (b) human resource management (PART 3); and
- (c) procurement and other administrative issues (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from HKPC

1.21 ED, HKPC agrees with all the issues raised in the two Audit Reports and accepts the corresponding recommendations. He has said that he greatly appreciates the tremendous efforts made by Audit in conducting the review. The areas covered are comprehensive and the recommendations made are useful and constructive. HKPC attaches great importance to the audit recommendations, and has drawn up a detailed action plan with full consultation to the HKPC Council on it. Follow-up actions have been taken immediately in respect of some of the audit recommendations, whilst further concrete actions have been scheduled to implement the rest.

General response from the Government

1.22 CIT agrees with the audit recommendations. She has said that:

- (a) the Government appreciates the audit review on the administration and operation of HKPC. ITC is grateful for the observations and recommendations, which will help HKPC improve its corporate governance, financial and human resources management, management of consultancy and manufacturing support services, performance measurement and commercialisation of results of research and development projects, as well as provision of training services in order to serve the industry more effectively and efficiently; and
- (b) HKPC has informed the Government that it accepts all the recommendations as set out in the two Audit Reports. ITC will work

Introduction

closely with HKPC to ensure the early implementation of improvement measures as appropriate.

Acknowledgement

1.23 Audit would like to acknowledge with gratitude the full cooperation of the staff of ITC and HKPC during the course of the audit review.

PART 2: CORPORATE GOVERNANCE AND PERFORMANCE REPORTING

2.1 This PART examines corporate governance and performance reporting issues, focusing on the following areas:

- (a) corporate governance (paras. 2.2 to 2.20); and
- (b) performance reporting (paras. 2.21 to 2.29).

Corporate governance

2.2 The Council is HKPC's governing body, providing strategic leadership in the fulfilment of the organisation's functions. As at 31 March 2019, the Council consisted of 23 members appointed by the CE (see Note 3 to para. 1.8), comprising a Chairman, 17 persons representing management, labour and professional or academic interests and five public officers (see Note 4 to para. 1.8). Council members are non-executive in nature and are appointed for a two-year term. The Council meets three times a year and is supported by four Committees:

- (a) Audit Committee;
- (b) Business Development Committee;
- (c) Finance Committee; and
- (d) Staffing Committee (see para. 1.8).

Need to improve attendance of some members

2.3 In the period from 2014 to 2019 (up to 31 March), 88 Council/Committee meetings were held. The attendance rates of these meetings ranged from 72% to 100% (see Table 1).

Table 1

**Attendance rates of Council/Committee meetings
(2014 to 2019 (up to 31 March))**

Year	Attendance rate				
	Council	Audit Committee	Business Development Committee	Finance Committee	Staffing Committee
2014	93 %	92 %	78 %	100 %	89 %
2015	87 %	97 %	81 %	90 %	97 %
2016	86 %	86 %	72 %	90 %	82 %
2017	96 %	97 %	95 %	100 %	91 %
2018	91 %	97 %	100 %	83 %	97 %
2019 (up to 31 March)	87 %	100 %	88 %	75 %	90 %

Source: Audit analysis of HKPC records

2.4 While noting that the overall attendance rates of HKPC Council/Committee meetings were not low, Audit examination of the attendance records of Council/Committee members appointed or reappointed during the period from 2014 to 2019 (up to 31 March) revealed that three members had attended less than half of the Council/Committee meetings over their tenures:

- (a) one member attended only 9 (45%) of the 20 Council meetings and 3 (43%) of the 7 Business Development Committee meetings;
- (b) another member, while having attended all Council meetings held during the period, attended only 3 (43%) of the 7 Business Development Committee meetings; and
- (c) there was also a third member who attended only 1 (25%) of the 4 Finance Committee meetings.

2.5 Audit considers that HKPC needs to step up its efforts to encourage members' attendance at meetings. Further measures may include, for example, reminding members of the importance of attending meetings and providing assistance to members who have difficulties in attending meetings where possible.

Late issue of minutes of Council/Committee meetings

2.6 It is important that the minutes of Council/Committee meetings are issued to members as soon as possible after each meeting. This would enable members to comment on the minutes or suggest amendments while their memory of the meeting is still fresh. At a Council meeting held in September 2009, it was decided that the Council Secretariat should:

- (a) provide members with the draft minutes of Council/Committee meetings within three weeks after the meetings; and
- (b) provide members with the revised draft minutes (i.e. incorporating proposed amendments to the draft minutes) within two weeks after the issue of the draft minutes.

2.7 Audit noted that, for 19 (90%) of the 21 Council/Committee meetings held in 2018 and 2019 (up to 31 March), the revised draft minutes were issued more than two weeks after the issue of the draft minutes. The delays ranged from 1 to 29 days, averaging 14 days.

2.8 According to HKPC, HKPC requested members to provide their proposed amendments to the draft minutes within two weeks. As there were cases where members took two weeks or more to provide their proposed amendments to the draft minutes, it was unrealistic for the Council Secretariat to incorporate the proposed amendments and issue the revised draft minutes within two weeks after the issue of the draft minutes. Audit considers that HKPC needs to encourage members to provide their proposed amendments to the draft minutes as early as possible and issue the minutes of meetings to them in a timely manner.

Late submission of declaration of interests by some Council members

2.9 According to HKPC's Code of Conduct for Council members, HKPC adopts a two-tier reporting system for declaration of interests by members. Under this system, members shall disclose and register in writing their personal interest, direct or indirect, pecuniary or otherwise, on first appointment and thereafter annually to the Council Secretariat. In addition, members must, as soon as practicable after they have become aware of, disclose to the Council Chairman of HKPC their direct personal or pecuniary interest in any matter under consideration by the Council or the Standing Committees prior to their discussion of the matter. All cases of declaration of interests by members shall be recorded in the minutes of meeting.

2.10 Audit examined 24 declaration of interest forms on first appointment and 95 annual declaration of interest forms submitted by Council members from 2015 to 2019 (up to 31 March). Audit found that 12 (13%) of the 95 annual declaration of interest forms were submitted after the required submission dates. The delays ranged from 1 to 55 days, averaging 15 days.

2.11 According to the Code of Conduct for Council members, when a known direct pecuniary interest exists, the Council Secretariat may withhold circulation of relevant papers to the member concerned. However, Audit noted that there was a case where a member submitted his annual declaration of interest form on 27 March 2019 after the deadline of 31 January 2019. Before the member submitted the form, the Staffing Committee papers and Council papers had been circulated to him on 5 March 2019 and 20 March 2019 respectively. On this occasion, there were no potential conflicts of interest. However, the late declaration would have prevented the Council Secretariat from withholding circulation of sensitive information in the relevant papers to that member if he had declared a known direct pecuniary interest. To avoid potential conflicts of interest, Audit considers that HKPC needs to take measures to ensure that Council members submit declaration of interest in a timely manner.

Need to review HKPC's service focus

2.12 In 1967, the Government established HKPC under the HKPC Ordinance to promote increased productivity and the use of more efficient processes throughout Hong Kong's business sectors. The functions of HKPC are set out in paragraph 1.2.

2.13 A Consultancy Study was commissioned by HKPC in June 2001 to review its role, management and operation to ensure that they remain relevant and competitive in the context of Hong Kong's economic development. The Consultancy Study was completed in April 2002. In the Consultancy Study, HKPC's role and focus were reviewed. The consultant took into account HKPC's core competencies and the development of Hong Kong as a World City as elucidated in a report issued by the Commission on Strategic Development in 2000 and stated in the consultancy report that:

- (a) a role in relation to the manufacturing value chain fitted better with HKPC's competencies but also presented some opportunities to develop existing and new expertise within a strategic framework;
- (b) the most challenging was the integration of support across the value chain, and between Hong Kong and the Mainland; and
- (c) HKPC had a unique competitive advantage in this area because no other organisation in the region had the same capacity to integrate service provision functionally and geographically.

2.14 In order to provide a sharp service focus, the Consultancy Study recommended that:

- (a) HKPC's main focus over the next five years should be to provide integrated support across value chain of Hong Kong firms' activities. The principal market focus should be innovative and growth oriented manufacturing firms, particularly those in the foundation industries (Note 9) of Hong Kong, together with related services; and
- (b) the principal geographical focus should be Hong Kong and PRD.

HKPC accepted the report in May 2002 and agreed to make reference to the recommendations therein in re-positioning its role, focus and operation.

Note 9: *The foundation industries are those industrial sectors which are the main contributors to output and wealth in the manufacturing sector in Hong Kong and the PRD. They include: (a) electronics; (b) machinery and equipment; (c) toys and plastics; (d) textiles; and (e) clothing.*

2.15 In March 2003, the Government and HKPC entered into an MAA. The service focus recommended in the 2002 Consultancy Study was incorporated in the provisions of MAA. MAA stated that the service focus of HKPC was to provide integrated support to innovative and growth oriented Hong Kong firms across the value chain, with the sectoral focus on manufacturing, particularly in Hong Kong's foundation industries, and related service activities, and the main geographical focus on Hong Kong and the PRD in Mainland China.

2.16 Audit noted that there was a specific time frame in the recommendation in the 2002 Consultancy Study on HKPC's service focus. The Consultancy Study only recommended HKPC's service focus over the following five years (i.e. up to 2007). MAA was reviewed in 2009 and no change was made to HKPC's service focus. There was no documentary evidence showing that the service focus was considered during the review. Since the 2002 Consultancy Study, HKPC's service focus stated in MAA has not been reviewed to ensure that it remains relevant in the context of Hong Kong's economic development.

2.17 The economic landscape of Hong Kong has in the past decades changed significantly. This requires HKPC to constantly review its role and service focus to ensure that it catches up with the needs of the industries. Audit noted that after the Consultancy Study conducted in 2002, there had been changes in Hong Kong's economic development as well as HKPC's strategic themes and service focus. Details are as follows:

- (a) ***Hong Kong needs to diversify to high value-adding industry sectors.*** In 2013, HKPC conducted the study "Hong Kong Industry Development Strategy – Leveraging Our Strength of Trustworthiness". According to the study report:
 - (i) the advantages in PRD as a low cost manufacturing base were steadily eroded as a result of increasing operational costs. As a result, the advantages enjoyed by Hong Kong's traditional industries for many years were dwindling; and
 - (ii) in order to strengthen its engine for economic growth, Hong Kong must diversify to high value-adding industry sectors with high potential, such as Healthcare and Medical Devices, Food Processing, Traditional Chinese Medicine, Elderly Care, Environmental Services,

High Value Logistics, Brand Licensing, Software Testing and Certification, and Creative and Innovative Toy;

(b) *New strategic themes of HKPC.* At a Council meeting held on 27 February 2016, the Council discussed HKPC's strategic framework and positioning to better support the formulation of business development initiatives to meet the new and emerging needs of industry. At the meeting, members agreed to pursue a 3-pronged strategy and 10 strategic themes for HKPC in future. The 10 strategic themes were:

- (i) sustainability services/products;
- (ii) re-industrialisation;
- (iii) healthcare solutions;
- (iv) novel materials;
- (v) testing and compliance;
- (vi) smart services/products;
- (vii) cyber security;
- (viii) business transformation;
- (ix) knowledge and innovation management; and
- (x) retooling;

The 10 strategic themes covered various industry sectors not limiting to the manufacturing sector;

- (c) ***Expansion of HKPC's service focus.*** Audit examined the Three-year Strategic Plans of HKPC approved in the period from 2016 to 2019 and noted that apart from the manufacturing sector, HKPC had expanded its service focus to other industry sectors, such as retail, medical, healthcare, pharmaceutical, Gerontech (Note 10), information technology industries, automotive, aviation, life sciences, transportation and logistics, energy, consumer goods and servicing industries. For example, under the strategic theme of healthcare solutions, market industry study was carried out to examine the market needs and availability of smart healthcare technologies for elderly care. According to HKPC, the market study provided valuable insights into the elderly care sector and facilitated HKPC to expand its service focus to Gerontech to tap this emerging market; and
- (d) ***Greater Bay Area.*** According to MAA, the main geographical focus of HKPC is on Hong Kong and the PRD in Mainland China. In 2017, the National Development and Reform Commission, the governments of Guangdong, Hong Kong and Macao signed the Framework Agreement on Deepening Guangdong-Hong Kong-Macao Cooperation in the Development of the Greater Bay Area. The Framework Agreement set out the goals and principles of cooperation and established the key cooperation areas in the development of the Guangdong-Hong Kong-Macao Greater Bay Area, which consisted of Hong Kong, Macao and nine PRD municipalities. The development of Greater Bay Area might have impact on the production base of Hong Kong industry.

2.18 HKPC's service focus stated in MAA has not been reviewed since the 2002 Consultancy Study. Furthermore, there had been changes in Hong Kong's economic development, HKPC's strategic themes and service focus. Audit considers that HKPC needs to review, in collaboration with ITC, the service focus of HKPC stated in MAA and revise MAA on the service focus where necessary.

Note 10: *Gerontech focuses on the application of technology towards elderly-related products and services to enhance the well-being, quality of life, independence and self-reliance of the elderly, and provide support to the families, caregivers, healthcare staff and institutions.*

Audit recommendations

2.19 **Audit has *recommended* that ED, HKPC should:**

- (a) **closely monitor the attendance of members at Council/Committee meetings and step up efforts to encourage members' attendance at meetings;**
- (b) **encourage members to provide their proposed amendments to the draft minutes of Council/Committee meetings as early as possible and issue the minutes of meetings to them in a timely manner;**
- (c) **take measures to ensure that Council members submit declaration of interest in a timely manner; and**
- (d) **in collaboration with ITC, review the service focus of HKPC stated in MAA and revise MAA on the service focus where necessary.**

Response from HKPC

2.20 **ED, HKPC agrees with the audit recommendations. He has said that:**

- (a) **regarding member attendance, HKPC will:**
 - (i) **send out the attendance record together with meeting agenda/papers before meetings, with a note to remind members of the importance of attending meetings and encourage their attendance;**
 - (ii) **offer the option of attendance by teleconferencing if the member is not physically available for attending the meeting; and**
 - (iii) **encourage members who could not attend meetings to provide their views/feedback on the papers in writing prior to the meeting;**
- (b) **HKPC will send reminder to members one week before deadline, and issue a further reminder to members on the day of deadline, stating that the revised**

draft minutes will be circulated by incorporating comments received on or before the deadline;

- (c) to avoid potential conflict of interest, since July 2019, the Council Secretariat has started to remind members to review if they have any direct/pecuniary interests on matters to be discussed at Council meetings before meeting starts. HKPC will:
 - (i) issue reminder seven days before the submission deadline, together with individual follow-up calls, to encourage submission of declaration of interest form as early as possible;
 - (ii) encourage submission of an electronic copy, to be followed by an original signed copy; and
 - (iii) send further reminder to members on the submission deadline to ensure that the declaration of interest is returned without further delay; and
- (d) although the service focus in MAA has not been revised since 2009, the strategic themes and service focus of HKPC were reviewed and updated frequently. The Three-year Strategic Plan is updated every year during the Annual Programme and Estimates exercise. HKPC will review and update the relevant sections of MAA with ITC.

Performance reporting

2.21 According to MAA:

- (a) to ensure that the subventions from the Government are used in a cost-effective manner for the provision of services, HKPC shall propose for CIT's approval a set of performance indicators for measuring the progress of HKPC's activities;
- (b) such performance indicators shall fall under but not limited to the following dimensions of performance:

- (i) service delivery;
 - (ii) operating efficiency;
 - (iii) financial results; and
 - (iv) effectiveness;
- (c) the performance indicators and targets may be reviewed from time to time and amended as agreed in writing by both HKPC and CIT;
- (d) HKPC shall submit to CIT a report on its achievements with regard to the performance indicators. These indicators provide important reference for planning and measuring the progress of the activities undertaken by HKPC and for facilitating the assessment and approval of HKPC's Annual Programme and Estimates by the Government; and
- (e) if HKPC fails to achieve agreed performance targets, HKPC shall provide explanations for such failures to the satisfaction of CIT.

2.22 Since 2010-11, the annual performance of HKPC has been reported against key performance indicators (KPIs) and targets set in its Annual Programme and Estimates approved by the Council and CIT. In 2018-19, HKPC's performance was reported with reference to 23 KPIs comprising 13 "Core KPIs" and 10 "Other KPIs" covering the areas of service delivery, operating efficiency, financial results and effectiveness.

Performance targets not met

2.23 Audit examination of the achievements of performance targets in the period from 2014-15 to 2018-19 revealed that:

- (a) every year, HKPC failed to meet one or more performance targets, although the number of targets not met decreased from 10 in 2014-15 to 1 in 2018-19 (see Table 2); and

Table 2

**Number of KPIs where performance targets were not met
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19
No. of KPIs (a)	30	22	23	23	23
No. of KPIs where performance targets were not met (b)	10	5	5	3	1
Percentage of KPIs where performance targets were not met (c) = (b) ÷ (a) × 100%	33%	23%	22%	13%	4%

Source: Audit analysis of HKPC records

- (b) some performance targets were not achieved for three years or more in the five-year period from 2014-15 to 2018-19:
 - (i) the target on one KPI, i.e. income from training courses, was not achieved in each of the five years;
 - (ii) the target on two KPIs, namely number of consultancy projects accepted and income from manufacturing support projects, were not achieved in each of the four years from 2014-15 to 2017-18; and
 - (iii) the target on one KPI, i.e. number of fee-charging training courses launched, was not achieved in each of the three years from 2014-15 to 2016-17 (see Table 3).

Table 3

**KPIs where performance targets were not met
(2014-15 to 2018-19)**

KPI	Extent of achievement of performance targets				
	2014-15	2015-16	2016-17	2017-18	2018-19
Core KPI					
1. Percentage of business employee hours charged to billable projects	91%	107%	110%	107%	103%
Other KPI					
2. No. of consultancy projects accepted	78%	86%	93%	72%	101%
3. No. of fee-charging training courses launched	60%	69%	90%	134%	117%
4. No. of people attended the fee-charging training courses	52%	79%	124%	207%	203%
5. Income from consultancy projects	91%	103%	110%	105%	106%
6. Income from training courses	65%	47%	53%	57%	60%
7. Income from manufacturing support projects	79%	69%	69%	79%	115%
8. Income per consultancy project in progress	86%	101%	93%	107%	107%
9. No. of new Government funded projects	80%	N/A (Note)			
10. Funding approved for new Government funded projects	76%	N/A (Note)			

Legend:  Performance targets not met

Source: *Audit analysis of HKPC records*

Note: *These two KPIs were no longer used from 2015-16.*

2.24 According to MAA, if HKPC fails to achieve agreed performance targets, HKPC shall provide explanations for such failures to the satisfaction of CIT. However, for the targets on two KPIs on “Number of consultancy projects accepted” and “Income from manufacturing support projects”, there was no documentary evidence showing that HKPC had provided explanations to CIT for failing to meet these two performance targets in 2017-18. As KPIs provide important reference for planning and measuring the progress of the activities undertaken by HKPC, and for facilitating the assessment and approval of HKPC’s Annual Programme and Estimates by the Government, Audit considers that HKPC needs to ascertain the reasons for failing to achieve the agreed performance targets and provide explanations for such failures to the satisfaction of CIT as stipulated in MAA.

Need to improve disclosure of KPIs

2.25 From 2016-17 to 2018-19, 23 KPIs comprising 13 “Core KPIs” and 10 “Other KPIs” were set to assess HKPC’s performance. According to HKPC, “Core KPIs” were more meaningful in measuring HKPC performance than “Other KPIs”. HKPC disclosed some KPIs in its Annual Reports and CIT’s Controlling Officer’s Reports (CORs). Audit examined the KPIs disclosed in the Annual Reports and CORs for 2016-17 and 2017-18 and noted that of the 23 KPIs, HKPC had not disclosed 11 (48%) KPIs. The 11 KPIs not disclosed in the Annual Reports and CORs included 9 “Core KPIs” and 2 “Other KPIs” (see Table 4). While HKPC disclosed 8 (80%) of the 10 “Other KPIs”, only 4 (31%) of the 13 “Core KPIs” were disclosed.

Table 4

KPIs not disclosed in the Annual Report or the COR

Dimension of performance	KPI
Core KPI	
Operating efficiency	1. Percentage of business employee hours charged to billable projects
Financial result	2. Overall income per employee
	3. Total external income
Effectiveness	4. Number of theme-based industry consultation organised
	5. Number of new services and products introduced
	6. Number of patent/licence/royalty
	7. Number of products/technologies commercialised
	8. Percentage of customers giving a score of 7.5 or above out of 10 in terms of productivity gain
	9. Training participants satisfaction index
Other KPI	
Service delivery	1. Number of fee-charging training courses launched
Financial result	2. Income per consultancy project in progress

Source: Audit analysis of HKPC records

2.26 Audit considers that HKPC needs to consider disclosing more KPIs in the HKPC Annual Report to enhance transparency and accountability, particularly the “Core KPIs”.

2.27 Audit also noted that in the HKPC Annual Report, there was only a comparison of current year’s performance with that of previous four years. There was no comparison of actual performance against performance targets in the Annual Report. To enhance transparency and accountability, Audit considers that HKPC needs to consider reporting actual performance against performance targets in its Annual Report.

Audit recommendations

2.28 **Audit has *recommended* that ED, HKPC should:**

- (a) **ascertain the reasons for failing to achieve the agreed performance targets and provide explanations for such failures to the satisfaction of CIT as stipulated in MAA;**
- (b) **consider disclosing more KPIs in the HKPC Annual Report, particularly the “Core KPIs”; and**
- (c) **consider reporting actual performance against performance targets in the HKPC Annual Report.**

Response from HKPC

2.29 **ED, HKPC agrees with the audit recommendations. He has said that HKPC will:**

- (a) **set up, in consultation with ITC, a more formal mechanism for submitting the reasons for shortfalls against KPI targets;**
- (b) **review the KPIs to be disclosed in the HKPC Annual Report with a view to disclosing more “Core KPIs”; and**
- (c) **consider reporting the actual performance against the target performance in the Annual Report.**

PART 3: HUMAN RESOURCE MANAGEMENT

3.1 This PART examines the human resource management, focusing on the following areas:

- (a) staff strength and turnover (paras. 3.2 to 3.11); and
- (b) staff recruitment (paras. 3.12 to 3.17).

Staff strength and turnover

3.2 According to HKPC Standard Practices, the total number of headcounts of each division/branch office of HKPC will be capped within the number of headcounts approved in the Annual Programme and Estimates by the Council. As at 30 June 2019, HKPC had nine job grades (see Table 5).

Table 5
Job grades of HKPC
(30 June 2019)

Level	Grade	Position
Senior	9	ED
	8	Director
	7	General Manager
	6	Deputy General Manager, Senior Consultant, Senior Manager
Middle	5	Consultant, Manager
	4	Associate Consultant, Assistant Manager, Senior Engineering/Laboratory/Technical Officer, Business/System/Security Analyst
General	3	Cadet Engineer, Engineering/Laboratory/Technical/Business Officer, Assistant Business/Security/System Analyst
	2	Assistant Engineering/Technical/Business Officer, Assistant Technical Support, Assistant Technician, Building Attendant
	1	Office/Property Assistant, Driver

Source: HKPC records

Significant difference between staff establishment and strength

3.3 Audit compared the staff establishment and the staff strength of HKPC as at 30 June 2018 and 30 June 2019 and found that:

- (a) the total staff strength fell short of the total staff establishment by 131 (18.8%) as at 30 June 2018 and by 123 (17.7%) as at 30 June 2019;
- (b) as at 30 June 2018 and 30 June 2019, there were significant staff shortfalls for Grade 4 to Grade 8 staff. In particular:
 - (i) there was a shortfall of 51 (29.3%) Grade 4 staff and 99 (41.1%) Grade 5 staff as at 30 June 2018; and
 - (ii) there was a shortfall of 33 (18.5%) Grade 4 staff and 109 (45.2%) Grade 5 staff as at 30 June 2019; and
- (c) as at 30 June 2018 and 30 June 2019, there were significant staff surpluses for Grade 2 (26 and 15 staff respectively) (Note 11) and Grade 3 (12 and 22 staff respectively) staff (see Tables 6 and 7).

Note 11: *The staff establishment of Grade 2 staff was reduced from 107 in 2017-18 to 58 in 2018-19. According to HKPC, the reduction of Grade 2 staff would be achieved through a gradual process and no dismissal or retrenchment would be done.*

Table 6

**Staff establishment and strength
(30 June 2018)**

Grade	Staff establishment (2018-19)	Staff strength (30 June 2018)	Surplus/ (shortfall)	
	(a) No.	(b) No.	(c) = (b) - (a) No.	(d) = (c) ÷ (a) × 100% Percentage
9	1	1	0	0.0%
8	3	2	(1)	(33.3%)
7	12	7	(5)	(41.7%)
6	66	53	(13)	(19.7%)
5	241	142	(99)	(41.1%)
4	174	123	(51)	(29.3%)
3	133	145	12	9.0%
2	58	84	26	44.8%
1	7	7	0	0.0%
Overall	695	564	(131)	(18.8%)

Source: Audit analysis of HKPC records

Table 7

**Staff establishment and strength
(30 June 2019)**

Grade	Staff establishment (2019-20)	Staff strength (30 June 2019)	Surplus/ (shortfall)	
	(a)	(b)	(c) = (b)-(a)	(d) = (c) ÷ (a) × 100%
	No.	No.	No.	Percentage
9	1	1	0	0.0%
8	3	2	(1)	(33.3%)
7	12	7	(5)	(41.7%)
6	66	54	(12)	(18.2%)
5	241	132	(109)	(45.2%)
4	178	145	(33)	(18.5%)
3	129	151	22	17.1%
2	58	73	15	25.9%
1	7	7	0	0.0%
Overall	695	572	(123)	(17.7%)

Source: Audit analysis of HKPC records

3.4 On various occasions, members of the Staffing Committee raised concern on the significant discrepancy between the staff establishment and the actual strength, especially for Grade 5 staff (i.e. Consultant and Manager). However, Audit noted that the problem of the shortfall of Grade 5 staff had become more serious. The shortfall of Grade 5 staff increased from 99 as at 30 June 2018 to 109 as at 30 June 2019 (see Tables 6 and 7). According to HKPC, Grade 5 staff is the backbone of HKPC's organisation structure to support the core business of consultancy. Audit considers that HKPC needs to take effective measures to address the significant staff shortfalls for some staff grades (especially Consultant and Manager) and the significant staff surpluses for some other staff grades.

High staff turnover rates

3.5 HKPC regularly reports the staff turnover rates (Note 12) to the Staffing Committee and conducts exit surveys with the staff who have left HKPC. Audit examination of HKPC's staff turnover rates for the five years from 2014-15 to 2018-19 revealed that:

- (a) the overall staff turnover rates were on the high side. The average staff turnover rate was 19.2%, ranging from 17.1% to 22.5%; and
- (b) the staff turnover rates were particularly high for Grade 3 (17.5% to 28%) and Grade 5 (17.3% to 24.3%) staff. The average staff turnover rates for Grade 3 and Grade 5 staff during the period were over 20% (see Table 8).

Note 12: *According to HKPC, staff turnover rate is calculated by dividing the number of staff who left HKPC on a voluntary resignation basis by the average number of staff in the year. The staff who left on such grounds as retirement, contract not renewed by HKPC or termination of employment by HKPC are excluded in the calculation.*

Table 8**Analysis of staff turnover rates by grade
(2014-15 to 2018-19)**

Grade	Staff turnover rate					
	2014-15	2015-16	2016-17	2017-18	2018-19	Average
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
8	0.0%	0.0%	0.0%	50.0%	0.0%	10.0%
7	21.1%	21.1%	0.0%	23.5%	12.5%	15.6%
6	11.1%	11.8%	14.6%	25.0%	11.5%	14.8%
5	20.3%	17.3%	21.4%	24.3%	20.4%	20.7%
4	23.0%	15.4%	15.4%	19.9%	18.6%	18.5%
3	19.4%	20.2%	17.5%	28.0%	21.9%	21.4%
2	18.5%	17.9%	17.3%	14.9%	20.3%	17.8%
1	0.0%	10.0%	0.0%	12.9%	0.0%	4.6%
Overall	19.8%	17.4%	17.1%	22.5%	19.1%	19.2%

Source: Audit analysis of HKPC records

3.6 Audit further analysed the years of service of the 109 staff who left HKPC on a voluntary resignation basis in 2018-19 and found that 46 (42%) of them had served in HKPC for less than two years (see Table 9).

Table 9

**Analysis of years of service of staff who left HKPC
(2018-19)**

Year of services	Number of staff who left HKPC	
< 1 year	27 (25%)	} 46 (42%)
≥ 1 to < 2 years	19 (17%)	
≥ 2 to < 3 years	11 (10%)	
≥ 3 to < 4 years	14 (13%)	
≥ 4 years	38 (35%)	
Total	109 (100%)	

Source: Audit analysis of HKPC records

3.7 HKPC conducted exit surveys to ascertain the reasons for departure of the staff having left HKPC. According to the exit surveys for 2014-15 to 2018-19, the main reasons for departure were remuneration and career advancement (see Table 10). During the period, 39.2% to 64% of staff left HKPC due to remuneration or career advancement reasons.

Table 10**Reasons for departure of staff having left HKPC
(2014-15 to 2018-19)**

Reason	2014-15	2015-16	2016-17	2017-18	2018-19
Remuneration/career advancement	52.8%	40.6%	39.2%	64.0%	60.6%
Job nature/work issues	34.4%	34.2%	37.4%	15.8%	20.2%
Further study/emigration	2.4%	3.6%	0.0%	5.0%	1.0%
Miscellaneous reasons (e.g. health issue, family consideration, etc.)	10.4%	21.6%	23.4%	15.2%	18.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Audit analysis of HKPC records

3.8 In the period 22 October 2018 to 16 November 2018, HKPC conducted an Employee Opinion Survey. Questionnaires were sent to 640 employees. A total of 532 (83.1%) completed questionnaires were received. It was stated in the survey report that:

- (a) HKPC's Employee Satisfaction Index was 79.4%. The Employee Satisfaction Index of employees at Grade 6 or above stood at 87.3%, which was significantly higher than the corresponding figures for Grades 1 to 3 (79%) and Grades 4 to 5 (76.9%);
- (b) employees generally perceived that HKPC's performance had yet to catch up with their expectation on all 14 dimensions of performance. In particular, compensation and benefits as well as recognition and reward were the two dimensions which should be given higher priority for improvement; and

- (c) 47.4% respondents provided feedback on the desired change at HKPC. Suggestions (such as introducing flexible working hours or home office, more competitive salary, more transparent appraisal system and more promotion opportunities) were provided.

3.9 Audit considers that HKPC needs to step up efforts to reduce high staff turnover, taking into account the results of the exit surveys and the Employee Opinion Survey.

Audit recommendations

3.10 Audit has *recommended* that ED, HKPC should:

- (a) take effective measures to address the significant staff shortfalls for some staff grades (especially Consultant and Manager) and the significant staff surpluses for some other staff grades; and
- (b) step up efforts to reduce high staff turnover, taking into account the results of the exit surveys and the Employee Opinion Survey.

Response from HKPC

3.11 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) the staff strength in September 2019 was 603 (compared with 572 in June 2019). The overall vacancy is in reducing trend, 25% reduction as at September 2019 compared with June 2019;
- (b) the following actions have been taken since 2019:
 - (i) enhancing the competitiveness of HKPC's remuneration package;
 - (ii) posting vacancies internally to encourage potential staff of other Divisions to apply; and

Human resource management

- (iii) adopting flexible timing for promotion;
- (c) the following actions will continue to be taken:
 - (i) engaging recruitment agencies for Grade 5 posts and critical posts for enhanced reach-out;
 - (ii) widening the source and pool of candidates through social media platform, recruitment agencies, recruitment talks in universities and overseas channels; and
 - (iii) taking effective measure to address the significant staff surpluses for some other staff grades;
- (d) HKPC closely monitors the turnover rate, reviews and reports the turnover rate to the Staffing Committee three times a year. The turnover rate in recent years has been on par with market;
- (e) keen competition for the scarce supply of technical/niche skill talents in the market has led to high turnover rate of HKPC as it has high portion of technical/business staff;
- (f) the 2019 half-year turnover rate was 6.9% with improvement as compared with 9% for the same period in 2018 while market reference from the Hong Kong Institute of Human Resource Management was 13%;
- (g) the following actions have been taken recently to retain talents:
 - (i) contract conversion since 1 July 2019;
 - (ii) salary review for critical cases;
 - (iii) introduction of new benefits to be more competitive with market;
 - (iv) enhanced work practices for staff's welfare;

- (v) development programmes for staff's career development; and
- (vi) operation process simplification since 2018 and digitalisation in 2019; and
- (h) HKPC will continue to review actions required to retain talents including the provision of market competitive remuneration package and follow up with the suggestions from the exit surveys and the Employee Opinion Survey.

Staff recruitment

3.12 HKPC's recruitment policy aims to recruit the right person for the right job at the right time on the basis of the candidates' qualifications, experience and competencies required for the vacant positions. Vacant positions could be opened up for both internal and external applicants to enhance the competitiveness of the process.

3.13 According to HKPC Standard Practices, the recruitment process is as follows:

- (a) **Requisition.** A division/branch needs to complete a requisition form for hiring a position in accordance with the manpower requirement plan;
- (b) **Advertising.** Upon receipt of a completed requisition form from a division/branch, the Human Resources Unit under the Human Resources and Facility Management Division will proceed to recruit the right person internally and externally. The position will be advertised in selected channels;
- (c) **Shortlisting.** The requisitioning division/branch can shortlist at least three candidates for interview, where applicable and practicable. A Selection Panel should be formed in accordance with the job grade of the vacant position;

- (d) ***Interview and selection.*** The Human Resources Unit is responsible for the arrangement of panel interviews with requisitioning division/branch and candidates. A minimum of one interview must be arranged. The Selection Panel should record on the Selection Interview Evaluation Forms the ratings and comments for both successful and unsuccessful candidates after interviews as well as recommendations for appointment, reservation and rejection; and
- (e) ***Appointment.*** Upon completion of the interview process, the selected candidate will be recommended to the parties concerned for approval. When the recommendations are approved, the Human Resources Unit will follow up with the successful candidate on the offer of the appointment.

3.14 The approving authorities with regard to the recruitment process stipulated in HKPC Standard Practices are shown in Table 11.

Table 11

Approving authorities with regard to the recruitment process

Vacancy level	Staff requisition	Selection Panel representation	Appointment
Grade 4 or below	A Grade 7 staff or Deputy General Manager (Note)	A Grade 6 staff	A Grade 7 staff or Deputy General Manager (Note)
Grade 5	A Grade 7 staff or Deputy General Manager (Note)	A Grade 7 staff or Deputy General Manager (Note)	A Grade 7 staff or Deputy General Manager (Note)
Grade 6	ED	A Grade 8 staff and a Grade 7 staff or Deputy General Manager (Note)	ED
Grade 7	ED	The chairperson of the Selection Panel will be the Staffing Committee Chairman. Its members include at least the ED and one member of the Staffing Committee or one member of the Council, and/or an independent outsider(s) related to the specific areas of expertise.	The Staffing Committee
Grade 8	ED	The composition is subject to the consideration of the Council Chairman and the Staffing Committee Chairman	The Council

Source: HKPC records

Note: Deputy General Manager is the approving authority for division/unit without Grade 7 staff only.

Room for improvement in staff recruitment

3.15 HKPC recruited 318 staff in 2018-19. Audit reviewed the recruitment records of 100 of the 318 staff. The 100 staff comprised staff from eight of the nine job grades. Audit found room for improvement in the following areas:

- (a) ***Shortlisting criteria not set.*** According to HKPC Standard Practices, shortlisting should be based on criteria against the job requirements. However, Audit found that for all the 100 recruitment exercises examined, HKPC did not set any shortlisting criteria;
- (b) ***Applications received not properly recorded.*** According to the Independent Commission Against Corruption (ICAC) Best Practice Checklist of Staff Administration, all applications received should be recorded in a register or properly date-stamped upon receipt to prevent tampering of applications. In all the 100 recruitment exercises examined, Audit noted that applications received had not been recorded in a register nor date-stamped upon receipt. Moreover, information on the number of applications received for each recruitment was not available. According to HKPC, all unsuccessful applications were disposed of once the posts were filled;
- (c) ***Number of candidates shortlisted for interview fewer than required.*** HKPC Standard Practices stipulate that the requisitioning division/ branch can shortlist at least three candidates for interview, where applicable and practicable. Audit noted that, for 22 (22%) of the 100 recruitment exercises examined, fewer than three (only 1 or 2) candidates were shortlisted for interview. Documentary evidence was not available showing the justifications for shortlisting fewer than three candidates for interview;
- (d) ***Selection Interview Evaluation Forms not properly completed.*** According to HKPC Standard Practices, the Selection Panel should record on the Selection Interview Evaluation Forms the ratings, comments and recommendations for all candidates. Audit noted that some required information on the Selection Interview Evaluation Forms of 52 of the 100 recruitment exercises was missing:
 - (i) in 52 exercises, there were a total of 149 Selection Interview Evaluation Forms. The overall ratings were not recorded on 118 (79%) of the 149 Forms;

- (ii) in 2 of the 52 exercises, the comments on candidates after the interviews were not recorded by any Selection Panel members in all the 9 Selection Interview Evaluation Forms;
 - (iii) in 1 of the 52 exercises, 2 of the 5 Selection Panel members did not give ratings against one of the six assessment criteria (i.e. problem solving and rational decision making); and
 - (iv) in 1 of the 52 exercises, 2 of the 5 Selection Panel members did not sign on the Selection Interview Evaluation Forms;
- (e) ***Appointment of one candidate not meeting the job requirement.*** According to HKPC Standard Practices, for a successful applicant not meeting the basic entry requirements, approval from appropriate authority needs to be sought with full justification. Audit noted that, in one case, one of the job requirements for a Grade 3 post was “Diploma or Degree from disciplines such as computer science or equivalent”. However, a candidate who had only attained the Foundation Diploma conferred by the Vocational Training Council in 2000 was appointed for the post. The Foundation Diploma course was a one-year course for Secondary Five school leavers to upgrade their generic skills. The Diploma was not the qualification required. No justification was provided in approving the appointment of this candidate, who did not meet the job requirement;
- (f) ***Need to require staff to refrain from participating in the selection process if a conflict of interest has been declared.*** According to HKPC Standard Practices:
- (i) for recruitment of staff of Grade 4 or below, the Selection Panel should comprise a Grade 6 staff (i.e. Selection Panel Chairman) and a secretary to the Panel (i.e. representative from Human Resources Unit);
 - (ii) if the recruitment process involves any conflict of interest (e.g. financial and/or personal), the staff members undertaking the recruitment duties, in particular, members of Selection Panels, should declare the conflict of interest to avoid such allegations as favouritism, unfairness, etc.; and

- (iii) upon declaration, the Selection Panel Chairman would, in consultation with the Panel and the secretary to the Panel, decide whether the staff member concerned should be excluded or should continue to sit on the Panel.

Audit noted that, in four recruitment exercises of Grade 3 and Grade 4 staff, the Selection Panel Chairman declared that he was a friend or an ex-colleague of the candidates, but he continued to sit on the Selection Panel as Selection Panel Chairman. Because the secretary to the Panel did not give ratings for candidates, the Selection Panel Chairman was the only assessor who decided the ratings of candidates. According to Best Practice Checklist of Staff Administration issued by ICAC, all staff involved in the selection process are required to declare any potential or actual conflict of interest and refrain from participating in the process if a conflict has been declared (e.g. a candidate is his/her relative or personal friend). Audit considers that, to avoid favouritism and unfairness, HKPC needs to require staff involved in the selection process to refrain from participating in the process as far as possible if a conflict of interest has been declared; and

- (g) *A person appointed to a post which he had not applied for.* Audit noted that there was a case in which a person (Person A) was offered a Grade 4 post which he had not applied for. Moreover, he had not gone through the shortlisting and interview procedures laid down in HKPC Standard Practices (see Case 1).

Case 1

**Appointment to a Grade 4 post without going through the
shortlisting and interview procedures
(October to December 2018)**

1. On 26 November 2018, requisition of a vacant Grade 4 post was raised by a division of HKPC. On 3 December 2018, HKPC put up an advertisement for the post for two weeks up to 17 December 2018. On 14 December 2018, HKPC offered the post to Person A, who had not applied for the post. The number of applications for the post was not available. No applicants for the post were shortlisted for interview.

2. Person A applied for another vacant Grade 2 post (which was two grades junior than the Grade 4 post) in October 2018 and was shortlisted to attend the writing test and first round interview on 13 November 2018 and the final round interview on 23 November 2018. After the final round interview for the Grade 2 post, the Selection Panel considered that Person A was capable of taking up the job duties and met the entry requirements of the Grade 4 vacant post. Therefore, the Selection Panel recommended Person A to fill the post. Person A started his employment as a Grade 4 staff on 19 December 2018.

Audit comments

3. According to HKPC Standard Practices, members of Selection Panel should perform thorough analysis and pursue good understanding of candidates' knowledge, skills and competencies against the job requirements of vacant positions during interviews. However, Person A had not been assessed based on the assessment criteria of the Grade 4 post, and had not attended any writing tests or any interviews for the post.

Source: Audit analysis of HKPC records

Audit recommendations

- 3.16 **Audit has *recommended* that ED, HKPC should:**
- (a) **set shortlisting criteria for selecting candidates for interview;**
 - (b) **properly record all applications received upon receipt to prevent tampering of applications and document the number of applications received for each recruitment;**
 - (c) **ensure that appropriate number of candidates are shortlisted for interview and document justifications for fewer than required number of candidates shortlisted;**
 - (d) **ensure that Selection Interview Evaluation Forms are properly completed by all Selection Panel members;**
 - (e) **ensure that the candidate appointed for a post meets the qualification requirement of the post;**
 - (f) **require staff involved in the selection process to refrain from participating in the process as far as possible if a conflict of interest has been declared; and**
 - (g) **review Case 1 regarding the appropriateness of offering a post to a person who has not applied for it, without going through the shortlisting and interview procedures laid down in HKPC Standard Practices.**

Response from HKPC

- 3.17 **ED, HKPC agrees with the audit recommendations. He has said that:**
- (a) **HKPC will set out shortlisting criteria in writing for selecting candidates for interview;**
 - (b) **HKPC will record key information related to the recruitment process (e.g. the number of applicants received and candidates shortlisted);**

- (c) some posts are technical and niche, and competitive in the market, and therefore difficult to recruit sufficient candidates for interview. HKPC will document reasons for less than required number of candidates shortlisted;
- (d) in general, the selection of candidate is based on consensus reached at Selection Panel meetings and hence the missing information would not have impact on the decision. The provision of comments by Selection Panel members is to facilitate HKPC's drafting of the paper circulated to Staffing Committee members for approval and is not mandatory;
- (e) HKPC will ensure that information on the Selection Interview Evaluation Forms including rating of assessment criteria, overall ratings and comments made by Selection Panel members are documented on each form, and ensure all Panel members sign on the form;
- (f) HKPC will continue to ensure that the candidate appointed for a post meets the qualification requirement of the post and properly document justification for any exceptional cases;
- (g) for candidates declared as "friend" by a staff member, the staff member will refrain from participating in the selection interview;
- (h) for candidate declared as "ex-colleague" by a staff member and the staff member had direct supervisor and subordinate relationship with the candidate, the General Manager of the post or additional interviewer will be required to participate in the selection interview; and
- (i) HKPC will review Case 1 regarding the appropriateness of offering the post to a person who has not applied for it without going through the shortlisting and interview procedures laid down in HKPC Standard Practices.

PART 4: PROCUREMENT AND OTHER ADMINISTRATIVE ISSUES

4.1 This PART examines HKPC's procurement and other administrative issues, focusing on:

- (a) procurement of goods and services (paras. 4.2 to 4.14); and
- (b) other administrative issues (paras. 4.15 to 4.43).

Procurement of goods and services

4.2 According to HKPC Standard Practices:

- (a) all purchase requisitions should be approved by the approving authorities;
- (b) procurement procedures should be based on the purchase value (see Table 12);

Table 12

Procurement procedures stipulated in HKPC Standard Practices

Purchase value	Procurement procedure
Not more than \$10,000	Low value purchase: - No purchase order is required - Purchase from the suppliers can be made by staff of divisions
Over \$10,000 but not more than \$500,000	Purchase by quotations: - Up to \$50,000: - Request quotations from at least 3 suppliers - Over \$50,000: - Request quotations from at least 5 suppliers - Purchase requisition and purchase order are required - Central procurement by Finance and Procurement Division
More than \$500,000	Purchase by tender: - Two-envelope approach and tender will be evaluated by Tender Assessment Panel comprising Technical Assessment Panel and Commercial Assessment Panel - Purchase requisition and purchase order are required

Source: HKPC records

- (c) split order by repeated purchase orders to the same supplier by the same requisitioning division for the same project or internal use to circumvent the approval requirements are strictly forbidden; and
- (d) staff should make a declaration of conflict of interests if he/she involves in any procurement activities.

Need to improve the quotation process

4.3 ***Suppliers for quotations not selected by rotation.*** For purchase value over \$10,000 but not more than \$500,000, invitations for quotation are required. According to HKPC Standard Practices, the Procurement Officers will select prospective suppliers for quotations by rotation from the Registered Suppliers List based on the suppliers' capabilities on products/services. However, Audit found that contrary to HKPC Standard Practices, the Procurement Officers did not select suppliers for quotations by rotation from the Registered Suppliers List. According to HKPC, instead of rotation, the Procurement Officers selected the required number of suppliers based on the past performance of the suppliers, e.g. the response rates of the companies in the previous invitations, feedback of users and their knowledge about the companies, etc. However, Audit noted that there was no documentary evidence showing that such considerations had been taken into account and why these considerations justified the deviation from the requirement stipulated in HKPC Standard Practices. Audit reviewed the transaction records for 56 suppliers in 3 categories of products/services in the period from April 2017 to June 2019 and found that 14 (25%) of the 56 suppliers had never been invited for quotations.

4.4 Audit examined the records of 113 procurements of goods and services in March 2019 with purchase value over \$10,000 but not more than \$500,000 and found the following areas for improvement:

- (a) ***No suppliers randomly selected for quotations.*** According to HKPC, with effect from August 2018, in addition to the suppliers selected based on the past performance of the suppliers, the Procurement Officers are required to randomly select one supplier from the Registered Suppliers List for quotations. However, in one procurement, no supplier was randomly selected from the Registered Suppliers List for inviting quotations. Audit also noted that HKPC Standard Practices had not been revised to include the requirement of randomly selecting one supplier from the Registered Suppliers List for quotations; and
- (b) ***No declaration of conflict of interests from procuring staff or approving officer.*** According to HKPC Standard Practices, declaration of conflict of interests is mandatory for staff of the Procurement Unit and approving officers. The staff concerned are required to indicate whether they have any private interest, direct or indirect, with the suppliers invited for quotations. Audit found that in 9 (8%) of the 113 procurements examined,

four staff were required to declare in each of the 9 procurements. However, in each of the 9 procurements, one staff did not indicate whether he/she had any private interest with the suppliers. The 9 cases of non-declaration involved 5 staff (some staff were involved in more than one case).

Audit considers that HKPC needs to take measures to ensure that selection of suppliers for quotations and declaration of conflict of interests are made in compliance with the requirements stipulated in HKPC Standard Practices. HKPC also needs to ensure that HKPC Standard Practices are updated in a timely manner to include all requirements relating to procurement.

Tendering procedures not conducted as required

4.5 A purchase requisition must be raised and approved by the appropriate approving authorities (Note 13) for procurement of goods or services. The Procurement Unit should request the required number of quotations for purchases with a total value of over \$10,000 and up to \$0.5 million. For purchases with a total value over \$0.5 million, tendering procedures must be followed. Purchase orders will normally be issued to suppliers at the end of procurement and tendering procedures by HKPC after they are authorised by the appropriate approving authorities (Note 14). According to HKPC Standard Practices:

- (a) repeated purchase orders to the same suppliers by the same requisitioning division for the same project to circumvent the approval requirements are strictly forbidden; and
- (b) if split order is suspected, the requisitioning officer is required to justify:
 - (i) why it was unable to anticipate the second purchase at the time when the first purchase was made; or

Note 13: *General Managers, Branch Directors and ED have the approving limits for purchase requisition of up to \$0.3 million, up to \$1 million and over \$1 million respectively.*

Note 14: *Manager, Procurement or above, Senior Manager, Procurement or above and Chief Financial Officer can authorise the issue of purchase orders with value up to \$0.1 million, up to \$0.2 million and over \$0.2 million respectively.*

Procurement and other administrative issues

- (ii) that the repeated orders were made for different projects requiring different delivery dates that made it impossible to bundle the purchases.

4.6 Audit examination of 125 purchase orders issued in January 2019 revealed that there were two purchase orders (i.e. Purchase order A and Purchase order B) issued to the same supplier by the same requisitioning division on the same day (i.e. 24 January 2019) for the purchase of the same product (i.e. robot arms). The purchase requisitions of these two purchase orders were also raised on the same day (i.e. 5 December 2018) (see Table 13).

Table 13

**Suspected split purchase orders
(January 2019)**

Purchase order	Date of requisition	Date of purchase order	Date of delivery	Purchase item	Quantity	Estimated purchase value (\$)
A	5 December 2018	24 January 2019	13 March 2019	Robot arm	1	210,641
B	5 December 2018	24 January 2019	15 March 2019	Robot arm	2	421,282
Total					3	631,923

Source: Audit analysis of HKPC records

4.7 On 14 December 2018, the Procurement Unit noted that if the two purchase requisitions were bundled, the total estimated purchase value would amount to \$631,923, which was over the quotation limit of \$500,000, and therefore, tendering procedures needed to be followed. The Procurement Unit requested the requisitioning division to follow tendering procedures for these two purchase requisitions. The requisitioning division replied to the Procurement Unit that the robot arms were purchased for two different projects and therefore should be separated into two purchases. In response to Audit enquiry, HKPC informed Audit in October 2019 that the products purchased were purchased for two different projects with different

applications, which were allowed under HKPC Standard Practices. The procurements by two purchase requests and subsequently two purchase orders in this case were approved by the authorised management, who was also authorised to approve the purchase if the two purchases were combined.

4.8 In Audit's view, the purchase should not have been split into two orders because the two purchase orders were raised on the same day to the same supplier by the same requisitioning division for the purchase of the same product. There was no documentary evidence showing that the requisitioning officer was unable to anticipate the second purchase at the time when the first purchase was made and that the different delivery dates had made it impossible to bundle the purchases.

4.9 Audit considers that HKPC needs to take effective measures to ensure that purchases are not split into orders of smaller amounts so as to circumvent the requirements stipulated in HKPC Standard Practices.

Inactive suppliers in Registered Suppliers List

4.10 HKPC maintains a Registered Suppliers List which is categorised by the types of goods/services the suppliers provide. As at 15 May 2019, there were 251 categories of goods/services with a total of 2,750 suppliers on the Registered Suppliers List. The average number of suppliers in each category of goods/services was 18, ranging from 2 to 225.

4.11 Before October 2018, the annual review on inactive suppliers identified those inactive suppliers who did not have any purchase transaction with HKPC for two consecutive years. The inactive suppliers would be removed from the Registered Suppliers List after HKPC obtained the consent from the suppliers concerned. In October 2018, ICAC completed an Assignment Report on provision of consultancy services. ICAC reviewed the management of Registered Suppliers List and commented that:

- (a) the inactive registered suppliers were kept on the Registered Suppliers List and would be invited to bid; and

- (b) this practice might create a false impression of sufficient competition in a procurement exercise or could be exploited with a corrupt motive.

To ensure competitive bidding, ICAC recommended that HKPC should review the policy on managing inactive registered suppliers (i.e. removal from the List or suspension from bidding if they had not responded to any invitation for quotation/tender for a specified number of consecutive years). In response to ICAC's recommendation, with effect from October 2018, inactive suppliers who have not responded to any invitation for quotation or tender and have no transaction with HKPC for three consecutive years will be removed from the Registered Suppliers List. In October 2018, HKPC Standard Practices were updated accordingly.

4.12 Audit noted that, since 2016-17, HKPC had kept the manual records on the suppliers' responses to invitations of quotations/tenders. In April 2019, HKPC started to record the suppliers' responses to invitations of quotations/tenders in its computer system used for managing the Registered Suppliers List and for processing procurement of goods and services. However, up to 30 June 2019, there was no readily available information on inactive suppliers on the Registered Suppliers List. Inactive suppliers could not be identified readily from the information kept in the existing computer system. As there are some 2,800 suppliers in the Registered Suppliers List, Audit considers that HKPC needs to consider enhancing the existing computer system to facilitate the identification of inactive suppliers on the Registered Suppliers List. To ensure competitive bidding, HKPC also needs to take measures to ensure that inactive suppliers are removed from the Registered Suppliers List in a timely manner.

Audit recommendations

4.13 **Audit has recommended that ED, HKPC should:**

- (a) **take measures to ensure that selection of suppliers for quotations and declaration of conflict of interests are made in compliance with the requirements stipulated in HKPC Standard Practices;**
- (b) **ensure that HKPC Standard Practices are updated in a timely manner to include all requirements relating to procurement;**

- (c) **take effective measures to ensure that purchases are not split into orders of smaller amounts so as to circumvent the requirements stipulated in HKPC Standard Practices;**
- (d) **consider enhancing the existing computer system to facilitate the identification of inactive suppliers on the Registered Suppliers List; and**
- (e) **take measures to ensure that inactive suppliers are removed from the Registered Suppliers List in a timely manner.**

Response from HKPC

4.14 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) the recently introduced arrangement of random selection of suppliers already served the same purpose and hence HKPC did not select the suppliers by rotation due to limitation of manpower. HKPC will update the requirement of HKPC Standard Practices to align with the current practice of random selection of suppliers instead of selection by rotation;
- (b) an e-form embedded with the function of declaration of conflict of interest has been used for procurement since April 2019. The processing will not be proceeded in the system if the staff concerned does not make declaration. HKPC will continue to adopt the e-form to ensure that conflict of interests is declared by staff;
- (c) HKPC will strengthen and reinforce the requirements stipulated in HKPC Standard Practices via communications with all divisions and closely monitor by procurement team. The divisions will report to management for any potential anomalies where appropriate; and
- (d) HKPC will consider enhancing the existing computer system, perform an annual review to deactivate the inactive suppliers from the Registered Suppliers List in October 2019, and continue to perform the review on annual basis to deactivate the inactive suppliers.

Other administrative issues

Need to improve the stocktaking procedures

4.15 According to HKPC Standard Practices on fixed assets, an item purchased (which is not for resale or transfer out as project deliverable) with an estimated useful life of more than one year and acquisition cost in excess of \$5,000 should be classified as a fixed asset. An item (irrespective of its estimated useful life and its acquisition cost) purchased as an equipment under the budget for equipment of a Government funded project should be treated as a fixed asset and governed by HKPC Standard Practices on fixed assets. An item purchased to be delivered as a product (or form part of a product) to a client is not classified as fixed asset. As at 31 March 2019, HKPC had 9,353 fixed asset items with a total cost of \$635 million and a net book value of \$226 million (see Table 14).

Table 14

Analysis of fixed assets by category
(31 March 2019)

Category	No. of items	Total cost (\$ million)	Total net book value (\$ million)
HKPC building	1 (0.0%)	267.8 (42.2%)	114.0 (50.6%)
Laboratory and other equipment	2,470 (26.4%)	184.5 (29.1%)	43.3 (19.2%)
Leasehold improvement (non-office)	153 (1.6%)	61.6 (9.7%)	34.7 (15.4%)
Computer software and training package	1,354 (14.5%)	43.5 (6.9%)	6.4 (2.8%)
Information technology equipment	3,108 (33.2%)	32.6 (5.1%)	6.2 (2.7%)
Leasehold improvement (office)	87 (0.9%)	24.8 (3.9%)	13.2 (5.9%)
Office equipment	756 (8.1%)	9.2 (1.4%)	3.5 (1.5%)
Audio visual aids and equipment	385 (4.1%)	4.8 (0.7%)	1.5 (0.7%)
Motor vehicle	5 (0.1%)	3.0 (0.5%)	1.9 (0.8%)
Office furniture	477 (5.1%)	3.0 (0.5%)	0.8 (0.4%)
Others (Note)	557 (6.0%)	0.0 (0.0%)	0.0 (0.0%)
Total	9,353 (100.0%)	634.8 (100.0%)	225.5 (100.0%)

Source: Audit analysis of HKPC records

Note: Other fixed assets were assets purchased under the budget for equipment of projects. The cost of these assets was charged to the project expenditure. When these assets were transferred to HKPC, they were recorded at nil value. These assets were also subject to stocktaking procedures.

Procurement and other administrative issues

4.16 HKPC adopts a continuous stocktaking approach. One or more divisions will be selected for stocktaking every month. Each division should be selected at least once for stocktaking every two years. According to HKPC, the stocktaking procedures are as follows:

- (a) about two to three weeks before the scheduled stocktaking of a selected division, the officer of the Finance and Procurement Division sends the fixed asset register to the Fixed Asset Manager of the division, who then passes the register to the owners for preliminary checking of the existence of the fixed asset items under their custody;
- (b) the asset owner informs the Finance and Procurement Division to update the fixed asset records in the system (e.g. records on location and owner of assets);
- (c) after updating, the officer of the Finance and Procurement Division verifies the items against the register in the presence of the owner and the Fixed Asset Manager of the division. The officer will check the physical existence and condition of the fixed assets during the stocktaking;
- (d) when first acquired, each fixed asset is centrally assigned an asset code (in the form of a barcode) and affixed an identification label by the Finance and Procurement Division. During stocktake, the officer will check if there are any items of fixed assets without barcode. In such cases, the item should be recorded and verified subsequently for its owner;
- (e) any missing or damaged items will be arranged for write-off, repair or disposal. The procedures for write-off and disposal are governed by HKPC Standard Practices. If any item is found missing, the case is required to be reported to the General Manager of the division, who shall conduct investigation and decide on the actions to be taken, and seek approval from appropriate approval authorities to write off the assets. For disposal of fixed assets, the responsible staff is required to seek approval from the appropriate approval authorities; and
- (f) the Finance and Procurement Division will report the stocktaking results to the management after each stocktake and make impairment if necessary.

4.17 In August 2017, the ICAC completed an Assignment Report on management of assets of HKPC. According to the Report:

- (a) while it was understood that there might be an operational need for HKPC to pre-schedule the stocktaking exercises (e.g. to ascertain the availability of the owner), such pre-arrangement did not facilitate detection of irregularities. For example, an unscrupulous officer could pilfer an item for personal use and return it to office only right before the stocktaking was conducted; and
- (b) coupled with the fact that the checks were manually conducted by a single officer of the Finance and Procurement Division which was susceptible to human error inadvertently or intentionally, the effectiveness of the stocktaking exercises might be undermined.

4.18 ICAC recommended that HKPC should:

- (a) conduct surprise checks on high risk assets (e.g. those easily movable or with high value) to detect and deter malpractices; and
- (b) use barcode scanners to assist in conducting physical counts to minimise human error or manipulation.

4.19 In response to ICAC's recommendations, in November 2017, HKPC informed the Audit Committee that:

- (a) starting from December 2017, it would conduct quarterly sampling surprise stocktaking on movable and high value fixed assets susceptible to high risk to loss; and
- (b) by June 2018, it would procure and install barcode scanner system and use the system to assist fixed asset physical count.

In January 2019, HKPC informed ICAC that since March 2018, the Finance and Procurement Division had started to use a barcode scanner system for fixed asset counting.

4.20 In November 2017, the Finance and Procurement Division started to conduct quarterly surprise stocktaking. Up to 30 June 2019, seven surprise stocktaking exercises had been conducted in seven divisions. In each exercise, 5 items susceptible to loss were selected for stocktaking, totalling 35 items selected for the seven exercises. Audit examined the stocktaking reports of the seven surprise stocktaking exercises and found that:

- (a) the number of fixed asset items selected for surprise stocktaking in each exercise was very small (i.e. 5 items) comparing to the total number of movable and high value fixed asset items (i.e. around 1,030 items of notebook computers/notepad, digital camera, camera lens, etc); and
- (b) there were many types of movable and high value fixed assets which were susceptible to high risk to loss, e.g. notepad, digital camera, video recorder, camera lens, etc. However, 33 (94%) of the 35 items selected for surprise stocktaking were notebook computers. The remaining two items selected were an IP phone and a mobile phone.

4.21 To follow up on the ICAC recommendations, HKPC agreed to procure and install barcode scanner system and use the system to assist fixed asset physical count by June 2018. However, up to 31 August 2019, the barcode scanner system had not been in use. According to HKPC, it planned to implement the barcode scanner system to assist the physical count of fixed assets after all the existing fixed assets (excluding leasehold improvements) were affixed with the QR barcode labels. As at 28 August 2019, 3,650 (40%) of the 9,048 fixed asset items (excluding leasehold improvements) still had not been affixed with QR barcode labels for implementing the barcode scanner system. In response to Audit's enquiry, HKPC informed Audit in September 2019 that these 3,650 fixed asset items would be affixed with the QR barcode labels by May 2020.

4.22 Audit considers that HKPC needs to expand the scope of surprise stocktaking for the quarterly surprise stocktaking exercise by increasing the number and types of fixed asset items selected. HKPC also needs to expedite the implementation of barcode scanner system to assist in conducting stocktaking exercises.

Need to improve equipment management

4.23 According to HKPC Standard Practices on equipment management:

- (a) any obsolete and/or non-effective equipment, machinery or facility will be disposed of in a timely manner in order to ensure effective utilisation of HKPC's resources;
- (b) equipment refers to any standalone or an integrated set of equipment, machinery or facility installed at HKPC for the purpose of technology development, demonstration or service support to the industry, and with an original purchase value equal to or above \$100,000;
- (c) all equipment is classified into four types as follows:
 - (i) latest equipment;
 - (ii) key equipment;
 - (iii) supporting equipment; and
 - (iv) common equipment; and
- (d) the divisions concerned shall maintain a list of equipment with full justification of the classification. The list shall be reviewed and approved by the respective Branch Directors. The divisions concerned shall prepare a maintenance record containing the type, method and frequency of maintenance and a log sheet/log book recording the actual utilisation for each equipment under the list.

As at 31 March 2019, the total number of equipment items kept by HKPC was 320.

4.24 Audit examined the equipment management records for 2018-19 and found room for improvement as follows:

- (a) ***An item of equipment not included in the list of equipment.*** An item of equipment (i.e. Cold Room) received on 26 March 2019 with an original purchase value of \$252,000 (i.e. above \$100,000) was not included in the list of equipment as at 31 March 2019. In response to Audit enquiry, HKPC informed Audit in October 2019 that there was a slight delay in updating the equipment list. The item was subsequently included in the equipment list as at 30 June 2019 and presented for management review in July 2019;
- (b) ***Expected utilisation not achieved.*** In 2018-19, 52 (16%) of the 320 items of equipment did not achieve the expected utilisation (see Table 15); and

Table 15

**Analysis of equipment not achieving expected utilisation
(2018-19)**

Type of equipment	Expected utilisation	Total no. of items (a)	Items not achieving expected utilisation		
			No. (b)	Percentage (c) = $(b) \div (a) \times 100\%$	Actual utilisation
Latest equipment	Utilisation rate $\geq$ 5% or frequency of usage $\geq$ 5 times per month	93	18	19%	0% to 4% (Average: 1%)
Key equipment	Utilisation rate $\geq$ 5% or frequency of usage $\geq$ 5 times per month	168	15	9%	0% to 4% (Average: 1%) or 1 time per month (Note)
Supporting equipment	Utilisation rate $\geq$ 15% or frequency of usage $\geq$ 10 times per month	46	11	24%	0% to 10% (Average: 4%)
Common equipment	Utilisation rate $\geq$ 30% or frequency of usage $\geq$ 20 times per month	13	8	62%	6% to 27% (Average: 15%)
Overall		320	52	16%	0% to 27% (Average: 4%) or 1 time per month (Note)

Source: Audit analysis of HKPC records

Note: Of the 52 items not achieving expected utilisation, the expected utilisation of one item of key equipment was five times or more per month. However, its actual utilisation was only one time per month.

- (c) ***Two divisions not achieving target rate of asset optimisation.*** The rate of asset optimisation is used as a KPI to measure equipment utilisation. The rate of asset optimisation is the percentage of equipment items which achieved the expected utilisation. A target rate of asset optimisation is set for divisions with equipment. In 2018-19, Audit found that of the four divisions with equipment under their custody, two divisions (i.e. Automotive and Electronics Division and Environmental Management Division) did not achieve the target rate of asset optimisation.

4.25 Audit considers that HKPC needs to ensure that all equipment items are included in the list of equipment. HKPC also needs to take measures to improve the utilisation rates of the equipment items which do not achieve the expected utilisation and dispose of the obsolete and non-effective equipment in a timely manner to ensure effective utilisation of HKPC's resources. Furthermore, HKPC needs to closely monitor the rate of asset optimisation of individual divisions and take appropriate follow-up actions for the divisions which have not achieved the target rate of asset optimisation.

Need to monitor utilisation of company cars

4.26 As at 31 March 2019, HKPC had four company cars (see Table 16). Three company cars (i.e. Car A, Car B and Car C) were used with car pool driver service (i.e. with drivers) while one company car (i.e. Car D) was available for car on-loan service (i.e. without driver). In 2018-19, the operating costs of the four company cars including the staff cost of the three drivers were about \$1.2 million.

Table 16

**Details of four company cars
(31 March 2019)**

	Car A	Car B	Car C	Car D
Mode of service	Car pool driver service (i.e. with drivers)			Car on-loan service (i.e. without driver)
Seating capacity (excluding driver)	6	6	6	4
Year of acquisition	2014	2017	2018	2016
Acquisition cost	\$708,747	\$650,000	\$776,864	\$414,145

Source: HKPC records

4.27 According to HKPC Standard Practices, at the end of each journey, the requisitioning staff member who requests the company car with car pool driver service should sign on a car usage form to certify the details such as the destination, purpose, time and duration of the journey, etc. recorded thereon are correct.

4.28 HKPC Standard Practices specify that staff members may request use of the company car with car on-loan service for official purpose on a self-drive basis. The borrower should submit the completed “car on-loan application form” which states the details of service required such as the purpose, destination and duration of booking to the Human Resources and Facility Management Division. The borrower is responsible to complete all the related car usage reports after every trip.

Procurement and other administrative issues

4.29 HKPC does not calculate the utilisation rate of its company cars. Audit examination of the usage records of the four company cars in the period from January to March 2019 revealed that the utilisation of the company car without driver (i.e. Car D) was low. On 36 (60%) of the 60 working days from January to March 2019, Car D was idle for the whole day (see Table 17).

Table 17

**Utilisation of company cars
(January to March 2019)**

Company car	Number of working days		
	Not utilised (a)	Utilised (b)	Total (c) = (a) + (b)
A	7 (12%)	53 (88%)	60 (100%)
B	2 (3%)	58 (97%)	60 (100%)
C	3 (5%)	57 (95%)	60 (100%)
D	36 (60%)	24 (40%)	60 (100%)
Overall	48 (20%)	192 (80%)	240 (100%)

Source: Audit analysis of HKPC records

4.30 According to HKPC Standard Practices, the borrower of Car D is required to complete all the related car usage reports after every trip for monitoring purposes. Audit noted that there were no car usage reports of Car D other than the car log book (recording the date and time of the trip, name of borrower, and mileage before and after the trip) and the car key collection record (recording the date and time of collecting and returning the key, name of borrower, and mileage before and after the trip). Audit compared the records of the car log book with those of the car key collection record in the period from January to March 2019 and found that there were no records in the car log book for 11 (44%) of 25 trips recorded in the key collection record. The total usage hours of Car D could not be ascertained due to the incomplete records in the car log book.

4.31 Audit considers that HKPC needs to closely monitor the utilisation rate of its company cars and review the cost-effectiveness of maintaining the company car with low utilisation rate. HKPC also needs to ensure that the time and duration of all trips of the company cars are recorded in the car log book.

Room for improvement on claims of entertainment expenses

4.32 According to HKPC Standard Practices, staff members should exercise prudent judgement and economy when entertaining guests for official purposes in order to avoid any public perception of extravagance. When incurring entertainment expenses, staff members are required to follow the rules as follows:

- (a) official entertainment should only be carried out on a need basis;
- (b) when deciding the format, place and scale of entertainment, the objective of the event, status of the principal guest(s) and the standard of entertainment appropriate to the occasion should be taken into account. As a rule of thumb, lavish official meals must be avoided; and
- (c) the budget position must be taken into account each time the official entertainment expenditure is to be incurred.

In 2018-19, the entertainment expenses incurred by HKPC amounted to \$604,925.

4.33 HKPC Standard Practices also stipulate the expenditure limits for official meals. The limits ranged from \$150 to \$700 per head (see Table 18).

Table 18**Limits on entertainment expenses for official meals**

Grade	Type	Expenditure limit per head (\$)
ED and Grade 8	Breakfast	250
	Lunch	550
	Dinner	700
Others	Breakfast	150
	Lunch	400
	Dinner	500

Source: HKPC records

4.34 According to HKPC Standard Practices, the number of staff members involved in an official entertainment should not exceed the number of guests to be entertained. Otherwise, approval from the appropriate authorities is required. Audit examination of the records of 95 claims of entertainment expenses in the period from January to March 2019 revealed that for 15 claims (ranging from \$375 to \$4,356, \$1,272 on average), approvals were obtained on the claims where the number of staff members involved exceeded the number of guests. However, there was no documentary evidence showing the justifications for such approvals in 11 of the 15 claims.

4.35 Audit considers that HKPC needs to ensure that all claims of entertainment expenses where the number of staff members involved exceeds the number of guests are well justified.

Guidelines on official travels outside Hong Kong not complied with

4.36 Expenses on official travels outside Hong Kong for the period from 2016-17 to 2018-19 ranged from \$4.4 million to \$9.6 million (see Table 19).

Table 19
Expenses on official travels outside Hong Kong
(2016-17 to 2018-19)

Type of expenses	2016-17 (\$ million)	2017-18 (\$ million)	2018-19 (\$ million)
Air ticket	2.0	2.9	1.5
Per Diem Allowance (Note 1)	0.3	0.6	0.6
Other related expenses (Note 2)	7.3	5.0	2.3
Total	9.6	8.5	4.4

Source: HKPC records

Note 1: Per Diem Allowance was granted on a daily basis based on the number of nights spent for the trip. Caps on the official expenses per day were set for covering the cost of meals. Different caps per day would apply to different regions.

Note 2: Other related expenses would be reimbursed provided that they are incurred for official purposes and directly as a result of an official travel, such as hotel accommodation, transportation fees and long distance duty telephone calls.

4.37 **Prior approvals not sought for official travels outside Hong Kong.** According to HKPC Standard Practices on official travels outside Hong Kong, all official travels outside Hong Kong by staff members must be approved by their General Managers/Directors/ED where appropriate through the submission of travel application before departure. Any travel application made after departure would normally not be entertained unless it is specially approved by their General Managers/Directors/ED. For ED, approval from the Council Chairman is required.

4.38 Audit examined 73 applications for official travels outside Hong Kong submitted in the period from November 2018 to March 2019 and found that 9 (12%) of the 73 applications were approved after departure. Such approvals were obtained 1 to 15 days after departure (averaging 6 days). In particular, 2 (22%) of these 9 applications were submitted by staff members after departure. Audit considers that HKPC needs to ensure that applications for official travels outside Hong Kong are

submitted by staff members and approved by the appropriate approval authorities before departure.

4.39 ***Flight awards not declared.*** According to HKPC Standard Practices, if a staff member claims flight awards and the awards are credited to his mileage account, the staff member should declare the awards to the Finance and Procurement Division after the business trip to facilitate planning for the possible use of the awards for corporate functions. The Finance and Procurement Division regularly sends reminders to all staff to report flight awards claimed after business travel and maintains records for flight award mileage showing the mileage claimed and reported by the staff.

4.40 Audit examined 20 claims for business travels by air submitted by 13 staff in the period from January to March 2019 and the records for flight award mileage kept by the Finance and Procurement Division. Audit found that for 12 (60%) claims involving 10 (77%) staff, the staff concerned had not declared the flight awards to the Finance and Procurement Division after their business trips. There was no information indicating whether these 10 staff had claimed the mileage from the airlines.

4.41 Audit considers that HKPC needs to ensure that all staff members declare their flight awards arising from business trips to facilitate planning for the possible use of the flight awards for corporate functions.

Audit recommendations

4.42 **Audit has *recommended* that ED, HKPC should:**

- (a) **expand the scope of surprise stocktaking for the quarterly surprise stocktaking exercise by increasing the number and types of fixed asset items selected;**
- (b) **expedite the implementation of barcode scanner system to assist in conducting stocktaking exercises;**
- (c) **ensure that all equipment items are included in the list of equipment;**

- (d) take measures to improve the utilisation rates of the equipment items which do not achieve the expected utilisation and dispose of the obsolete and non-effective equipment in a timely manner to ensure effective utilisation of HKPC's resources;
- (e) closely monitor the rate of asset optimisation of individual divisions and take appropriate follow-up actions for the divisions which have not achieved the target rate of asset optimisation;
- (f) closely monitor the utilisation rate of the company cars and review the cost-effectiveness of maintaining the company car with low utilisation rate;
- (g) ensure that the time and duration of all trips of the company cars are recorded in the car log book;
- (h) ensure that all claims of entertainment expenses where the number of staff members involved exceeds the number of guests are well justified;
- (i) ensure that applications for official travels outside Hong Kong are submitted by staff members and approved by the appropriate approval authorities before departure; and
- (j) ensure that all staff members declare their flight awards arising from business trips to facilitate planning for the possible use of the flight awards for corporate functions.

Response from HKPC

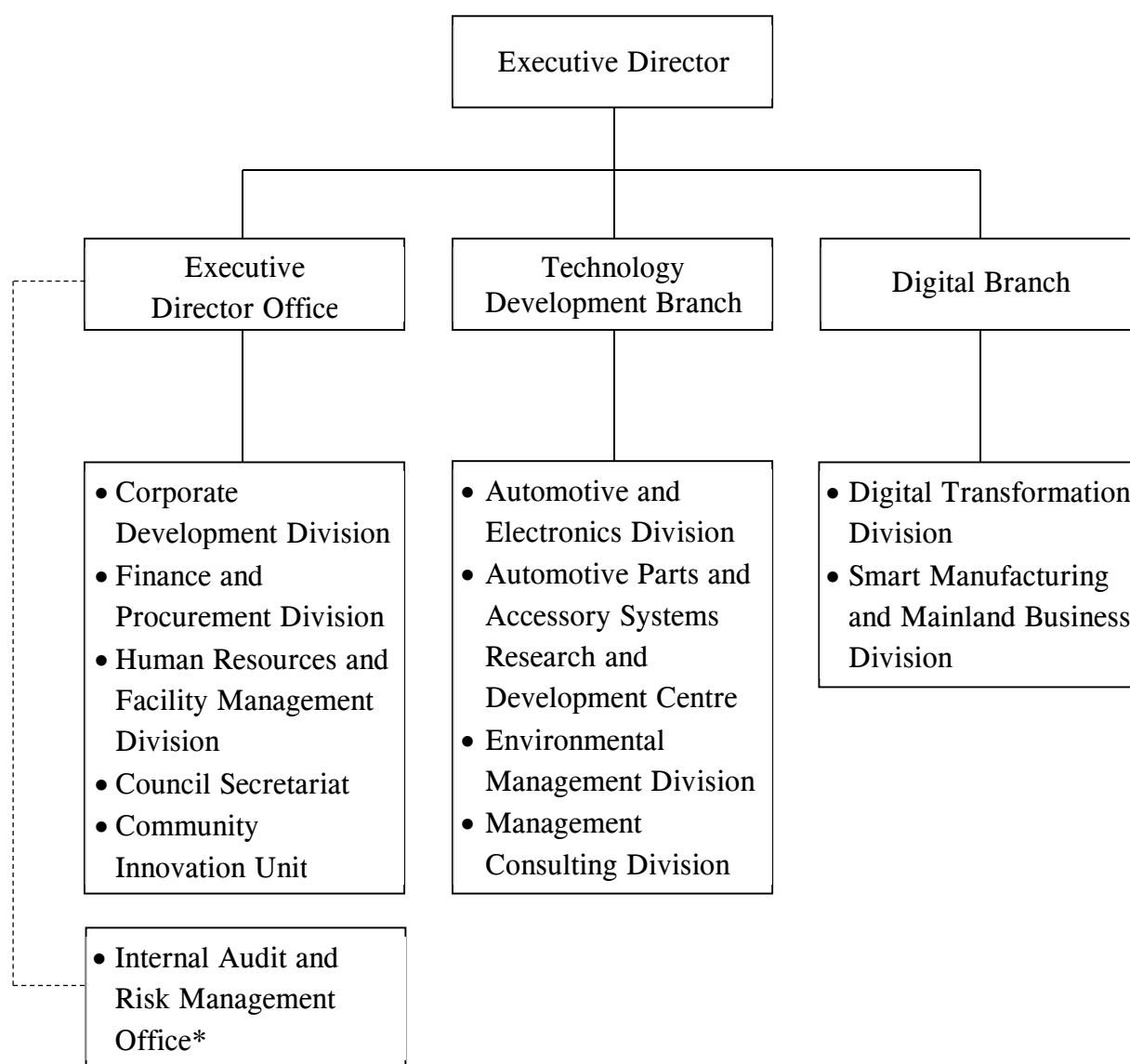
4.43 ED, HKPC agrees with the audit recommendations. He has said that:

- (a) HKPC will expand the number of fixed assets items selected from 5 to 20 items and include a wider range of fixed assets for the quarterly surprise stocktaking;
- (b) HKPC will complete affixing of new barcode labels on all fixed assets by May 2020;

Procurement and other administrative issues

- (c) HKPC will remind all staff to include all equipment items into the equipment list for management review in a timely manner;
- (d) HKPC will closely monitor utilisation of the equipment and the rate of asset optimisation of individual division through quarterly review meeting, regularly review and dispose of those old or outdated equipment with low utilisation, and enhance promotion of available equipment to relevant institutions and companies;
- (e) HKPC will review the utilisation of company cars on a regular basis, and make available to operational divisions the information regarding the availability of the car for loan for business purpose;
- (f) a car-on-loan application e-form has been in use to record the usage of the Car D and details such as time, duration and purpose of usage has to be inputted by borrowers. The usage of Car D will continue to be recorded in the car log book which serves as the car usage report. HKPC will conduct monthly checking on the car-on-loan application e-form against car log book record to ensure that information of car usage, e.g. date and time, name of borrower, and mileage before and after the trip etc., is recorded in the car log book by borrower;
- (g) HKPC will update HKPC Standard Practices and remind staff that justifications should be provided when seeking approval for entertainment with the number of staff members exceeding the number of guests;
- (h) HKPC will remind staff on a regular basis to comply with the requirements under HKPC Standard Practices to obtain and give prior approval for official travels outside Hong Kong; and
- (i) currently HKPC requires staff to declare flight awards only when they have claimed and credited the awards to their mileage account. HKPC will enhance the computer system to require staff members to declare whether any mileage has been claimed from airlines after undertaking all business trips by air travel.

HKPC: Organisation chart (extract)
(31 March 2019)



* Functionally reported to the Audit Committee of HKPC

Source: HKPC records

Acronyms and abbreviations

APAS	Automotive Parts and Accessory Systems Research and Development Centre
Audit	Audit Commission
B/D	Government bureau/department
CE	Chief Executive
CIT	Commissioner for Innovation and Technology
COR	Controlling Officer's Report
ED	Executive Director
HKPC	Hong Kong Productivity Council
ICAC	Independent Commission Against Corruption
ITC	Innovation and Technology Commission
ITF	Innovation and Technology Fund
KPI	Key performance indicator
MAA	Memorandum of Administrative Arrangements
PRD	Pearl River Delta

CHAPTER 4

**Environment Bureau
Food and Health Bureau
Agriculture, Fisheries and
Conservation Department**

Control of wild and stray animal nuisances

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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CONTROL OF WILD AND STRAY ANIMAL NUISANCES

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.13
Audit review	1.14
General response from the Government	1.15
Acknowledgement	1.16
PART 2: CONTROL OF WILD ANIMAL NUISANCES	2.1
Addressing complaints about wild animal nuisances	2.2 – 2.18
Audit recommendations	2.19
Response from the Government	2.20
Population control programmes for wild animals	2.21 – 2.44
Audit recommendations	2.45
Response from the Government	2.46
Administering Feeding Ban Area	2.47 – 2.51
Audit recommendation	2.52
Response from the Government	2.53

	Paragraph
PART 3: CONTROL OF STRAY ANIMAL NUISANCES	3.1
Addressing complaints about stray animal nuisances	3.2 – 3.6
Audit recommendation	3.7
Response from the Government	3.8
Handling of stray animals	3.9 – 3.18
Audit recommendations	3.19
Response from the Government	3.20
Population control programmes for stray animals	3.21 – 3.34
Audit recommendations	3.35
Response from the Government	3.36
Other measures for controlling stray animal nuisances	3.37 – 3.40
Audit recommendations	3.41
Response from the Government	3.42
 PART 4: PUBLICITY, PROSECUTION AND OTHER ADMINISTRATIVE ISSUES	 4.1
Publicity and educational programmes	4.2 – 4.16
Audit recommendations	4.17
Response from the Government	4.18
Prosecutions of related offences	4.19 – 4.21
Audit recommendations	4.22
Response from the Government	4.23

Paragraph

Other administrative issues	4.24 – 4.31
Audit recommendations	4.32
Response from the Government	4.33

Appendices

Page

A : Agriculture, Fisheries and Conservation Department: Organisation chart (extract) (31 March 2019)	75
B : Acronyms and abbreviations	76

CONTROL OF WILD AND STRAY ANIMAL NUISANCES

Executive Summary

1. Wild animals may occasionally leave their natural habitats and enter urban areas. Domestic animals which have been abandoned or gone astray may also stray on the streets. The presence of wild animals and straying domestic animals in urban areas can cause nuisances (e.g. noise, hygiene and safety issues). It is the Government's aim to contain such nuisances.

2. The Agriculture, Fisheries and Conservation Department (AFCD) is responsible for the control of wild and stray animal nuisances. From time to time, AFCD received complaints about animal nuisances. Most of these complaints involved nuisances relating to noise, hygiene and safety issues. Other complaints involved, for example, sighting of wild animals, wild bird nests found and requesting AFCD to catch stray animals. In 2018-19, AFCD received 2,012 nuisance complaints about wild animals and 6,024 nuisance complaints about stray animals. In the year, the expenditure incurred in the control of wild and stray animals (including the control of wild and stray animal nuisances) was \$61.9 million. The Audit Commission (Audit) has recently conducted a review of the control of wild and stray animal nuisances by AFCD.

Control of wild animal nuisances

3. *Addressing complaints about wild animal nuisances.* In the past five years from 2014-15 to 2018-19, the number of complaints lodged with AFCD about wild animal nuisances increased by 75%, from 1,147 complaints in 2014-15 to 2,012 complaints in 2018-19. The vast majority (95%) of the complaints were related to wild pigs (43%), monkeys (29%) and wild birds (23%) (para. 2.2). Audit noted the following issues:

- (a) *Need to ensure that on-site visits are conducted where necessary.* According to AFCD guidelines, where complainants are requesting assistance (e.g. rescue of injured animals), and/or animals are causing

Executive Summary

nuisances (e.g. monkeys grabbing people's belongings), AFCD staff need to either visit the sites to handle the cases or take actions on the cases. Audit noted that, of the 2,012 nuisance complaints about wild animals received in 2018-19, AFCD staff would need to conduct on-site visits in 1,553 cases. However, in a large proportion (65% or 1,005 cases) of the cases, AFCD staff did not conduct any on-site visits. In Audit's view, on-site visits facilitate the effective handling of complaint cases. Documenting the reasons for not conducting any on-site visits, while not presently required under AFCD guidelines, would help enhance accountability (paras. 2.4, 2.6 and 2.9);

- (b) ***Need to improve timeliness in responding to complaints.*** According to AFCD guidelines, upon receiving a complaint about wild animal nuisances, AFCD needs to give an interim reply to the complainant within 10 calendar days, and a substantive reply within 30 calendar days. Audit analysed 1,917 complaints and noted that in 49 (3%) cases, the interim reply was delayed (ranging from 1 to 47 days, averaging 9 days), and in 398 (21%) cases, the substantive reply was delayed (ranging from 1 to 63 days, averaging 8 days) (paras. 2.10 and 2.12); and
 - (c) ***Need to follow guidelines on sterilisation of nuisance monkeys.*** In handling monkey nuisance complaints, according to AFCD guidelines, nuisance monkeys captured would be sterilised before releasing back to the wild. Audit noted that, of the 360 nuisance monkeys captured in the period 2014-15 to 2018-19, 29 (8%) had not been sterilised before releasing, contrary to AFCD guidelines. Records did not indicate the reasons for not sterilising them (paras. 2.14 and 2.15).
4. ***Population control programmes for wild animals.*** AFCD has implemented population control programmes for monkeys and wild pigs (para. 2.21). Audit noted the following issues:

- (a) ***Need to review sterilisation targets for monkey contraceptive programme.*** Since 2007, contractors have been engaged to capture monkeys on trapping sites and sterilise them in the field. AFCD specified in the service contract the minimum number of monkeys to be sterilised every year. In 2014 to 2019, the actual number of monkeys sterilised under the contracts exceeded the specified minimum number by 15% to 63% every year. AFCD informed Audit that the number of monkeys to be sterilised was not used to

Executive Summary

evaluate the contractor's performance. In Audit's view, there might be a risk that the number of monkeys sterilised might substantially exceed the specified minimum, thus overly reducing the monkey population, which might be contrary to AFCD's intent (paras. 2.21 to 2.25);

- (b) ***Need to address difficulties in locating and capturing monkeys.*** From 2014 to 2019, the number of monkeys trapped by the contractor (see (a) above) decreased by 59% from 499 (for the contract period 2014 to 2015) to 205 (for the contract period 2018 to 2019). Of the 32 troops of monkeys identified, for 17 troops, no monkey had been trapped since January 2014. In August 2019, the contractor remarked that monkeys were highly familiarised with the trap cages, and that trapping monkeys would become more difficult in the future (paras. 2.28 and 2.29);
- (c) ***Need for the “wild pig capture and contraception/relocation programme” (CCRP) to cover more nuisance blackspots.*** Since 2017, under CCRP, a contractor has been engaged to capture nuisance-causing wild pigs on selected sites and sterilise them in the field. AFCD records indicated that there were 77 wild pig nuisance blackspots as at 31 May 2019. However, only 19 (25%) blackspots had been covered by past CCRP operations. While AFCD had planned to cover another 22 (28%) blackspots in future CCRP operations, AFCD had not yet planned to conduct CCRP operations in the remaining 36 (47%) blackspots (paras. 2.21 and 2.34);
- (d) ***Need to expedite evaluation of the contraceptive vaccine used.*** Under CCRP, a multi-year immune-contraceptive vaccine has been used as one of the means to sterilise female wild pigs. To evaluate the effectiveness of the vaccine, AFCD has required the contractor (see (c) above) to recapture wild pigs that were administered with the vaccine during past CCRP operations. Pregnancy tests will be conducted on the recaptured wild pigs. However, as at 31 May 2019, of the 64 wild pigs administered with the vaccine and released back to the wild, only 6 (9%) wild pigs had been recaptured for pregnancy tests. Moreover, while the study on the vaccine had been scheduled for completion in October 2019, due to the limited number of wild pigs recaptured, the contractor had not yet obtained enough samples as at 31 July 2019 to evaluate the effectiveness of the vaccine (paras. 2.37 to 2.39); and
- (e) ***Need to expedite conducting population surveys of wild pigs.*** While a population control programme (i.e. CCRP) has been implemented for wild

Executive Summary

pigs, AFCD has not regularly conducted population surveys of wild pigs. Upon enquiry, in June and September 2019, AFCD informed Audit that a pilot study for wild pig population had been commenced in April 2019 and the first batch of data had been collected for studying the effectiveness of the techniques used in the population survey. In September 2019, AFCD was still figuring out the techniques on precise estimation of the total wild pig population (paras. 2.42 to 2.44).

5. ***Need to take into account wild pig nuisances in imposing feeding bans.*** AFCD has specified Feeding Ban Area under the Wild Animals Protection Ordinance (Cap. 170), at which the feeding of any wild animal is prohibited. Audit noted that, as at 31 May 2019, there were 61 nuisance blackspots caused by feeding (i.e. 5 blackspots for monkeys and 56 blackspots for wild pigs). While all the nuisance blackspots for monkeys were located within Feeding Ban Area, none of the 56 nuisance blackspots for wild pigs was covered by Feeding Ban Area (paras. 1.8 and 2.49).

Control of stray animal nuisances

6. ***Need to improve complaint records.*** According to its guidelines, upon receiving a complaint about stray animal nuisances, AFCD needs to give an interim reply to the complainant within 10 calendar days, and a substantive reply within 30 calendar days. Since January 2018, using a computer system, AFCD has recorded the details of individual complaints (e.g. the date of receipt of a complaint and the follow-up actions taken). However, the date of interim reply and the date of substantive reply to the complainant have not been recorded in the computer system. In Audit's view, there is a lack of management information for monitoring the timeliness of replies to complainants (paras. 3.3, 3.4 and 3.6).

7. ***Handling of stray animals.*** The vast majority (91%) of stray animal nuisance complaints lodged in the period 2014-15 to 2018-19 were related to dogs (63%) and cats (28%). AFCD operates four Animal Management Centres (AMCs) which are responsible for catching and handling stray dogs and cats as well as animals from other sources. Stray dogs and cats received at AMCs which are left unclaimed, but assessed to be in good health and having a gentle temperament would be transferred to animal welfare organisations (AWOs — i.e. rehoming partners) for adoption by the public (paras. 3.9 to 3.11). Audit noted the following issues:

Executive Summary

- (a) ***Need to improve guidelines on handling stray dogs and cats.*** According to AFCD guidelines, stray dogs and cats not reclaimed after 4 days and failing either health or temperament assessment would be euthanised. According to AFCD, the 4-day period was the minimum time for which a dog/cat had to be kept before euthanasia, and that AFCD would conduct re-assessments for the dog/cat to determine whether it became more suitable for rehoming over time. However, AFCD guidelines did not adequately cover the matter (e.g. for how long a dog/cat should be observed). Some dogs/cats had been observed for a short period (e.g. 4 days) and some others for a much longer period (e.g. 93 days) before euthanasia (paras. 3.12, 3.14 and 3.15); and
 - (b) ***Need to enhance monitoring of rehoming partners.*** AWOs interested in becoming AFCD's rehoming partners need to submit applications to AFCD. As at 11 July 2019, AFCD had 16 rehoming partners (i.e. 16 AWOs) (para. 3.17). Audit noted the following issues:
 - (i) ***Rehoming partners not frequently visited.*** AFCD visited AWOs when assessing their applications for rehoming partnership. Thereafter, AFCD would only visit them where necessary (e.g. AWO changing its management). Of the 16 AWOs, 7 had become rehoming partners for more than 10 years. There was a risk that some rehoming partners had not been visited for a considerable period of time (para. 3.17(a)); and
 - (ii) ***Rehoming records not submitted.*** In 2018-19, 10 AWOs collected dogs and cats from AFCD for rehoming. Audit noted that only 2 (20%) of them had submitted "rehoming records" (showing relevant information about the dogs and cats such as adoption status) as required (para. 3.17(b)).
8. ***Population control programmes for stray animals.*** AFCD has implemented population control programmes for stray animals, and has assisted AWOs to implement a programme for neutering stray dogs (para. 3.21). Audit noted the following issues:
- (a) ***Need to ensure that sterilisation requirement of rehomed dogs and cats is followed.*** According to the undertakings signed by rehoming partners, rehomed animals (i.e. dogs and cats transferred to AWOs for adoption by

Executive Summary

the public) shall be “neutered” (i.e. sterilised) by a registered veterinary surgeon. Rehoming partners, as well as people adopting dogs and cats from the rehoming partners, could take the rehomed dogs and cats to the veterinary clinics engaged by AFCD for free sterilisation (paras. 3.11 and 3.22). Audit found that:

- (i) in 2018-19, only 27% of rehomed dogs and 49% of rehomed cats were sterilised at AFCD-engaged veterinary clinics (para. 3.23); and
 - (ii) for the rehomed dogs and cats which had not been sterilised at AFCD-engaged clinics, it was unclear as to whether they were sterilised elsewhere (e.g. at the adopters’ own expenses). There was a risk that some rehomed dogs and cats might not be sterilised, contrary to the requirement set out in the undertakings (para. 3.24);
- (b) ***Need to keep in view implementation of Trap-Neuter-Return (TNR) trial programme.*** Under the TNR trial programme, two AWOs recruited carers to feed and catch stray dogs within specific sites. Captured dogs were neutered at AWOs’ designated veterinary clinic where suitable. Captured dogs not suitable for rehoming were returned to the specific sites. In May 2018, the Legislative Council was informed that the TNR concept might not be effective in reducing the stray dog population and nuisances within a short period. As at 31 July 2019, the two AWOs were still running the TNR trial programme. This warrants AFCD’s attention because the TNR concept is different from AFCD’s established practice for handling stray dogs (i.e. catch and removal approach), and the effectiveness of the TNR trial programme is still unknown (paras. 3.26, 3.28 and 3.29); and
- (c) ***Need to ensure timely implementation of management plan for cattle.*** From time to time, AFCD received nuisance complaints about stray cattle and buffalo (hereinafter collectively referred to as stray cattle). In 2011, AFCD set up the Cattle Management Team with the aim of conducting long-term management of stray cattle. In August 2019, AFCD devised a stray cattle management plan, setting out short to long-term goals relating to the control of cattle populations. According to AFCD, it would brief relevant AWOs and stakeholders before implementing the stray cattle management plan. Audit noted that as at mid-September 2019, AFCD had not yet started briefing relevant AWOs and stakeholders (paras. 3.21, 3.31 to 3.33).

Executive Summary

9. ***Need to devise effective measures to control pigeon population in a timely manner.*** For pigeons, the number of nuisance complaints lodged with AFCD increased by 65 % from 328 in 2014-15 to 540 in 2018-19. In September 2018, AFCD set up the Feral Pigeon Population Control Unit to tackle problems relating to pigeons. In February 2019, AFCD engaged a contractor to conduct a territory-wide pigeon population survey. The objective of the survey was to investigate the possible reasons for pigeon congregation with a view to devising a plan to control pigeon population. In April 2019, the survey commenced. It was scheduled for completion in March 2020 (paras. 3.39 and 3.40).

Publicity, prosecution and other administrative issues

10. ***Publicity and educational programmes.*** AFCD conducts various publicity and educational programmes to increase public awareness of matters relating to animal control (para. 4.2). Audit noted the following issues:

- (a) ***Need to improve the provision of school talks and public seminars.*** From 2014-15 to 2018-19, for school talks, the number of participants, having reached its peak of 21,288 participants in 2015-16, decreased by 8,515 (40%) to 12,773 participants in 2018-19. For public seminars, the average number of participants in each seminar was on the low side. For example, in 2018-19, on average, there were fewer than 10 participants per seminar. The decreasing/limited number of participants is not conducive to publicity of animal control (paras. 4.4 and 4.7); and
- (b) ***Need to ensure display of banners at blackspots and congregation spots.*** It has been AFCD's practice to put up banners at animal nuisance blackspots and pigeon congregation spots, reminding people not to feed the animals there and advising them of the precautions to be taken when encountering wild animals. However, as at 31 May 2019, only 66 (86%) of the 77 wild pig nuisance blackspots and only 71 (43%) of the 166 pigeon congregation spots had banners put up (paras. 4.9 and 4.10).

11. ***Need for timely prosecution action.*** In the course of controlling wild and stray animal nuisances, AFCD may find people violating laws (e.g. relating to abandoning animals). According to the Magistrates Ordinance (Cap. 227), prosecution action should be taken within 6 months from the date of offence (i.e. time-barred after 6 months). Audit examined the 31 prosecution cases which

Executive Summary

AFCD withdrew in 2014-15 to 2018-19 and found that in 2 cases, prosecutions were time-barred and hence AFCD had not instigated any prosecutions (paras. 4.19 and 4.20).

12. *Need to enhance practices on surveillance of African Swine Fever (ASF).* Wild pigs are susceptible to ASF. According to AFCD's surveillance plan on ASF, upon receiving the report of unexplained death of a wild pig (excluding death caused by road-kill) or a sick wild pig, AFCD officers will inspect the wild pig on site and determine if there are suspected signs of ASF infection. Upon enquiry, AFCD informed Audit in May and June 2019 that up to June 2019, no live or dead wild pigs had been tested for ASF by AFCD. In September and October 2019, AFCD informed Audit that a pilot programme for further enhancing the surveillance of ASF in local wild pigs (i.e. in local wild pig carcasses) would run between November 2019 and January 2020. Subject to reviews and modifications, AFCD would roll out a surveillance programme for ASF in local wild pigs later (paras. 4.27 to 4.30).

Audit recommendations

13. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

Control of wild animal nuisances

- (a) **review the adequacy of guidelines on the conduct of on-site visits for complaints about wild animal nuisances (para. 2.19(a));**
- (b) **ensure that the reasons for not conducting any on-site visits suggested under the guidelines are documented (para. 2.19(b));**
- (c) **improve the timeliness in responding to complaints about wild animal nuisances (para. 2.19(c));**
- (d) **take measures to ensure that AFCD guidelines on sterilising nuisance monkeys are followed (para. 2.19(e));**

Executive Summary

- (e) **document the reasons for not sterilising any nuisance monkeys captured in the future (para. 2.19(f));**
- (f) **review the sterilisation targets under the monkey contraceptive programme and reconsider the need for specifying a target range/optimum number of monkeys to be sterilised (para. 2.45(a));**
- (g) **look into any difficulties in locating and capturing monkeys under the contraceptive programme, and keep in view the need for enhancing the monkey trapping strategy (para. 2.45(c));**
- (h) **take measures to ensure that nuisance blackspots for wild pigs are adequately covered by CCRP operations (para. 2.45(e));**
- (i) **ensure that effective and timely measures are taken to secure adequate samples for evaluating the effectiveness of the immune-contraceptive vaccine on wild pigs (para. 2.45(f));**
- (j) **expedite conducting population surveys of wild pigs (para. 2.45(g));**
- (k) **keep in view the need to extend Feeding Ban Area under the Wild Animals Protection Ordinance to cover nuisance blackspots for wild pigs (para. 2.52);**

Control of stray animal nuisances

- (l) **take measures to improve the complaint recording system for stray animal nuisances (para. 3.7);**
- (m) **ensure that adequate guidelines are provided on handling stray dogs and cats (para. 3.19(a));**
- (n) **consider visiting rehoming partners regularly and ensure that they submit rehoming records as required (para. 3.19(c));**
- (o) **look into the reasons for the low percentage of rehomed dogs and cats sterilised at AFCD-engaged veterinary clinics, and take measures to**

Executive Summary

ensure that rehoming partners follow the requirement of sterilising rehomed dogs and cats (para. 3.35(a) and (b));

- (p) keep in view the implementation of the TNR trial programme, and take timely actions to rectify the situation where necessary (para. 3.35(c));
- (q) take prompt actions to brief relevant AWOs and stakeholders on the stray cattle management plan (para. 3.35(d));
- (r) closely monitor the conduct of the territory-wide pigeon population survey (para. 3.41(b));

Publicity, prosecution and other administrative issues

- (s) take appropriate measures to step up AFCD's effort in the provision of school talks and public seminars (para. 4.17(a));
- (t) ensure that banners are displayed at animal nuisance blackspots and animal congregation spots in a timely manner to publicise information about control of animal nuisances (para. 4.17(b));
- (u) ensure that timely actions are taken to instigate prosecutions of offences relating to the control of animal nuisances at the court (para. 4.22(a)); and
- (v) keep under review the implementation of the pilot programme for enhancing surveillance of ASF in local wild pigs, and ensure that the surveillance programme for ASF in local wild pigs is updated with enhancements in a timely manner where appropriate (para. 4.32(c)).

Response from the Government

14. The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 According to the Wild Animals Protection Ordinance (Cap. 170), which is administered by the Agriculture, Fisheries and Conservation Department (AFCD), wild animals refer to any animals, other than those classed at common law as domestic (including those so classed which have gone astray or have been abandoned). According to AFCD, domestic animals refer to animals that have been kept as pets or produce food, which include, for example, cats, cattle, chinchillas, dogs, hamsters, pigeons and rabbits (Note 1).

1.3 Wild animals (e.g. monkeys and wild pigs) may occasionally leave their natural habitats and enter urban areas. Domestic animals (e.g. cats and dogs — Note 2) which have been abandoned or gone astray may also stray on the streets. The presence of wild animals and straying domestic animals in urban areas can cause nuisances (e.g. noise, hygiene and safety issues). It is the Government's aim to contain such nuisances in order that:

- (a) animals and people co-exist in a harmonious way;
- (b) possible nuisances caused by animals are properly dealt with, and public hygiene and safety are safeguarded; and
- (c) outbreaks of animal transmitted diseases are effectively prevented.

Note 1: *Domestic animals which are no longer looked after by people may become feral (i.e. being unowned, unhabituated to living closely with humans and having reverted to a wild state). For simplicity, stray animals referred to in this Audit Report also include feral animals.*

Note 2: *In 2010, the Audit Commission completed a review entitled "Control of pet animals" (Chapter 4 of Director of Audit's Report No. 54 of March 2010).*

Introduction

1.4 AFCD is responsible for the control of wild and stray animal nuisances. Over the years, for various reasons (e.g. misunderstanding that animals would starve if not being fed), people have fed wild and stray animals (see Photograph 1). According to AFCD, while animals can feed on foods from nature (e.g. leaves, fruits, roots and flowers) in their habitats, they can be attracted to urban areas by the easier food sources there. Feeding of wild and stray animals may create problems such as animals:

- (a) becoming dependent on humans for food and losing their foraging instincts;
- (b) losing fear of humans, and becoming more habituated to searching for food in urban areas (see Photograph 2);
- (c) becoming overpopulated, causing unbalanced ecosystems;
- (d) becoming overweight and vulnerable to various health issues; and
- (e) falling ill due to consuming unsuitable foods (e.g. garbage and plastic).

Photograph 1

People feeding monkeys



Source: Photograph taken by Audit Commission in May 2019

Photograph 2

A wild pig searching for food



Source: AFCD records

Animals which cause nuisances

1.5 From time to time, AFCD received complaints about animal nuisances. According to AFCD records, most of these complaints were on wild pigs, wild birds, monkeys, dogs, cats and pigeons (Note 3). Table 1 shows the number of complaints received from 2014-15 to 2018-19.

Note 3: *Stray pigeons referred to in this Audit Report include feral pigeons (see also Note 1 to para. 1.2).*

Table 1

**Complaints about wild and stray animal nuisances received by AFCD
(2014-15 to 2018-19)**

Animal	No. of complaints				
	2014-15	2015-16	2016-17	2017-18	2018-19
Wild animals					
Wild pigs	396	510	643	787	1,008
Wild birds	253	284	306	435	509
Monkeys	423	513	527	399	409
Others (Note 1)	75	95	58	42	86
Sub-total (a)	1,147	1,402	1,534	1,663	2,012
Stray animals					
Dogs	6,773	5,663	5,060	3,805	4,203
Cats	3,689	2,824	2,342	1,568	1,133
Pigeons (Note 2)	328	375	404	469	540
Cattle/buffalo	119	104	96	62	79
Others (Note 3)	288	219	229	196	69
Sub-total (b)	11,197	9,185	8,131	6,100	6,024
Total (c)=(a)+(b)	12,344	10,587	9,665	7,763	8,036

Source: AFCD records

Note 1: Other wild animals included frogs, bats, civets and porcupines.

Note 2: Stray pigeons referred to in this Audit Report include feral pigeons (see also Note 1 to para. 1.2).

Note 3: Other stray animals included rabbits, hamsters and chinchillas.

Remarks: Most of these complaints involved nuisances relating to noise, hygiene and safety issues. Other complaints involved, for example, sighting of wild animals, wild bird nests found and requesting AFCD to catch stray animals.

Measures for controlling animal nuisances

1.6 AFCD takes various measures to control nuisances caused by wild and stray animals. Key measures are described in paragraphs 1.7 to 1.11.

1.7 ***Handling complaints about animal nuisances.*** Upon receiving a complaint from the public, it is AFCD's target to give an interim reply and a substantive reply to the complainant within 10 and 30 calendar days respectively. AFCD also adopts the following procedures:

- (a) ***Wild pigs, monkeys and cattle/buffalo.*** For nuisances caused by wild pigs, monkeys and cattle/buffalo:
 - (i) for urgent cases (e.g. the animal is in an urban area or public area and is unable to return to the natural habitat), AFCD staff will attend the scene immediately to guide the animal back to its habitat in the countryside. In case the animal cannot be guided (e.g. the animal is injured), AFCD staff will solicit necessary help (e.g. veterinarian's assistance) and capture the animal for examination/treatment. The captured animal will later be released back to the countryside; and
 - (ii) for non-urgent cases (e.g. the animal has already left the scene), AFCD will monitor the case and take necessary actions (e.g. giving advice to the complainant); and
- (b) ***Stray dogs and cats.*** AFCD adopts a catch and removal approach to handle stray dogs and cats. Upon receiving a public complaint, AFCD staff will attend the scene to locate and catch the animal. The caught animal needs to be kept for at least 4 days (Note 4). If it is not reclaimed by its keeper,

Note 4: *According to the Rabies Ordinance (Cap. 421), where the keeper of an animal which is detained under the Ordinance cannot after reasonable inquiry be found or ascertained within 4 days after the commencement of such detention, the Director of Agriculture, Fisheries and Conservation (or his Deputy Director/Assistant Director) may order the forfeiture of the animal, in which case he may either retain it or cause it to be sold, destroyed or otherwise disposed of as he considers appropriate.*

Introduction

arrangements will be made for it to be rehomed (i.e. adopted) where possible. Animals which are not suitable for rehoming or cannot be rehomed will be euthanised.

For complaints about other animals, AFCD will take necessary actions as the case warrants (e.g. providing advice on the application of bird repellents to places where pigeons are causing nuisances).

1.8 ***Imposing feeding bans.*** Under the Wild Animals Protection Ordinance, the Director of Agriculture, Fisheries and Conservation (or his Deputy Director/Assistant Director) may, for the purpose of the conservation of wild animals and by notice published in the Gazette, specify any place at which the feeding of any wild animal shall be prohibited (Note 5). As at September 2019, the area as shown in Figure 1 had accordingly been specified, at which the feeding of any wild animal is prohibited (hereinafter referred to as “Feeding Ban Area” — Note 6). AFCD conducts regular patrols at Feeding Ban Area, and may take prosecution actions against anyone who has fed wild animals therein (Note 7). Photograph 3 shows a location within Feeding Ban Area.

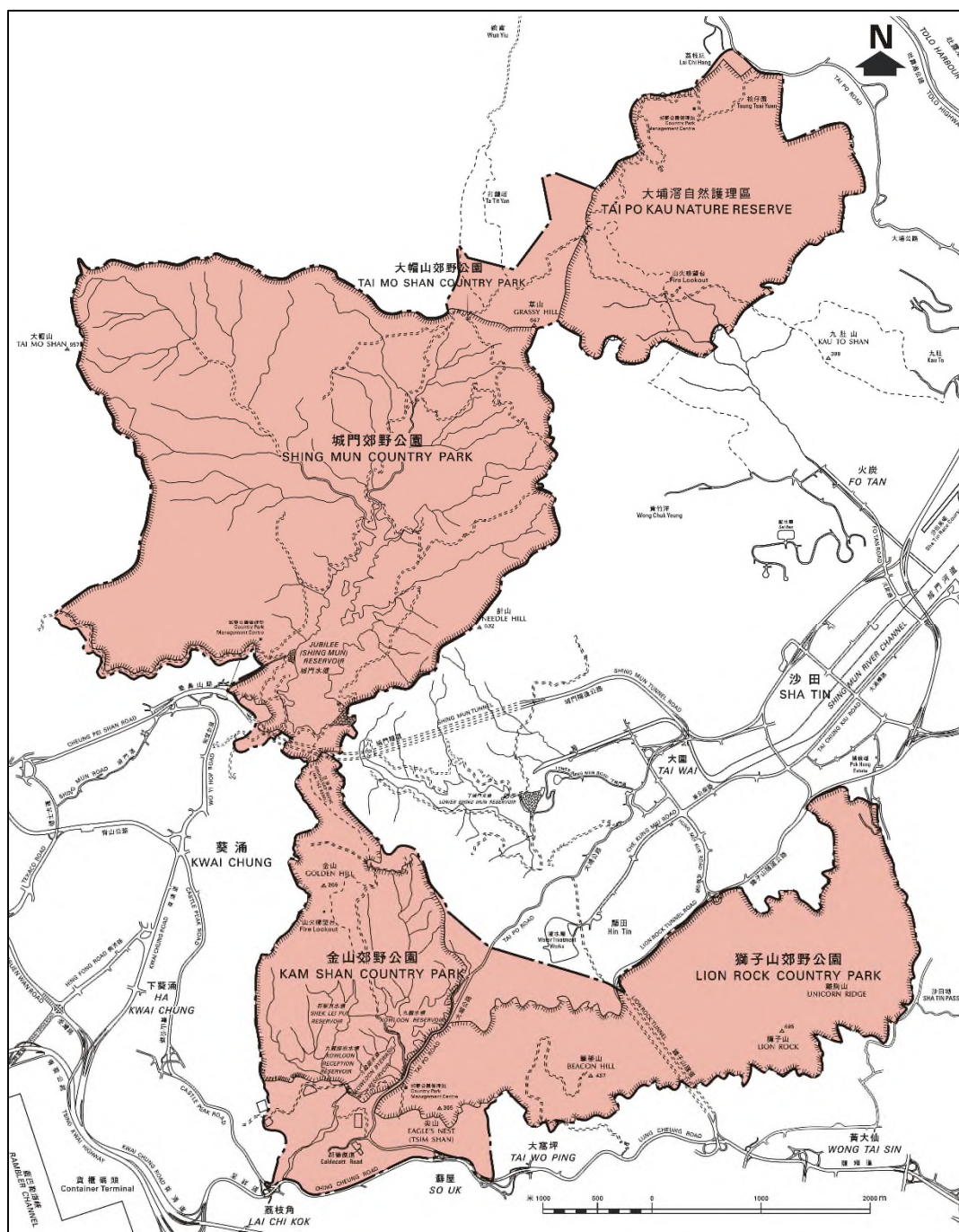
Note 5: *According to the Wild Animals Protection Ordinance, the Director of Agriculture, Fisheries and Conservation (or his Deputy Director/Assistant Director) may, upon application, grant a special permit to any person for feeding of wild animals in such specified places. As at 31 March 2019, there were 7 valid permits.*

Note 6: *Feeding Ban Area comprised: (a) the areas known as Lion Rock Country Park, Kam Shan Country Park, Shing Mun Country Park and Tai Po Kau Nature Reserve; (b) the area comprising that part of Tai Mo Shan Country Park which adjoins Shing Mun Country Park and Tai Po Kau Nature Reserve; (c) the area to the northeast of Kowloon Reservoir; (d) the area to the south of Kowloon Byewash Reservoir; (e) the area to the south of Shing Mun Country Park; (f) the area to the northeast of Tai Po Kau Nature Reserve known as Tsung Tsai Yuen; and (g) two areas which do not form part of but are completely enclosed by Tai Po Kau Nature Reserve.*

Note 7: *Anyone contravening the feeding restriction without the required permission is liable to a fine of \$10,000 upon conviction.*

Figure 1

**Feeding Ban Area designated
under the Wild Animals Protection Ordinance
(September 2019)**



Legend: Places at which the feeding of any wild animal is prohibited

Source: AFCD records

Photograph 3

A location within Feeding Ban Area



Source: Photograph taken by Audit Commission in May 2019

1.9 **Controlling animal populations.** AFCD has implemented population control programmes for animals. Table 2 shows the key programmes of AFCD.

Table 2

**Population control programmes for animals
(31 March 2019)**

Animal	Key programme	Detail
Monkeys	Monkey contraceptive programme (introduced in 2007)	— Monkeys are captured and then sterilised (i.e. undergoing medical operations for contraception) (Note) in the field and then released at the capturing sites.
Wild pigs	Wild pig capture and contraception/relocation programme (CCRP) (introduced in 2017)	— Wild pigs causing nuisances and habituated to obtaining food from feeding are captured and then sterilised (Note) in the field. — They are then relocated to remote countryside.
Cattle/buffalo	Cattle/buffalo capture-sterilisation-relocation programme (introduced in 2011)	— Cattle/buffalo are captured and then sterilised (Note) at treatment centres or in the field. — They are then relocated to suitable habitats in countryside.
Dogs and cats	Free sterilisation of rehomed dogs and cats (introduced in 2011)	— AFCD engages veterinary clinics to provide free sterilisation services (Note) to stray dogs and cats which have been rehomed.

Source: AFCD records

Note: According to AFCD, animals assessed as physically unfit, pregnant or baby animals would not be sterilised.

Remarks: Programmes in the table are those implemented by AFCD. Besides these programmes, AFCD has also assisted animal welfare organisations to implement a programme for neutering stray dogs (see para. 1.11(c)).

Introduction

1.10 **Publicising information about animal control.** AFCD conducts publicity and educational programmes to increase public awareness of matters relating to animal control, such as refraining from feeding wild and stray animals, being a responsible pet owner, and refraining from abandoning pets. AFCD advertises the relevant information through mass media and public transport, visits the community (e.g. organising fun days, pet adoption days/carnivals, roving exhibitions and public lectures), and puts up banners or posters at public places. Figure 2 shows a poster which promotes responsible pet ownership.

Figure 2

**Poster to promote
responsible pet ownership**



Source: AFCD records

1.11 ***Other initiatives.*** AFCD liaises with other government bureaux and departments, and animal welfare organisations (AWOs — Note 8) to facilitate the control of animal nuisances as follows:

- (a) ***Feeding activities outside Feeding Ban Area.*** AFCD refers cases of animal feeding outside Feeding Ban Area to other government departments for taking follow-up actions, as follows:
 - (i) cases of animal feeding in public pleasure grounds noted by AFCD are referred to the Leisure and Cultural Services Department (LCSD) for follow-up actions (Note 9); and
 - (ii) feeding activities in public places (e.g. streets) noted by AFCD are referred to the Food and Environmental Hygiene Department (FEHD) for follow-up actions (Note 10);
- (b) ***Wildlife resistant designs of refuse collection facilities.*** AFCD has commissioned a study to improve the design of refuse collection facilities managed by the Government against the raids of wild pigs or monkeys. The consultant has devised three wildlife resistant designs of rubbish bins and litter containers. The first field trial was conducted in the second half of 2019 at over 40 nuisance blackspots in 8 districts; and

Note 8: *Since 2011, AFCD has been providing subventions to AWOs in support of their work on a project basis. AWOs that are exempted from tax under section 88 of the Inland Revenue Ordinance (Cap. 112) could apply for subventions from AFCD on project-based work directly relating to the promotion of animal welfare and proper animal management. In 2018-19, 11 projects were approved and the total subvention involved was \$0.6 million.*

Note 9: *Authorised officers of LCSD may take prosecution actions against a person feeding any animal, bird or fish kept or found in LCSD venues under the Pleasure Grounds Regulation (Cap. 132BC), and/or may issue fixed penalty notices of \$1,500 under the Fixed Penalty (Public Cleanliness and Obstruction) Ordinance (Cap. 570) if the feeding activities lead to hygiene problems.*

Note 10: *Persons who dirty public places while feeding animals, e.g. leaving residual feed on the ground, will contravene section 4(1) of the Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK). FEHD may take enforcement actions against the offenders under the Fixed Penalty (Public Cleanliness and Obstruction) Ordinance.*

- (c) ***Trap-Neuter-Return (TNR) trial programme for stray dogs.*** AFCD has assisted two AWOs to implement a TNR trial programme for stray dogs between January 2015 and January 2018 (Note 11). Under the trial programme, stray dogs found within two specific sites (i.e. located in Cheung Chau, and in Tai Tong in Yuen Long) were caught, neutered and then returned to the sites. According to AFCD, it would assist and facilitate interested AWOs to implement similar TNR programmes in other locations.

Responsible branches of AFCD

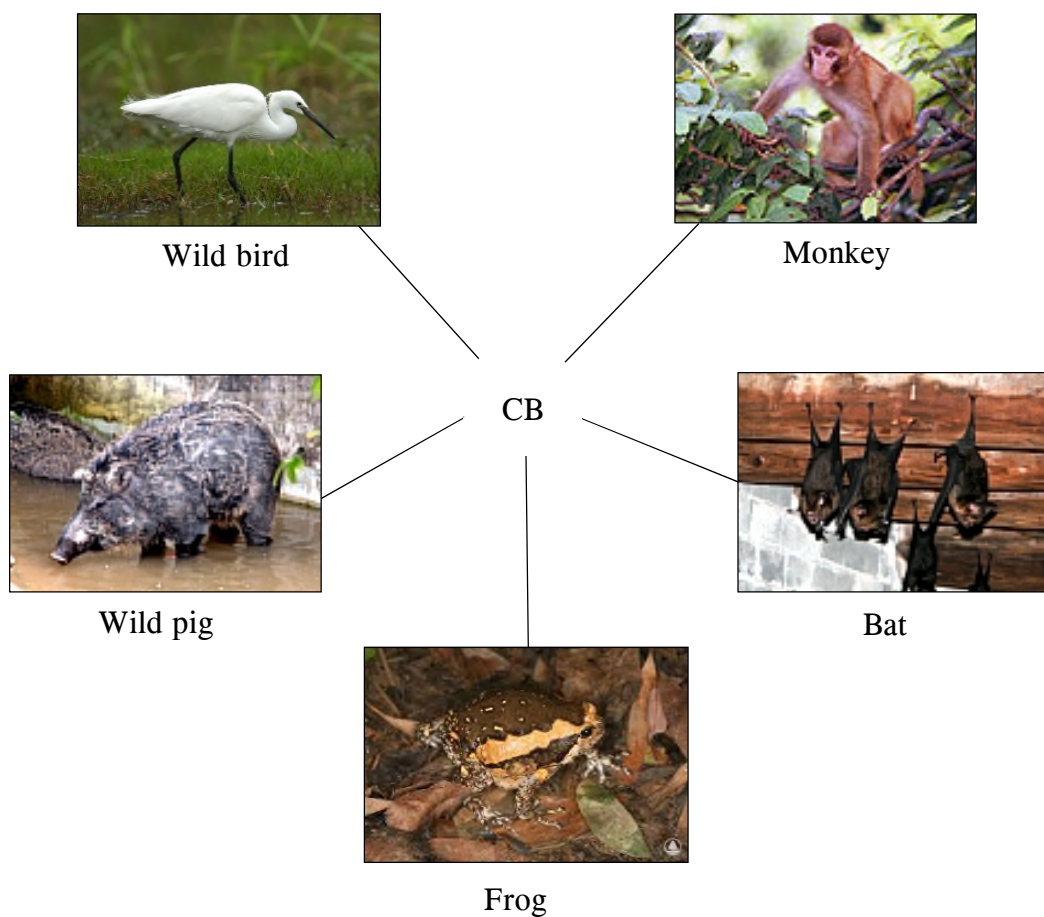
1.12 The measures for controlling animal nuisances are implemented through the Conservation Branch (CB) and the Inspection and Quarantine Branch (IQB) of AFCD. CB is responsible for the control of wild animal nuisances, while IQB is responsible for the control of stray animal nuisances (Note 12). Figures 3 and 4 show examples of animals which have been handled by CB and IQB respectively in the course of handling complaints about animal nuisances.

Note 11: *The Government has not provided financial support to the two AWOs for conducting the TNR trial programme. AFCD has provided various assistances to the two AWOs, for example in identifying suitable trial sites and soliciting support from the local communities. AFCD has commissioned a consultant to monitor and assess the effectiveness of the programme at a cost of \$1.5 million. Besides, AFCD also engaged 2 contract staff during the period 2012-13 to 2017-18 for additional administrative support at a cost of \$5.5 million.*

Note 12: *The Environment Bureau is the policy bureau for the work of CB (according to AFCD, control of wild animals is a matter of conservation). The Food and Health Bureau is the policy bureau for the work of IQB (according to AFCD, control of stray animals is a matter of environmental hygiene).*

Figure 3

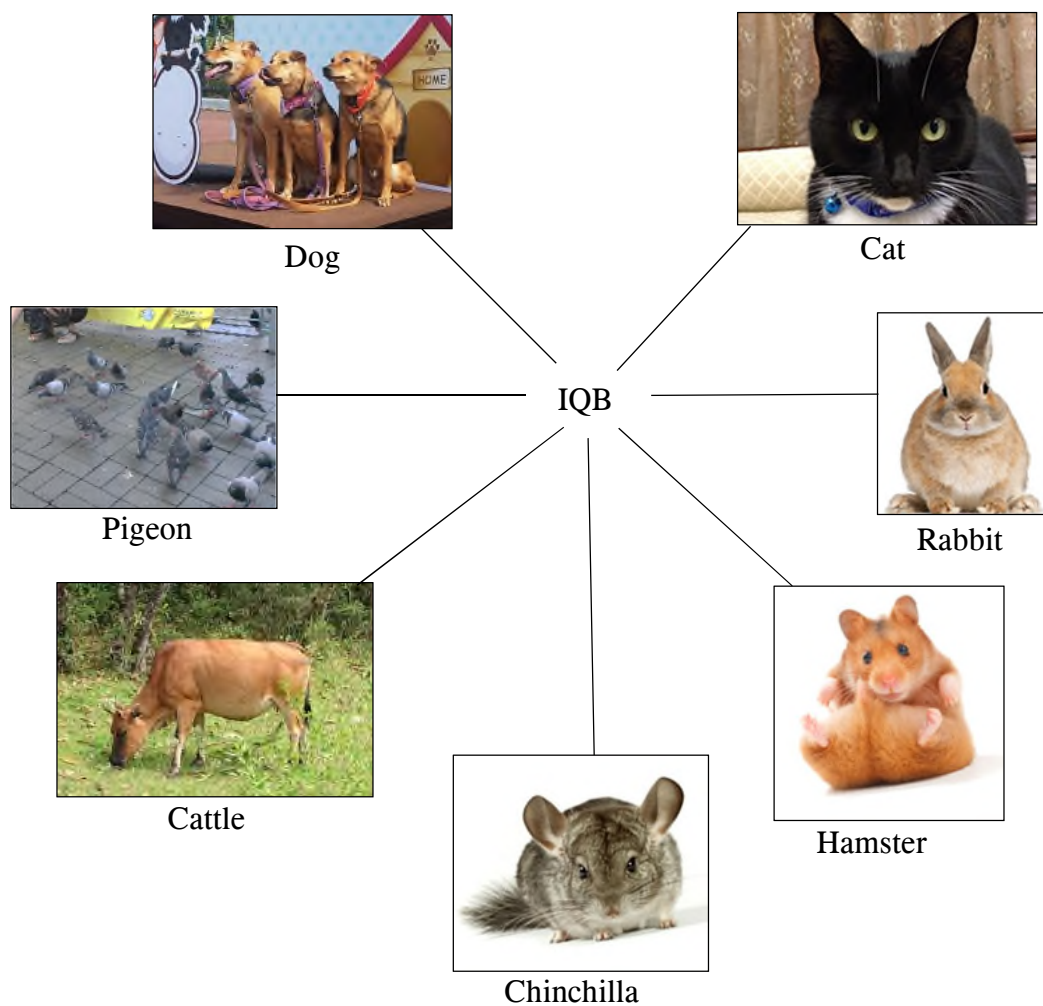
**Examples of wild animals handled by CB
in the course of handling complaints about animal nuisances**



Source: AFCD records

Figure 4

**Examples of stray animals handled by IQB
in the course of handling complaints about animal nuisances**



Source: AFCD records

1.13 An extract of the organisation chart of AFCD (as at 31 March 2019) is at Appendix A. As at 31 March 2019, the control of wild and stray animals (including control of wild and stray animal nuisances) involved 30 staff under CB (Note 13) and 211 staff under IQB (Note 14). In 2018-19, the expenditure incurred in the control of wild and stray animals (including the control of wild and stray animal nuisances) was \$61.9 million, comprising \$17.6 million for wild animals and \$44.3 million for stray animals.

Audit review

1.14 In April 2019, Audit Commission (Audit) commenced a review of the control of wild and stray animal nuisances by AFCD. The audit review has focused on the following areas:

- (a) control of wild animal nuisances (PART 2);
- (b) control of stray animal nuisances (PART 3); and
- (c) publicity, prosecution and other administrative issues (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

Note 13: *According to AFCD, apart from control of wild animal nuisances, the 30 staff under CB are also responsible for wildlife rescue and conservation, enforcement of the Wild Animals Protection Ordinance, conservation and management of the Mai Po and Inner Deep Bay Ramsar Site, the implementation of the Ramsar Convention, and wise-use of wetlands, etc.*

Note 14: *According to AFCD, apart from control of stray animal nuisances, the 211 staff under IQB are also responsible for control of pet animals, promoting animal welfare, enforcement of relevant legislation including the Rabies Ordinance and Pounds Ordinance (Cap. 168), detaining biter dogs for observation, and quarantining import dogs and cats against rabies.*

Introduction

General response from the Government

1.15 The Director of Agriculture, Fisheries and Conservation thanks Audit for conducting this audit review. He has said that AFCD is following up the recommendations made in this Audit Report and has already implemented some of them.

Acknowledgement

1.16 Audit would like to acknowledge with gratitude the full cooperation of the staff of AFCD, FEHD and LCSD during the course of the audit review.

PART 2: CONTROL OF WILD ANIMAL NUISANCES

2.1 This PART examines AFCD's control of nuisances caused by wild animals, focusing on the following areas:

- (a) addressing complaints about wild animal nuisances (paras. 2.2 to 2.20);
- (b) population control programmes for wild animals (paras. 2.21 to 2.46); and
- (c) administering Feeding Ban Area (paras. 2.47 to 2.53).

Addressing complaints about wild animal nuisances

2.2 In the past five years from 2014-15 to 2018-19, the number of complaints lodged with AFCD about wild animal nuisances increased by 75%, from 1,147 complaints in 2014-15 to 2,012 complaints in 2018-19 (see Table 1 in para. 1.5). According to AFCD records, the vast majority (95%) of wild animal nuisance complaints lodged in the period were related to wild pigs (43%), monkeys (29%) and wild birds (23%).

2.3 AFCD has laid down guidelines on handling complaints about wild animal nuisances. AFCD also maintains in its computer system a register of complaints about wild animal nuisances (hereinafter referred to as register of wild animal nuisances). The register records details of individual complaints (e.g. date of receiving the complaint, follow-up actions conducted, and dates of giving replies to the complainant).

Need to ensure that on-site visits are conducted where necessary

2.4 According to AFCD guidelines (see para. 2.3), where complainants are requesting assistance (e.g. rescue of injured animals), and/or animals are causing nuisances (e.g. monkeys grabbing people's belongings), AFCD staff need to either:

- (a) visit the sites to handle the cases; or

Control of wild animal nuisances

- (b) take actions on the cases.

During on-site visits (see (a) above), AFCD staff need to take necessary measures, such as driving away/capturing the animals, and conducting on-site investigations.

2.5 For other cases (e.g. complainants enquiring about the handling of wild animals), where complainants are not requesting assistance and animals are not causing nuisances, on-site visits are not required.

2.6 Audit examined the register of wild animal nuisances (see para. 2.3) for complaints received in 2018-19, and noted that of the 2,012 complaints received, AFCD staff would need to conduct on-site visits in 1,553 cases (i.e. cases referred to in para. 2.4). However, in a large proportion (65% or 1,005 cases) of the 1,553 cases, AFCD staff did not conduct any on-site visits (see Table 3). Case 1 shows an example.

Table 3
Conduct of on-site visits for
1,553 complaints about wild animal nuisances
(2018-19)

Wild animal	Cases where the complainants were requesting assistance and/or animals were causing nuisances		
	On-site visits conducted (a) (No.)	On-site visits not conducted (b) (No.)	Total (c) = (a) + (b) (No.)
Wild pigs	208 (27%)	562 (73%)	770 (100%)
Monkeys	217 (53%)	192 (47%)	409 (100%)
Wild birds	99 (34%)	189 (66%)	288 (100%)
Others (Note)	24 (28%)	62 (72%)	86 (100%)
Overall	548 (35%)	1,005 (65%)	1,553 (100%)

Source: Audit analysis of AFCD records

Note: Other wild animals included frogs, bats, civets and porcupines.

Case 1

**AFCD staff did not attend the scene in handling a complaint
(November and December 2018)**

1. AFCD received a wild pig nuisance complaint from a member of the public via e-mail in November 2018.

2. The complainant alleged that, in recent months, there had been an increasing number of wild pigs in the Waterfront Park of Cyberport during the daytime. As the wild pigs were posing safety concern to both residents and small children, the complainant requested AFCD to take follow-up action.

3. According to the register of wild animal nuisances, in response to the complaint received, an AFCD officer informed the complainant via e-mail in December 2018 that:

- (a) AFCD was closely monitoring the wild pig occurrence in that area. The exact reason for the frequent occurrence of wild pigs in that area was still being investigated; and
- (b) the Hong Kong Police Force should be contacted for emergency assistance (Note).

AFCD also advised the complainant to keep calm when encountering wild pigs and stay away from them.

4. Audit noted that no AFCD officers had conducted on-site visits in response to the complaint, and that the reasons for not conducting on-site visits had not been documented.

Audit comments

5. According to AFCD guidelines, AFCD officers would need to conduct on-site visits for this complaint. It was less than satisfactory that AFCD officers did not document the reasons for not conducting any on-site visits.

Source: Audit analysis of AFCD records

Note: According to AFCD guidelines, in case of emergency, assistance should be sought from the Hong Kong Police Force.

Control of wild animal nuisances

2.7 Other than the 1,553 cases in Table 3 in paragraph 2.6, Audit noted that the 2,012 complaints received in 2018-19 included 197 cases of wild bird enquiries and 262 cases related to nuisance complaints with inadequate details recorded in the register of wild animal nuisances. It was unclear as to whether on-site visits would need to be conducted in these 262 cases (i.e. whether they were cases referred to in para. 2.4). Audit further noted that, of these 262 cases, on-site visits had not been conducted in 256 (98%) cases.

2.8 Upon enquiry, in September 2019, AFCD informed Audit that upon receiving a complaint, AFCD officers needed to exercise discretion on whether on-site visit was required with reference to the guidelines. In some cases, although complainants were requesting assistance and/or animals were causing nuisances, on-site visits might not be required (e.g. repeated complaints about the same nuisance site where the nature of the complaints remained the same, and frog calls and other animal sightings where verbal advice was considered adequate).

2.9 In Audit's view, where complainants were requesting assistance and/or animals were causing nuisances (see para. 2.4), on-site visits would facilitate the effective handling of complaint cases. Documenting the reasons for not conducting any on-site visits in these cases, while not presently required under AFCD guidelines, would help enhance accountability. Audit considers that AFCD should review the adequacy of guidelines on the conduct of on-site visits for complaint cases about wild animal nuisances, and ensure that the reasons for not conducting any on-site visits suggested under the guidelines are documented. To facilitate monitoring the conduct of on-site visits, AFCD should take measures to ensure that adequate information (see para. 2.7) is recorded in the register of wild animal nuisances for supervisory review.

Need to improve timeliness in responding to complaints

2.10 According to AFCD guidelines, upon receiving a complaint about wild animal nuisances, AFCD needs to give an interim reply to the complainant within 10 calendar days, and a substantive reply within 30 calendar days.

2.11 Audit examination of the register of wild animal nuisances (see para. 2.3) indicated that in many cases the dates essential for monitoring case progress had not been fully recorded (i.e. date of receipt of the complaint, date of interim reply and

date of substantive reply — hereinafter referred to as the essential dates). Of the 2,012 complaints received in 2018-19:

- (a) in 1,126 (56%) cases, all essential dates had been recorded; and
- (b) in 886 (44%) cases, some essential dates had not been recorded, as follows:
 - (i) in 791 cases, either the date of interim reply or the date of substantive reply had not been recorded;
 - (ii) in 92 cases, both the date of interim reply and the date of substantive reply had not been recorded; and
 - (iii) in 3 cases, the date of receipt of the complaint had not been recorded.

2.12 Audit analysed 1,917 (i.e. 1,126 + 791) complaints (see para. 2.11(a) and (b)(i)). For these complaints, the date of receipt of the complaint and the date of interim reply and/or the date of substantive reply had been recorded. Audit noted delays in responding to these complaints, as follows:

- (a) ***Interim reply.*** In 49 (3% of 1,917) cases, the interim reply was delayed (i.e. reply given after 10 calendar days). Delays ranged from 1 to 47 days, averaging 9 days; and
- (b) ***Substantive reply.*** In 398 (21% of 1,917) cases, the substantive reply was delayed (i.e. reply given after 30 calendar days). Delays ranged from 1 to 63 days, averaging 8 days.

2.13 Audit considers that AFCD should improve the timeliness in responding to complaints. To facilitate monitoring the progress of complaint handling, AFCD should take measures to ensure that adequate information is recorded in the register of wild animal nuisances for supervisory review.

Need to follow guidelines on sterilisation of nuisance monkeys

2.14 In handling monkey nuisance complaints, AFCD conducted on-site visits to drive away the nuisance monkeys or, where the situation permitted, capture them. According to AFCD guidelines, nuisance monkeys captured would be sterilised before releasing back to the wild.

2.15 Audit noted that, of the 360 nuisance monkeys captured in the period 2014-15 to 2018-19, 29 (8%) had not been sterilised before releasing, contrary to AFCD guidelines. Records did not indicate the reasons for not sterilising these 29 monkeys captured. Table 4 shows the number of nuisance monkeys captured and sterilised.

Table 4

**Sterilisation of nuisance monkeys captured
(2014-15 to 2018-19)**

Year	No. of monkeys captured (a) = (b) + (c) + (d)	Handling of monkeys captured (No. of monkeys)		
		Sterilised (b)	Not sterilised, with justifications (Note 1) (c)	Not sterilised, without justifications (d)
2014-15	69	31 (45 %)	38 (55 %)	0 (0 %)
2015-16	87	43 (49 %)	39 (45 %)	5 (6 %)
2016-17	116	13 (11 %)	89 (77 %)	14 (12 %)
2017-18	41	13 (32 %)	20 (49 %)	8 (19 %)
2018-19	47	23 (49 %)	22 (47 %)	2 (4 %)
Overall	360	123 (34 %) (Note 2)	208 (58 %)	29 (8 %)

Source: Audit analysis of AFCD records

Note 1: According to AFCD, monkeys assessed as physically unfit, pregnant or baby monkeys would not be sterilised.

Note 2: Of the 123 nuisance monkeys captured during the period 2014-15 to 2018-19, 91 were sterilised by veterinarians from the contractor engaged under the monkey contraceptive programme (see para. 2.21(a)), and 32 were sterilised by AFCD Veterinary Officers in Animal Management Centres (see para. 3.10).

Control of wild animal nuisances

2.16 Upon enquiry, in September 2019, AFCD informed Audit that under current practice, nuisance monkeys captured would be sent to Animal Management Centres (AMCs). Monkeys which would be released to the country parks would be sterilised as appropriate by the contractor of the monkey contraceptive programme (see para. 2.21(a)) during the scheduled surgery period from September to March of the following year. The 29 monkeys released without sterilisation as mentioned in paragraph 2.15 were captured outside the scheduled surgery period (i.e. no veterinarians from the contractor were available for conducting sterilisation for the monkeys). To avoid keeping the monkeys for a prolonged period, AFCD released the monkeys without undergoing sterilisation on the grounds of animal welfare.

2.17 While AFCD captured nuisance monkeys and released them without undergoing sterilisation (see Table 4 in para. 2.15), Audit noted that under AFCD's population control programme, the contractor had indicated difficulties in capturing monkeys for sterilisation (see paras. 2.27 to 2.31). In Audit's view, sterilising the nuisance monkeys captured would not only comply with AFCD guidelines but also help implement the population control programme.

2.18 Audit considers that AFCD should take measures to ensure that AFCD guidelines on sterilising nuisance monkeys are followed (including monkeys captured outside the contractor's scheduled surgery period). For better control, AFCD needs to document the reasons for not sterilising any nuisance monkeys captured in the future.

Audit recommendations

2.19 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **review the adequacy of guidelines on the conduct of on-site visits for complaints about wild animal nuisances;**
- (b) **ensure that the reasons for not conducting any on-site visits suggested under the guidelines are documented;**
- (c) **improve the timeliness in responding to complaints about wild animal nuisances;**

- (d) take measures to ensure that adequate information is recorded in the register of wild animal nuisances for monitoring the handling of nuisance complaints;
- (e) take measures to ensure that AFCD guidelines on sterilising nuisance monkeys are followed; and
- (f) document the reasons for not sterilising any nuisance monkeys captured in the future.

Response from the Government

2.20 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

Population control programmes for wild animals

2.21 AFCD has implemented population control programmes for monkeys and wild pigs:

- (a) *Monkey contraceptive programme.* Since 2007, contractors have been engaged to capture monkeys on trapping sites (see Photograph 4 for an example), and before releasing, sterilise them (Note 15) in the field; and

Note 15: *Under the contract, endoscopic tubectomy would be performed on female monkeys, whereas endoscopic vasectomy would be performed on male monkeys.*

Photograph 4

A monkey trapping site in Sha Tin District



Source: Photograph taken by Audit in July 2019

- (b) **CCRP.** Since 2017, a contractor has been engaged to capture nuisance-causing wild pigs on selected sites and, before releasing, sterilise them (Note 16) in the field. AFCD will relocate the pigs to remote countryside areas where appropriate (Note 17).

Note 16: *Under the contract, injection of an immune-contraceptive vaccine or endoscopic tubectomy would be performed on female wild pigs, whereas surgical castration would be performed on male wild pigs.*

Note 17: *Before 2017, if wild pigs caused injury to human beings and/or damaged properties and if other management measures were found to be ineffective, the wild pigs would be removed by hunting operations by civilian hunting teams under the authorisation of the Hong Kong Police Force and AFCD. Hunting operations have been suspended since 2017.*

Need to review sterilisation targets for monkey contraceptive programme

2.22 For the monkey contraceptive programme, AFCD specified in the service contract the minimum number of monkeys to be sterilised every year. According to AFCD records, this minimum number had been determined taking into account:

- (a) results of monkey population surveys conducted by the contractor in the past (Note 18); and
- (b) the number of monkey nuisance cases in suburban residential areas and whether the number of cases was within manageable limit.

2.23 Audit noted that the minimum number of monkeys to be sterilised, as specified in the service contracts with the contractor, had decreased by 40% from 100 monkeys (for the contract period 2014 to 2015) to 60 monkeys (for the contract period 2018 to 2019). Meanwhile, the actual number of monkeys sterilised under the contracts exceeded the specified minimum number by 15% to 63% every year (see Table 5).

Note 18: *Population surveys were conducted through various means, such as direct counting of monkeys at individual sites.*

Table 5

**Number of monkeys sterilised
under the monkey contraceptive programme
(2014 to 2019)**

Contract period	Specified minimum no. of monkeys to be sterilised	Actual no. of monkeys sterilised (Note 1)	No. of sterilised monkeys exceeding the specified minimum
	(a)	(b)	(c) = (b) – (a)
January 2014 to January 2015	100 (Note 2)	118 (Note 3)	18 (18%)
January 2015 to January 2016	50 (Note 2)	80 (Note 3)	30 (60%)
February 2016 to January 2017	100	115	15 (15%)
March 2017 to February 2018	80	130	50 (63%)
May 2018 to May 2019	60	86	26 (43%)

Source: Audit analysis of AFCD records

Note 1: It included nuisance monkeys captured by AFCD (see Note 2 to Table 4 in para. 2.15). During the period from January 2014 to May 2019, a total of 94 nuisance monkeys had been sterilised by the contractor.

Note 2: According to the service contract, requirement on the minimum number of monkeys to be sterilised applied to female monkeys only.

Note 3: This was the actual number of female monkeys sterilised in the contract period. All male monkeys captured in the period had been sterilised by the contractor.

2.24 In September 2019, Audit enquired about the reasons for specifying a minimum number instead of a target/optimum number under the contract. AFCD informed Audit that:

- (a) the number of monkeys to be sterilised was not used to evaluate the contractor's performance;

- (b) under the current practice, to ensure subsistence of the monkey troops (Note 19), the contractor would not arrange capture and sterilisation of monkeys for troops which had about 80% of the population sterilised; and
- (c) since the number of monkeys captured would be affected by various factors (e.g. weather and maturity of captured monkeys), AFCD considered that it was appropriate to set a flexible target (i.e. the minimum number of monkeys sterilised) for the contract.

2.25 In Audit's view, it is not entirely satisfactory that only a minimum number instead of a target/optimum number was specified, because:

- (a) the actual number of monkey sterilised had been considerably exceeding the specified minimum (e.g. by 63% in 2017 to 2018 — see Table 5 in para. 2.23). It was not entirely clear as to whether the specified minimum was a useful reference; and
- (b) while the contractor would refrain from sterilising monkeys for troops which had about 80% of the population sterilised (see para. 2.24(b)), this practice had not been mentioned in the contract. Without stipulating clearly, there might be a risk that the number of monkeys sterilised might substantially exceed the specified minimum, thus overly reducing the monkey population, which might be contrary to AFCD's intent.

2.26 Audit considers that AFCD needs to review the sterilisation targets and reconsider the need for specifying a target range/optimum number of monkeys to be sterilised. Furthermore, to better measure the contractor's performance, AFCD should consider setting suitable performance indicators under the monkey contraceptive programme.

Note 19: *According to AFCD, monkeys live in troops of up to 200 individuals and each troop generally consists of a few number of males and many females plus their depending young.*

Need to address difficulties in locating and capturing monkeys

2.27 According to AFCD records, the population of monkeys increased by 13 %, from 1,728 in January 2015 to 1,957 in May 2019. The number of monkey troops also increased by 33 %, from 24 troops in January 2015 to 32 troops in May 2019.

2.28 Audit noted the following issues from 2014 to 2019, in contrast to the above increase:

- (a) ***Decreased number of monkeys captured.*** The number of monkeys trapped by the contractor decreased by 59 %, from 499 (for the contract period 2014 to 2015) to 205 (for the contract period 2018 to 2019) (see Table 6); and

Table 6

**Monkeys captured by the contractor
(January 2014 to May 2019)**

Contract period	No. of monkeys captured (Note)
January 2014 to January 2015	499
January 2015 to January 2016	458
February 2016 to January 2017	388
March 2017 to February 2018	310
May 2018 to May 2019	205

Source: Audit analysis of AFCD records

Note: The number of monkeys captured included those subsequently sterilised and those not sterilised (see Note to Table 2 in para. 1.9).

- (b) ***No monkey trapped for many troops.*** Of the 32 troops of monkeys identified in May 2018 to May 2019, for 17 troops, no monkey had been trapped since January 2014.

2.29 Audit further noted that the contractor was responsible for identifying locations for setting trap cages (Note 20). In August 2019, in reporting the work under the contract to AFCD, the contractor remarked that:

- (a) monkeys were highly familiarised with the trap cages and becoming highly cautious in entering them. It was expected that trapping monkeys would become more difficult in the future; and
- (b) more effort should be put to search for the “less frequently seen” monkey troops (Note 21) in the future.

2.30 Upon enquiry, in September 2019, AFCD informed Audit that the increase in monkey population and number of monkey troops identified (see para. 2.27) were due to extension of the population survey coverage (Note 22).

2.31 Audit considers that AFCD needs to look into any difficulties in locating and capturing monkeys under the contraceptive programme, and keep in view the need for enhancing the monkey trapping strategy (e.g. trapping monkeys from the “less frequently seen” troops which were found to have caused nuisances, and trapping monkeys from troops for which no monkeys have been trapped for a long time).

Need for CCRP to cover more nuisance blackspots

2.32 According to AFCD records, CCRP (see Table 2 in para. 1.8) is a means for addressing persistent wild pig nuisances in urban areas, as well as a population

Note 20: *According to AFCD records, the contractor conducted population surveys of monkeys and identified trapping locations with reference to the surveys.*

Note 21: *According to the contractor’s monkey population surveys, of the 32 troops identified in 2018 and 2019, 19 were less frequently seen.*

Note 22: *Since 2017, AFCD has searched for the “less frequently seen” monkey troops (in particular, the monkey troops which caused nuisances to residential areas adjacent to Kam Shan, Lion Rock and Shing Mun Country Parks) which had not been covered in previous surveys.*

Control of wild animal nuisances

control programme for wild pigs. Under CCRP, wild pigs causing persistent nuisances and habituated to obtaining food from feeding are captured, sterilised, and relocated to remote countryside, where appropriate. As at 31 May 2019, the contractor had conducted 51 operations under CCRP. The operations were conducted on sites selected by AFCD.

2.33 Audit noted that AFCD had identified nuisance blackspots for wild pigs. According to AFCD, a location would be classified as a nuisance blackspot for wild pigs if any of the following criteria had been met:

- (a) a total of 8 or more wild pig nuisance complaints were received for the location in 2017 and 2018;
- (b) injury case(s) relating to wild pigs happened at the location in or after 2018;
- (c) wild pig nuisance complaints about the location were repeatedly received from the District Council; and
- (d) wild pig nuisance at the location was the subject matter of an Office of the Ombudsman case received in 2018.

Nuisance blackspots for wild pigs comprised blackspots caused by feeding and blackspots caused by environmental hygiene problem.

2.34 AFCD records indicated that there were 77 wild pig nuisance blackspots as at 31 May 2019. Audit noted that:

- (a) 19 (25%) blackspots had been covered by past CCRP operations (i.e. included in the 51 CCRP operations — see para. 2.32);
- (b) AFCD had planned to cover another 22 (28%) blackspots in future CCRP operations; and
- (c) AFCD had not yet planned to conduct CCRP operations in the remaining 36 (47%) blackspots.

AFCD records did not indicate that AFCD had laid down its criteria for selecting sites for conducting CCRP operations. Audit further noted that of the 36 blackspots (see (c) above) for which no plan had been made, 34 (94%) were located in urban areas (i.e. outside country parks).

2.35 In Audit's view, as a means for addressing persistent wild pig nuisances in urban areas (see para. 2.32), it is necessary for CCRP operations to cover as many blackspots as possible, particularly those in urban areas.

2.36 Audit considers that, for better control, AFCD needs to lay down the criteria for selecting sites for conducting CCRP operations. Having regard to the laid-down criteria, AFCD needs to take measures to ensure that nuisance blackspots for wild pigs are adequately covered by CCRP operations (e.g. expediting the conduct of CCRP operations for the 22 blackspots (see para. 2.34(b)), and consider including the remaining 36 blackspots (see para. 2.34(c)), in future CCRP operations).

Need to expedite evaluation of the contraceptive vaccine used

2.37 Under CCRP, a multi-year immune-contraceptive vaccine (Note 23) has been used as one of the means to sterilise female wild pigs. The use of the vaccine on wild pigs is a new attempt in Hong Kong. To evaluate the effectiveness of the vaccine and to determine the way forward in controlling the wild pig population, AFCD has required the contractor to recapture wild pigs that were administered with the vaccine during past CCRP operations. Pregnancy tests will be conducted on the recaptured wild pigs.

2.38 According to AFCD records, as at 31 May 2019, 64 wild pigs had been administered with the vaccine and released back to the wild. Audit noted that only 6 (9%) of the 64 wild pigs had been recaptured for pregnancy tests. According to AFCD:

Note 23: *The vaccine would prevent mammals from entering a reproductive state as proven by captive trials. It has been found to be effective for at least four to six years on captive wild pigs in an overseas study.*

Control of wild animal nuisances

- (a) owing to the extensive movement range and distribution of wild pigs, capturing wild pigs was challenging; and
- (b) to facilitate the recapturing of wild pigs, Global Positioning System collars (Note 24) were used to help monitor the movement of the released wild pigs. Owing to the shape of the neck and head of wild pigs, the collars did not easily stay on them.

2.39 Audit further noted that the study on the immune-contraceptive vaccine which commenced in October 2017 had been scheduled for completion in 24 months (i.e. October 2019). However, due to the limited number of wild pigs recaptured, the contractor had not yet obtained enough samples as at 31 July 2019 to evaluate the effectiveness of the vaccine.

2.40. Upon enquiry, in September 2019, AFCD informed Audit that in order to obtain adequate samples, it would focus on selected sites where the recapture of wild pigs was possible. Audit considers that, with a view to deciding on the most appropriate means of sterilising female wild pigs in the future, AFCD should ensure that effective and timely measures are taken to secure adequate samples for evaluating the effectiveness of the immune-contraceptive vaccine on wild pigs.

Need to expedite conducting population surveys of wild pigs

2.41 Since 2009, AFCD has engaged the contractor of the monkey contraceptive programme to conduct a survey of the monkey population in Hong Kong every year. According to AFCD, population survey of monkeys is an important tool for monitoring changes in the population structure and the effectiveness of the population control programme.

Note 24: *The collars were programmed to provide a geographical position record every hour. Position records of wild pigs were transmitted to AFCD as text messages through the local mobile phone network.*

2.42 While a population control programme (i.e. CCRP) has been implemented for wild pigs, AFCD has not regularly conducted population surveys of wild pigs. Records indicated that:

- (a) in 2002, for studying the ecology of Hong Kong, AFCD started a territory-wide survey (Note 25) of medium and large non-flying terrestrial mammals (i.e. including wild pigs). The survey had been conducted for two periods, i.e. 2002 to 2006 and 2012 to 2016;
- (b) Legislative Council (LegCo) Members had, from time to time, enquired about the estimated population of wild pigs in Hong Kong. In January 2019, AFCD responded that, owing to the features of wild pigs (e.g. solitary or in small group, and secretive), the monitoring of wild pigs was very difficult. Population surveys had never been conducted on wild pigs specifically; and
- (c) in January 2019, AFCD informed LegCo Members that a survey would be undertaken to estimate the total population of wild pigs in Hong Kong, with a view to gathering more information to guide the future management strategy in relation to wild pigs.

2.43 Upon enquiry, in June and September 2019, AFCD informed Audit that:

- (a) AFCD aimed to manage wild pigs causing nuisances in urban areas but not to deal with the majority of wild pigs living in country parks (i.e. those wary about contacting humans);
- (b) AFCD considered that a survey of wild pig population in Hong Kong would have little help in addressing wild pig nuisances in urban areas. Nevertheless, a pilot study for wild pig population had been commenced in April 2019 and the first batch of data had been collected for studying the effectiveness of the techniques used in the population survey; and

Note 25: *The survey was conducted through a passive infrared camera trap, which allowed photographs of wildlife to be taken automatically whenever a “warm” animal crossed in front of the sensor. The photographs taken of each species were then analysed.*

Control of wild animal nuisances

- (c) after figuring out the techniques on precise estimation of total wild pig population, AFCD would determine how the population survey of wild pigs could be proceeded.

2.44 Population survey is an important tool for monitoring the effectiveness of the population control programme (see para. 2.41) and guiding the future management strategy in relation to wild pigs (see para. 2.42(c)). In September 2019, AFCD was still figuring out the techniques on precise estimation of the total wild pig population. Audit considers that AFCD should expedite actions in this regard.

Audit recommendations

2.45 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **review the sterilisation targets under the monkey contraceptive programme and reconsider the need for specifying a target range/optimum number of monkeys to be sterilised;**
- (b) **consider setting suitable performance indicators under the monkey contraceptive programme with a view to better measuring the contractor's performance;**
- (c) **look into any difficulties in locating and capturing monkeys under the contraceptive programme, and keep in view the need for enhancing the monkey trapping strategy;**
- (d) **lay down the criteria for selecting sites for conducting CCRP operations;**
- (e) **having regard to the laid-down criteria (see (d) above), take measures to ensure that nuisance blackspots for wild pigs are adequately covered by CCRP operations;**
- (f) **ensure that effective and timely measures are taken to secure adequate samples for evaluating the effectiveness of the immune-contraceptive vaccine on wild pigs; and**

- (g) **expedite conducting population surveys of wild pigs.**

Response from the Government

2.46 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations. He has said that:

- (a) the monkey contraceptive programme has been an adaptive management programme (i.e. subject to changes depending on the outcome in the earlier phases of the programme). In the annual tendering exercises for selecting the contractor during the past years, AFCD had been closely monitoring and adjusting the sterilisation targets in response to the decreasing birth rates of the monkey population. In any case, AFCD is exploring to specify a target range of the number of monkeys to be sterilised for monitoring purposes, and will incorporate the parameter in the next tendering exercise; and
- (b) AFCD reiterates that the number of monkeys to be sterilised will decrease given the success in the reduction of birth rates of monkeys. AFCD has always been keeping in view the feasibility of alternative monkey trapping strategies.

Administering Feeding Ban Area

2.47 Wild animals can be attracted to urban areas by the easier food sources there. AFCD has specified Feeding Ban Area under the Wild Animals Protection Ordinance (see para. 1.8).

2.48 According to AFCD records, the specification of Feeding Ban Area was made in 1999 for the following key reasons:

- (a) making monkeys revert to foraging food from the wild, rather than from people;
- (b) slowing down the unnatural population growth of monkeys due to human feeding; and

Control of wild animal nuisances

- (c) reducing the opportunities of close contacts between people and monkeys and thus the potential risk of transmitting diseases.

Need to take into account wild pig nuisances in imposing feeding bans

2.49 According to the Wild Animals Protection Ordinance, in addition to monkeys, Feeding Ban Area also applies to other wild animals including wild pigs. Audit noted that, as at 31 May 2019, there were 61 nuisance blackspots caused by feeding, which comprised 5 blackspots for monkeys (Note 26) and 56 blackspots for wild pigs. Audit noted the following issues:

- (a) **Monkeys.** All the 5 nuisance blackspots for monkeys were located within Feeding Ban Area; and
- (b) **Wild pigs.** None of the 56 nuisance blackspots for wild pigs was located within Feeding Ban Area.

2.50 In view of the considerable number of complaints about wild pig nuisances in recent years (e.g. 1,008 complaints in 2018-19) and the substantial increase in the complaints over the years (i.e. 155% increase from 2014-15 to 2018-19), there is merit for AFCD to consider putting nuisance blackspots for wild pigs under feeding ban. In this connection, Audit noted that a related government advisory body (Note 27) had also considered it necessary for Feeding Ban Area to be extended to cover such blackspots.

Note 26: *Similar to wild pigs, AFCD had also set nuisance blackspots for monkeys with regard to criteria similar to those adopted for wild pigs (see para. 2.33). Nuisance blackspots for monkeys comprised blackspots caused by:*

- (a) *feeding;*
- (b) *environmental hygiene problem; and*
- (c) *plant attraction.*

Note 27: *The Animal Welfare Advisory Group advises the Director of Agriculture, Fisheries and Conservation on matters concerning animal welfare. Its members include academics, professionals and the Assistant Director (Inspection and Quarantine) of AFCD. In March 2019, it issued a letter to the Environment Bureau, suggesting that the prohibition of feeding of wild animals at Feeding Ban Area should be extended to cover nuisance blackspots for wild pigs.*

2.51 Upon enquiry, in September 2019, AFCD informed Audit that the Government had been adopting a multi-pronged approach, namely managing wild pig nuisances and monitoring wild pig population, reducing food attraction and strengthening public education to remind the public not to feed wild animals with a view to relieving wild pig nuisances to the public. If the current measures together are considered ineffective in the medium term, the Government will consider the feasibility of imposing feeding bans to control wild pig nuisances in the long term.

Audit recommendation

2.52 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should keep in view the need to extend Feeding Ban Area under the Wild Animals Protection Ordinance to cover nuisance blackspots for wild pigs, taking into account the need for better addressing wild pig nuisances over the territory.**

Response from the Government

2.53 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendation.

PART 3: CONTROL OF STRAY ANIMAL NUISANCES

3.1 This PART examines AFCD's control of nuisances caused by stray animals, focusing on the following issues:

- (a) addressing complaints about stray animal nuisances (paras. 3.2 to 3.8);
- (b) handling of stray animals (paras. 3.9 to 3.20);
- (c) population control programmes for stray animals (paras. 3.21 to 3.36); and
- (d) other measures for controlling stray animal nuisances (paras. 3.37 to 3.42).

Addressing complaints about stray animal nuisances

3.2 In the past five years from 2014-15 to 2018-19, the number of complaints lodged with AFCD about stray animal nuisances decreased by 46%, from 11,197 complaints in 2014-15 to 6,024 complaints in 2018-19 (see Table 1 in para. 1.5).

3.3 AFCD has laid down guidelines on handling complaints about stray animal nuisances. According to the guidelines, upon receiving a complaint, AFCD needs to give an interim reply to the complainant within 10 calendar days, and a substantive reply within 30 calendar days.

Need to improve complaint records

3.4 Audit noted that AFCD had not maintained adequate records for monitoring whether the target response time (i.e. 10 calendar days for an interim reply and 30 calendar days for a substantive reply) had been met:

- (a) ***Before January 2018.*** Brief descriptions of complaints were jotted down in a diary. AFCD did not have a central computer system for recording details of individual complaints, such as the date of receipt of a complaint,

the follow-up actions taken on the complaint, as well as the date of interim reply and the date of substantive reply to the complainant; and

- (b) ***January 2018 and thereafter.*** AFCD had improved its records. Using a computer system, AFCD recorded the details of individual complaints, such as the date of receipt of a complaint and the follow-up actions taken. However, the date of interim reply and the date of substantive reply to the complainant were not recorded in the computer system.

3.5 Audit examined the complaint records maintained under AFCD's computer system (see para. 3.4(b)) and noted that:

- (a) for 96% of the complaints received in 2018-19, AFCD staff had taken the first follow-up actions on the cases (e.g. conducting a site visit) within 10 calendar days from the date of receipt of the complaints (Note 28); and
- (b) however, as the dates of replies had not been recorded in the system, it could not be ascertained whether timely replies had been given to complainants as required under AFCD guidelines.

3.6 In Audit's view, there is a lack of management information for monitoring the timeliness of replies to complainants. The complaint recording system needs further improvement.

Audit recommendation

3.7 **Audit has recommended that the Director of Agriculture, Fisheries and Conservation should take measures to improve the complaint recording system for stray animal nuisances to ensure that adequate management information is available for monitoring the timeliness of replies to complainants.**

Note 28: *After taking the first follow-up action, AFCD staff might need to take further actions as the case warranted (e.g. conducting further site visits). Audit examination focused on the lead time for the first follow-up action.*

Response from the Government

3.8 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendation. He has said that, before January 2018, while AFCD did not have a central computer system for recording details of individual complaints, interim and substantive replies to complainants were recorded in the government hotline “1823” computer system and the register for written complaints as appropriate.

Handling of stray animals

3.9 According to AFCD records, the vast majority (91%) of stray animal nuisance complaints lodged in the period 2014-15 to 2018-19 were related to dogs (63%) and cats (28%).

3.10 AFCD adopts a catch and removal approach to handle nuisance complaints about stray dogs and cats (see para. 1.7(b)). The Animal Management (Operations) Division under IQB of AFCD (see para. 1.12) operates four AMCs over the territory (Note 29), which are responsible for catching and handling stray dogs and cats as well as animals from other sources (Note 30). AMCs also collect stray dogs and cats caught by the public (Note 31). As at 31 March 2019, the four AMCs had a total of 189 staff. A Veterinary Officer heads each AMC.

3.11 AFCD has laid down guidelines on handling stray dogs and cats received at AMCs (i.e. caught by AFCD staff or collected from the public — see para. 3.10). According to the guidelines:

Note 29: *The four AMCs are located in Hong Kong Island, Kowloon, New Territories South and New Territories North.*

Note 30: *Apart from stray animals, AMCs also handle animals which are given up by owners, animals seized during enforcement, animals which have bitten a person and need to be observed in accordance with the law, and animals under import quarantine.*

Note 31: *AMCs may provide cages upon request (e.g. by management companies) for catching stray animals. The animals so caught will be collected by AMCs.*

- (a) dogs and cats are put in kennels (Note 32) for observation, and the Veterinary Officer conducts health and temperament assessments of them;
- (b) to check whether a dog or cat has a keeper, AFCD traces any microchips implanted in the dog or cat (Note 33), and cross-checks details of the dog or cat with any cases of lost animals which have been reported to AFCD. If the keeper is identified, AFCD will ask the keeper to reclaim the dog or cat;
- (c) dogs and cats left unclaimed, but assessed to be in good health and having a gentle temperament (see (a) above) would be transferred to AWOs (i.e. rehoming partners — see para. 3.17) for adoption by the public. AFCD does not provide adoption service directly to the public. Dogs and cats transferred to AWOs for adoption are regarded as rehomed (hereinafter referred to as rehomed dogs and cats); and
- (d) unclaimed dogs and cats which are not in good health or are having aggressive temperament are unsuitable for rehoming. These dogs and cats would be euthanised.

Table 7 shows the number of stray dogs and cats reclaimed, rehomed and euthanised from 2014-15 to 2018-19.

Note 32: *As at 31 March 2019, AMCs had a total of 480 kennels for stray and biter animals, and another 40 kennels for animals under import quarantine.*

Note 33: *The microchip is inserted under the skin of animal's neck. It carries a numeric code. The code can be read by a scanner. With the code, information about the keeper might be traced through AFCD's licensing system (for dogs with licences), or through the veterinary clinic which has microchipped the animal (for dogs and cats without licences).*

Control of stray animal nuisances

Table 7

**Stray dogs and cats
reclaimed, rehomed and euthanised
(2014-15 to 2018-19)**

	2014-15	2015-16	2016-17	2017-18	2018-19
No. of stray dogs:					
Received at AMCs (Note 1)	3,393	2,293	1,773	1,439	1,187
Reclaimed/rehomed/euthanised					
(a) Reclaimed	600	417	345	314	306
(b) Rehomed (Note 2)	735	623	612	538	542
(c) Euthanised	2,126	1,330	949	703	487
Total (d) = (a)+(b)+(c)	3,461	2,370	1,906	1,555	1,335
No. of stray cats:					
Received at AMCs (Note 1)	1,765	1,219	835	615	508
Reclaimed/rehomed/euthanised					
(e) Reclaimed	657	481	317	179	121
(f) Rehomed (Note 2)	158	154	115	72	90
(g) Euthanised	840	555	352	306	269
Total (h) = (e)+(f)+(g)	1,655	1,190	784	557	480

Source: Audit analysis of AFCD records

Note 1: Dogs and cats received in a year might not be reclaimed/rehomed/euthanised in the same year.

Note 2: The figures include dogs and cats which were not stray animals (e.g. given up by owners or seized during enforcement — see Note 30 to para. 3.10). AFCD did not have separate breakdowns of the figures for these dogs and cats.

Need to improve guidelines on handling stray dogs and cats

3.12 According to AFCD guidelines, stray dogs and cats not reclaimed after 96 hours or 4 days (see para. 1.7(b)) and considered to be unsuitable for rehoming (i.e. failing either health or temperament assessment) would be euthanised. For individual cases (i.e. the animal is injured or sick with low chance of survival, or the animal is surrendered by its keeper and considered not suitable for rehoming by a Veterinary Officer), the animal may need to be euthanised within 4 days.

3.13 According to AFCD records, in 2018-19, 487 stray dogs and 269 stray cats were not rehomed and were euthanised. These dogs and cats, on average, had been detained at AMCs for 10 days before euthanasia. The period of detention ranged from 0 to 93 days for individual dogs and from 0 to 51 days for individual cats. Table 8 shows the results of health and temperament assessments for the stray dogs and cats euthanised in 2018-19.

Table 8

**Results of health and temperament assessments
for 487 stray dogs and 269 stray cats euthanised
(2018-19)**

Assessment results	No. of dogs euthanised		No. of cats euthanised	
	Within 4 days	After 4 days	Within 4 days	After 4 days
<i>Passing both health and temperament assessments</i>				
Sub-total (a)	0	2 (Note 1)	0	0
<i>Failing health or temperament assessment (Note 2)</i>				
Failing health assessment	30 (Note 3)	94	11 (Note 3)	14
Failing temperament assessment	5 (Note 4)	356	1 (Note 4)	243
Sub-total (b)	35 └───┘	450 └───┘ 485	12 └───┘	257 └───┘ 269
Total (c)=(a)+(b)	35	452	12	257
	487		269	

Source: Audit analysis of AFCD records

Note 1: According to AFCD, since no AWO was interested in arranging rehoming for the 2 dogs, they were euthanised although they had passed the health and temperament assessments. The 2 dogs had been detained for 19 and 21 days before euthanasia.

Note 2: According to AFCD, no temperament assessment would be conducted if a dog or cat was too fierce or if it had failed the health assessment, and no health assessment would be conducted if a dog or cat had failed the temperament assessment.

Note 3: According to AFCD, the 30 dogs and 11 cats failing the health assessment and euthanised within 4 days of detention were all injured/sick with low chance of survival (see para. 3.12).

Note 4: According to AFCD, of the 5 dogs failing the temperament assessment and euthanised within 4 days of detention, 3 were surrendered by their keepers (see para. 3.12). For the remaining 2 dogs and 1 cat, the reasons for euthanasia within 4 days were not recorded.

3.14 Audit noted that, of the 485 dogs and 269 cats failing the health or temperament assessment:

- (a) 450 (93%) dogs and 257 (96%) cats had been detained for more than 4 days before euthanasia (ranged from 4 to 93 days, averaging 11 days). According to AFCD:
 - (i) the 4-day period was the minimum time for which a dog/cat had to be kept before euthanasia; and
 - (ii) a dog/cat could improve over time. AFCD would conduct re-assessments for the dog/cat to determine whether it became more suitable for rehoming; and
- (b) 2 dogs and 1 cat failing the temperament assessment had been euthanised within 4 days without reasons recorded (see Note 4 to Table 8 in para. 3.13).

3.15 Regarding prolonging the detention period to enhance the chance of rehoming a dog/cat (see para. 3.14(a)), Audit noted that AFCD guidelines did not adequately cover the matter (e.g. for how long a dog/cat should be observed). Some dogs/cats had been observed for a short period (e.g. 4 days) and some others for a much longer period (e.g. 93 days). Audit also noted that euthanising the 2 dogs and 1 cat mentioned in paragraph 3.14(b) within 4 days, with no reasons documented, did not appear to have complied with AFCD guidelines.

3.16 Audit considers that AFCD needs to ensure that adequate guidelines are provided on handling stray dogs and cats. AFCD also needs to ensure that the guidelines are complied with, and the reasons for any non-compliance are documented.

Need to enhance monitoring of rehoming partners

3.17 Unclaimed dogs and cats suitable for rehoming would be transferred to rehoming partners for adoption by the public (see para. 3.11(c)). AWOs interested in becoming AFCD's rehoming partners need to submit applications to AFCD. As at

Control of stray animal nuisances

11 July 2019, AFCD had 16 rehoming partners (i.e. 16 AWOs). Audit noted the following issues:

- (a) ***Rehoming partners not frequently visited.*** According to AFCD, it visited AWOs when assessing their applications for rehoming partnership. Thereafter, AFCD would only visit them where necessary (e.g. AWO moving to a new premises or changing its management). Audit noted that, of the 16 AWOs, 7 had become rehoming partners for more than 10 years. There was a risk that some rehoming partners had not been visited for a considerable period of time; and
- (b) ***Rehoming records not submitted.*** According to AFCD, upon collecting a dog or cat from AFCD, a rehoming partner signs an undertaking to submit a rehoming record to AFCD within three months. The record should show relevant information about the rehomed dog or cat (e.g. adoption status and sterilisation status). In 2018-19, 10 AWOs collected dogs and cats from AFCD for rehoming. Audit noted that only 2 (20%) of the 10 AWOs had submitted rehoming records as required. Upon Audit's enquiry, in August 2019, AFCD reminded AWOs of the requirement to submit rehoming records.

In Audit's view, through visiting rehoming partners and collecting rehoming records, AFCD can obtain useful information which helps assess whether an AWO is still suitable for being a rehoming partner. It was less than satisfactory that AFCD did not regularly visit rehoming partners and did not follow up the non-submission of rehoming records by some rehoming partners.

3.18 Audit considers that AFCD needs to consider visiting rehoming partners regularly and ensure that they submit rehoming records as required.

Audit recommendations

3.19 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) **ensure that adequate guidelines are provided on handling stray dogs and cats;**

- (b) ensure that the guidelines on handling stray dogs and cats are complied with, and the reasons for any non-compliance are documented; and
- (c) consider visiting rehoming partners regularly and ensure that they submit rehoming records as required.

Response from the Government

3.20 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

Population control programmes for stray animals

3.21 AFCD has implemented population control programmes for rehomed dogs and cats (see paras. 3.22 to 3.25) as well as for stray cattle and buffalo (hereinafter collectively referred to as stray cattle unless specified otherwise) (see paras. 3.31 to 3.34). AFCD has also assisted AWOs to implement a programme for neutering stray dogs (see paras. 3.26 to 3.30).

Need to ensure that sterilisation requirement of rehomed dogs and cats is followed

3.22 According to rehoming partners' undertakings (see para. 3.17(b)), rehomed animals shall be "neutered" (i.e. sterilised) by a registered veterinary surgeon. AFCD will bear the expenses for sterilisation if the operation is conducted at veterinary clinics engaged by AFCD. Rehoming partners, as well as people adopting dogs and cats from the rehoming partners, could take the rehomed dogs and cats to the clinics for free sterilisation. The clinics submit sterilisation records to AFCD monthly for reimbursement of expenses (Note 34). As at 31 August 2019, there were 9 AFCD-engaged veterinary clinics.

Note 34: *Free sterilisation is also provided for rehomed rabbits. In 2018-19, 20 rabbits were rehomed and 5 rabbits were sterilised at AFCD-engaged veterinary clinics. AFCD's expenditure for sterilising rehomed animals (i.e. dogs, cats and rabbits) was \$129,000 in 2018-19.*

Control of stray animal nuisances

3.23 In July 2019, AFCD informed Audit that it did not keep information of the total number of rehomed animals sterilised (i.e. sterilised at AFCD-engaged veterinary clinics or at any other veterinary clinics). Audit examined the sterilisation records submitted by AFCD-engaged veterinary clinics to AFCD for 2014-15 to 2018-19. Audit found that:

- (a) in 2018-19, 27% of rehomed dogs and 49% of rehomed cats were sterilised at AFCD-engaged veterinary clinics; and
- (b) the percentage of rehomed dogs sterilised at AFCD-engaged veterinary clinics decreased from 56% in 2014-15 to 27% in 2018-19.

Table 9 shows the rehomed dogs and cats sterilised at AFCD-engaged veterinary clinics from 2014-15 to 2018-19.

Table 9

**Stray dogs and cats rehomed and
sterilised at AFCD-engaged veterinary clinics
(2014-15 to 2018-19)**

		2014-15	2015-16	2016-17	2017-18	2018-19
No. of stray dogs	Rehomed	735	623	612	538	542
	Sterilised at AFCD-engaged veterinary clinics	413 (56%)	344 (55%)	300 (49%)	245 (46%)	147 (27%)
No. of stray cats	Rehomed	158	154	115	72	90
	Sterilised at AFCD-engaged veterinary clinics	49 (31%)	36 (23%)	50 (43%)	24 (33%)	44 (49%)

Source: Audit analysis of AFCD records

Remarks: Stray dogs and cats rehomed in a year might not be sterilised in the same year.

3.24 For the rehomed dogs and cats which had not been sterilised at AFCD-engaged clinics, it was unclear as to whether they were sterilised elsewhere (e.g. at the adopters' own expenses). In the absence of relevant records, the situation could not be ascertained. In Audit's view, the percentage of rehomed dogs and cats sterilised at AFCD-engaged veterinary clinics was low. There was a risk that some rehomed dogs and cats might not be sterilised, contrary to the requirement set out in the rehoming partners' undertakings.

3.25 Audit considers that AFCD needs to look into the reasons for the low percentage of rehomed dogs and cats sterilised at AFCD-engaged veterinary clinics. AFCD also needs to take measures to ensure that rehoming partners follow the requirement of sterilising rehomed dogs and cats.

Need to keep in view implementation of TNR trial programme

3.26 The TNR trial programme (see para. 1.11(c)) was implemented in two specific sites (i.e. located in Cheung Chau, and in Tai Tong in Yuen Long) from January 2015 to January 2018. Under the programme, two AWOs recruited carers to feed and catch stray dogs within the specific sites. Captured dogs were transported to AWOs' designated veterinary clinic for assessment and, where suitable, neutering. Captured dogs not suitable for rehoming were returned to the two specific sites (Note 35).

3.27 AFCD commissioned a consultant in 2015 to assess the effectiveness of the TNR trial programme. According to the consultant's assessment, the targets of the TNR trial programme had only been partly achieved (see Table 10).

Note 35: *Stray dogs neutered under the programme were also microchipped, dewormed and inoculated against major infectious diseases. The dogs' temperament was also assessed.*

Table 10

**Targets and achievements of TNR trial programme
(January 2015 to January 2018)**

Target	Achievement	Target achieved
Neutering at least 80% of stray dogs during the first 6 months of the programme.	It took about 10 months to neuter 80% of stray dogs in Cheung Chau and Tai Tong.	No
An average annual reduction of 10% in the stray dog population (i.e. 30% over the 3-year period).	Over the 3-year period, the overall reduction in the stray dog population was 14% in Cheung Chau and 27% in Tai Tong (Note 1).	No
Complaints (Note 2) received should be matched with, or lower than, the territory-wide average during the trial period.	For complaints about stray dogs over the 3-year period, the territory-wide reduction was 35%, whereas the reduction in complaints was 31% for Cheung Chau and 58% for Tai Tong.	Partly

Source: Audit analysis of AFCD records

Note 1: According to AFCD, the results of a regression analysis showed that the decreasing trend of dog number in Tai Tong was not significant.

Note 2: Under the TNR trial programme, complaints within the programme sites were referred to and handled by the responsible AWO.

3.28 In May 2018, regarding the achievements of the TNR trial programme, LegCo was informed that:

- (a) the target average annual reduction in the stray dog population was not achieved. It might be due to reasons such as difficulties in recording accurately the number of stray dogs in the vast programme sites, and improved health conditions of stray dogs under the programme care (see also Note 35 to para. 3.26);

Control of stray animal nuisances

- (b) within the programme sites, the number of complaints about stray dogs over the trial period showed fluctuations. Such a result might not be related to the TNR trial programme; and
- (c) it appeared that the TNR concept might not be effective in reducing the stray dog population and nuisances within a short period.

LegCo was further informed that the two AWOs responsible for the TNR trial programme had agreed to continue to monitor the number of stray dogs recorded under the TNR trial programme.

3.29 According to AFCD, as at 31 July 2019, the two AWOs were still running the TNR trial programme (i.e. beyond the trial period). In Audit's view, this warrants AFCD's attention because:

- (a) the TNR concept is different from AFCD's established practice for handling stray dogs (i.e. the catch and removal approach — see para. 1.7(b)), where stray dogs are caught and taken away from the scene; and
- (b) the effectiveness of the TNR trial programme is still unknown (see para. 3.28(c)).

3.30 Audit considers that AFCD needs to keep in view the implementation of the TNR trial programme, and take timely actions to rectify the situation where necessary.

Need to ensure timely implementation of management plan for cattle

3.31 From time to time, AFCD received nuisance complaints (e.g. disturbance to the traffic and damage to crops) about stray cattle (Note 36).

3.32 In 2011, AFCD set up the Cattle Management Team with the aim of conducting long-term management of stray cattle. This would also ensure that stray cattle co-exist with local residents in harmony. From time to time, AFCD devised management plans for controlling the cattle population. Measures taken under the plans included:

- (a) ***Capture-sterilisation-relocation programme.*** AFCD captures stray cattle to conduct surgical sterilisation. Upon recovery, the cattle will be relocated to suitable habitats in countryside; and
- (b) ***Research on injectable contraceptive vaccination.*** In 2014, AFCD commenced a research on injectable contraceptive vaccination for female stray cattle, with a view to assessing its feasibility and cost-effectiveness as an alternative to surgical sterilisation. So far, results of the research have revealed that the vaccine yielded a success rate of approximately 70% in rendering infertility in cattle. However, the efficacy of vaccination on buffalo seemed to be insignificant.

3.33 In June 2018, AFCD commissioned a consultancy study of stray cattle management in Hong Kong (Note 37). In August 2019, AFCD devised a stray cattle management plan based on the consultancy report, setting out the following short to long-term goals:

Note 36: *According to AFCD's survey conducted in 2018, there were about 1,140 heads of stray cattle (i.e. 980 heads of stray cattle and 160 heads of stray buffalo). These cattle distributed across Lantau Island, Sai Kung, and the central and northeast New Territories. Upon receiving a complaint, AFCD officers will attend the scene and carry out investigation. If the cattle owner could be identified, AFCD officers will advise the owner to keep the animal under proper control. If no owner could be identified, AFCD officers will arrange to remove the animal.*

Note 37: *The review report was finalised and submitted to AFCD in July 2019.*

Control of stray animal nuisances

- (a) the short-term goal is to surgically sterilise 75% of the cattle population and 80% of the buffalo population from 2019 to 2022;
- (b) the medium-term goal is to surgically sterilise 75% of the remaining cattle population and all the remaining buffalo population from 2022 to 2027; and
- (c) the long-term goal is to continue to control the cattle and buffalo populations and surgically sterilise 50% of the calves each year.

According to AFCD, it would brief relevant AWOs and stakeholders on the details of the stray cattle management plan before implementing it. Audit noted that as at mid-September 2019, AFCD had not yet started briefing relevant AWOs and stakeholders on the management plan.

3.34 Audit considers that AFCD needs to take prompt actions to brief relevant AWOs and stakeholders on the stray cattle management plan, with a view to implementing the plan as soon as possible.

Audit recommendations

3.35 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) **look into the reasons for the low percentage of rehomed dogs and cats sterilised at AFCD-engaged veterinary clinics;**
- (b) **take measures to ensure that rehoming partners follow the requirement of sterilising rehomed dogs and cats;**
- (c) **keep in view the implementation of the TNR trial programme, and take timely actions to rectify the situation where necessary; and**
- (d) **take prompt actions to brief relevant AWOs and stakeholders on the stray cattle management plan, with a view to implementing the plan as soon as possible.**

Response from the Government

3.36 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

Other measures for controlling stray animal nuisances

Need to explore stray cattle movement control measures

3.37 Stray cattle wandering on roads disturb traffic and pose safety risks. In 2015, AFCD proposed to install cattle grids at a location in Sai Kung Country Park to minimise the chance of stray cattle entering roads and urban areas. AFCD and the relevant departments have carried out a detailed study on cattle grids. It was considered that there would be potential hazards to road users if cattle grids are installed on local public roads. AFCD did not pursue the cattle grid proposal further. Photograph 5 shows the cattle grids installed in AFCD Operation Centre in Ta Kwu Ling.

Photograph 5

**Cattle grids installed in
AFCD Operation Centre in Ta Kwu Ling**



Source: AFCD records

Control of stray animal nuisances

3.38 In June 2018, AFCD commissioned a consultancy study of stray cattle management in Hong Kong (see para. 3.33). According to the consultant, controlling the movement of stray cattle alongside with population control measures could reduce complaints about nuisances. The consultant recommended AFCD to consider other measures to control stray cattle movement, such as electronic collars (Note 38). Audit considers that AFCD needs to explore the use of other measures for controlling cattle movement, taking into account the consultant's advice.

Need to devise effective measures to control pigeon population in a timely manner

3.39 For pigeons, the number of nuisance complaints (Note 39) lodged with AFCD increased by 65% from 328 in 2014-15 to 540 in 2018-19 (see Table 1 in para. 1.5). According to its records, key measures taken by AFCD included:

- (a) in September 2018, in view of the increasing number of complaints, AFCD set up the Feral Pigeon Population Control Unit to tackle problems relating to pigeons. Work of the Unit included educating the public not to feed pigeons, studying the effectiveness of different methods of deterring pigeon congregation and exploring the use of contraceptive drugs to control the pigeon population; and
- (b) in February 2019, AFCD engaged a contractor to conduct a territory-wide pigeon population survey. The objective of the survey was to investigate the possible reasons for pigeon congregation with a view to devising a plan to control pigeon population. In April 2019, the survey commenced.

Note 38: *According to the consultant, electronic collar is a new technology for controlling cattle movement. The electronic collars track cattle movement by using Global Positioning System, and contain electrodes that could be programmed to “buzz” the cattle when they move away from the fenced area.*

Note 39: *Upon receipt of a nuisance complaint about pigeons, AFCD will conduct site inspection and take swab samples (e.g. bird dropping) for Avian Influenza testing. AFCD will also give advice to the complainant on methods to avoid congregation of pigeons, and provide bird repellents to the complainant for trial use where appropriate.*

3.40 Audit noted that, according to AFCD records, the territory-wide pigeon population survey was scheduled for completion in March 2020. Given the considerable increase in the number of nuisance complaints about pigeons over the years (see para. 3.39), Audit considers that AFCD needs to closely monitor the conduct of the territory-wide pigeon population survey, with a view to devising effective measures to control the pigeon population in a timely manner.

Audit recommendations

3.41 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) **explore the use of other measures for controlling cattle movement, taking into account the consultant's advice; and**
- (b) **closely monitor the conduct of the territory-wide pigeon population survey, with a view to devising effective measures to control the pigeon population in a timely manner.**

Response from the Government

3.42 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

PART 4: PUBLICITY, PROSECUTION AND OTHER ADMINISTRATIVE ISSUES

4.1 This PART examines AFCD's publicity, prosecution and other administrative issues relating to the control of wild and stray animal nuisances, focusing on the following areas:

- (a) publicity and educational programmes (paras. 4.2 to 4.18);
- (b) prosecutions of related offences (paras. 4.19 to 4.23); and
- (c) other administrative issues (paras. 4.24 to 4.33).

Publicity and educational programmes

4.2 AFCD conducts various publicity and educational programmes to increase public awareness of matters relating to animal control (see para. 1.10). Table 11 shows the key programmes conducted in 2018-19.

Table 11

Key publicity and educational programmes (2018-19)

Key programme	Number of activities
Carnival	2 carnivals
Training course	7 courses
Roving exhibition	40 exhibitions
School talk	95 talks
Public seminar	10 seminars
Education booth	32 booths
Eco-tour	6 tours

Source: AFCD records

Need to improve the provision of school talks and public seminars

4.3 School talks were held at kindergartens, primary schools, secondary schools and tertiary institutions. Public seminars were held at private housing developments (including private housing estates and single-block private residential buildings) (Note 40). AFCD sent letters to invite schools and the management bodies annually to submit applications for talks and seminars.

4.4 On the whole, Audit noted that from 2014-15 to 2018-19, the total number of school talks/public seminars increased by 62 (144%) from 43 in 2014-15 to 105 in 2018-19, and that the total number of participants in school talks/public seminars increased by 6,917 (116%), from 5,952 participants in 2014-15 to 12,869 participants in 2018-19 (see Table 12). However, as can also be seen from Table 12:

- (a) for school talks:
 - (i) the number of talks increased from 29 in 2014-15 to 90 in 2015-16, and then remained at some 80 or 90 talks a year (i.e. ranging from 78 to 95 talks) thereafter; and
 - (ii) the number of participants, having reached its peak of 21,288 participants in 2015-16, decreased by 8,515 (40%) to 12,773 participants in 2018-19; and
- (b) for public seminars:
 - (i) the number of seminars decreased from 14 in 2014-15 to 10 in 2018-19; and
 - (ii) the average number of participants in each seminar was on the low side. For example, in 2018-19, on average, there were fewer than 10 participants per seminar (i.e. 96 participants in 10 seminars).

Note 40: *School talks and public seminars aimed to promote responsible pet ownership. According to AFCD, from 2019-20 onwards, school talks on refraining from feeding wild animals will also be organised.*

Table 12

School talks and public seminars
(2014-15 to 2018-19)

School talk/ public seminar	Year				
	2014-15	2015-16	2016-17	2017-18	2018-19
<i>School talk</i>					
No. of talks (a)	29	90	93	78	95
No. of participants (b)	5,859	21,288	19,455	18,051	12,773
<i>Public seminar</i>					
No. of seminars (c)	14	11	13	13	10
No. of participants (d)	93	86	88	83	96
<i>Total</i>					
No. of talks/seminars (e)=(a)+(c)	43	101	106	91	105
No. of participants (f)=(b)+(d)	5,952	21,374	19,543	18,134	12,869

Source: Audit analysis of AFCD records

4.5 In this connection, Audit noted that the number of invitation letters sent to schools decreased by 81 (14%), from 559 letters in 2015-16 to 478 letters in 2018-19 (Note 41), and number of invitation letters sent to private housing developments decreased by 5,080 (85%), from 5,943 letters in 2015-16 to 863 letters in 2018-19 (Note 42).

Note 41: From 2015-16 to 2018-19, the number of invitation letters sent to schools was 559, 664, 379 and 478 respectively.

Note 42: From 2015-16 to 2018-19, the number of invitation letters sent to private housing developments was 5,943, 2,461, 498 and 863 respectively.

4.6 Upon enquiry, in September 2019, AFCD informed Audit that it started organising school talks and public seminars in 2013-14. Every year, it endeavoured to invite schools and residents of private housing developments (invited through their management bodies) to participate in school talks and public seminars:

- (a) for school talks:
 - (i) in early years, for some schools, talks were provided to all students. As a result, fewer schools requested the talks in subsequent years. Schools which already had all students attended the talks would request the talks for new students only (i.e. Primary One or Secondary One students); and
 - (ii) the number of secondary school students is on a decreasing trend, therefore the number of students participating in school talks followed the same trend; and
- (b) for public seminars:
 - (i) the number of participants in public seminars was a true reflection of the demand from the society. In some circumstances, for housing developments which had seminars in early years, participants found that the seminars had met their objectives, and they had no further requests for holding seminars again. AFCD endeavoured to provide seminars to housing developments as long as the estimated number of participants was more than 6; and
 - (ii) in 2015-16, invitation letters were sent to registered private housing developments, including single-block private residential buildings without owners' corporations. However, in view of their low response rate, single-block private residential buildings without owners' corporations were removed from the mailing list. Consequently, invitation letters were only sent to private housing developments where pets were allowed.

4.7 Publicising information about animal control is one of the key measures for controlling animal nuisances (see para. 1.10). While noting AFCD's difficulties (see

para. 4.6), the decreasing/limited number of participants is not conducive to publicity of animal control. More talks and seminars should be conducted.

4.8 Audit considers that AFCD needs to take appropriate measures to step up its effort (e.g. sending more invitation letters to reach more interested parties) in the provision of school talks and public seminars.

Need to ensure display of banners at blackspots and congregation spots

4.9 To facilitate controlling wild and stray animal nuisances, AFCD has identified animal nuisance blackspots (for wild pigs and monkeys — see para. 2.33 and Note 26 to para. 2.49) and animal congregation spots (for pigeons — Note 43). It has been AFCD's practice to put up banners at blackspots and congregation spots, reminding people not to feed the animals there and advising them of the precautions to be taken when encountering wild animals.

4.10 Audit noted the following situation, as at 31 May 2019:

- (a) **Monkeys.** All 22 (100%) blackspots had banners put up;
- (b) **Wild pigs.** Of the 77 blackspots, only 66 (86%) had banners put up; and
- (c) **Pigeons.** Of the 166 congregation spots, only 71 (43%) had banners put up.

4.11 Upon enquiry, in September 2019, AFCD informed Audit that, among the 166 pigeon congregation spots, 71 with a comparatively higher number of pigeon nuisance complaints were shortlisted to be the locations for putting up banners. In view of the high necessity for public education on the matter, AFCD would liaise with relevant departments and offices to put up banners in the remaining 95 congregation spots in 2019-20.

Note 43: *According to AFCD, a location would be classified as a congregation spot of pigeons if frequent complaints are received.*

4.12 In Audit's view, it was less than satisfactory that banners had not been put up at all nuisance blackspots for wild pigs and pigeon congregation spots. In particular, a large proportion (57%) of pigeon congregation spots had no banners displayed.

4.13 Audit considers that AFCD needs to ensure that banners are displayed at animal nuisance blackspots and animal congregation spots in a timely manner to publicise information about control of animal nuisances (e.g. reminding people of the need to refrain from feeding wild and stray animals, and advising people of the precautions to be taken when encountering wild animals).

Need to enhance publicity on handling of wild birds

4.14 From 2014-15 to 2018-19, complaints about nuisances caused by wild birds increased by 256 (101%) cases, from 253 in 2014-15 to 509 in 2018-19 (see Table 1 in para. 1.5). According to AFCD records, in a large proportion (more than 50%) of these cases, the complaints were related to bird nests (e.g. enquiring about the ways to handle bird nests discovered) (see Table 13).

Table 13

**Breakdown of complaints about wild birds
(2014-15 to 2018-19)**

Case nature	No. of complaint cases				
	2014-15	2015-16	2016-17	2017-18	2018-19
Bird nest related (a)	149 (59%)	143 (50%)	168 (55%)	260 (60%)	268 (53%)
Other matters (b)	104 (41%)	141 (50%)	138 (45%)	175 (40%)	241 (47%)
Total (c)=(a)+(b)	253 (100%)	284 (100%)	306 (100%)	435 (100%)	509 (100%)

Source: Audit analysis of AFCD records

Publicity, prosecution and other administrative issues

4.15 Although a large proportion of complaints about wild birds were related to bird nests, records did not indicate that information about handling bird nests had been included in AFCD's publicity and educational programmes.

4.16 Audit considers that AFCD needs to enhance its publicity and educational programmes to better meet the demand for information on wild birds (e.g. the proper ways to handle bird nests).

Audit recommendations

4.17 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) **take appropriate measures to step up AFCD's effort in the provision of school talks and public seminars;**
- (b) **ensure that banners are displayed at animal nuisance blackspots and animal congregation spots in a timely manner to publicise information about control of animal nuisances; and**
- (c) **enhance AFCD's publicity and educational programmes to better meet the demand for information on wild birds.**

Response from the Government

4.18 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

Prosecutions of related offences

4.19 In the course of controlling wild and stray animal nuisances, AFCD may find people violating laws, such as those relating to conservation of wild animals, abandoning animals and keeping dogs:

- (a) ***Feeding wild animals.*** Under the Wild Animals Protection Ordinance, feeding of wild animals in Feeding Ban Area without the required permission is prohibited (see para. 1.8);
- (b) ***Abandoning animals.*** Animals which are abandoned may become stray animals. Under the Rabies Ordinance (Cap. 421), a keeper of any animal who, without reasonable excuses, abandons the animal commits an offence;
- (c) ***Keeping dogs without licences.*** For stray dogs which did not have valid licences, AFCD sometimes successfully found their keepers. Under the Rabies Regulation (Cap. 421A), anyone who keeps a dog over the age of 5 months without a valid licence commits an offence; and
- (d) ***Controlling dogs improperly.*** Dogs which are controlled improperly may go astray and cause nuisances. Under both the Rabies Ordinance and Dangerous Dogs Regulation (Cap. 167D), improper control of dogs is an offence (Note 44).

AFCD has laid down guidelines on instigating prosecutions of people who have violated the law. Table 14 shows the prosecutions which AFCD had instigated for the period 2014-15 to 2018-19.

Note 44: *Under the Rabies Ordinance, where a dog is found in a public place which is not on a leash or under control, its keeper and anyone who causes, suffers or permits the dog to be in that place shall each be guilty of an offence. Under the Dangerous Dogs Regulation, any person who causes, suffers or permits a large dog (i.e. 20 kilograms or above) to enter or remain in a public place (other than in a country park or swimming at sea) commits an offence, unless the dog is securely held on a leash of not more than 2 metres in length or is securely tied to a fixed object on a leash of not more than 1.5 metres.*

Table 14

**Prosecutions relating to the control of wild and stray animal nuisances
(as at 31 August 2019)**

Year	No. of prosecution cases	
	Relating to wild animal nuisances (Note 1)	Relating to stray animal nuisances (Note 2)
2014-15	58	753
2015-16	72	654
2016-17	62	612
2017-18	31	467
2018-19	25 (Note 3)	396

Source: AFCD records

Note 1: The figures were the prosecution cases on offences occurred in the year.

Note 2: The figures were the cases with prosecution actions taken in the year.

Note 3: According to AFCD records, as at 31 August 2019, there were another 2 cases where the alleged offence was committed in 2018-19 but pending AFCD's prosecution actions.

Need for timely prosecution action

4.20 According to the Magistrates Ordinance (Cap. 227), prosecution action should be taken within 6 months from the date of offence (i.e. time-barred after 6 months — Note 45). Audit examined the 31 prosecution cases which AFCD withdrew in 2014-15 to 2018-19 and found that in 2 cases, prosecutions were time-barred and hence AFCD had not instigated any prosecutions. Case 2 shows one of these two cases.

Note 45: *According to the Magistrates Ordinance, in any case of an offence, other than an indictable offence, where no time is limited by any enactment for making any complaint or laying any information in respect of such offence, such complaint shall be made or such information laid within 6 months from the time when the matter of such complaint or information respectively arose.*

Case 2

Offence case not proceeded after the time-bar period
(May to November 2016)

1. On 17 May 2016, an AFCD Senior Field Assistant found Person A feeding monkeys within Feeding Ban Area without the permit required by law (see Note 5 to para. 1.8). AFCD took the following actions to prosecute Person A for illegal feeding of wild animals:

Date	Action	Section involved
18 May 2016	The Senior Field Assistant completed a witness statement.	Wetland and Fauna Conservation Division under CB
29 June 2016	The witness statement and relevant documents were submitted to senior officers for approval.	
29 July 2016 and 1 August 2016	Two senior officers gave approval respectively for the prosecution of Person A.	
21 November 2016	Person A's case was passed to AFCD's Prosecution Unit for prosecution.	Prosecution Unit under IQB

2. According to the Magistrates Ordinance, the case was time-barred on 16 November 2016 (i.e. 6 months after 17 May 2016). In the event, AFCD had not instigated any prosecutions.

3. AFCD records did not indicate the reasons for the prolonged actions in processing the case.

Audit comments

4. AFCD had not taken timely actions to instigate prosecutions at the court before it was time-barred. The reasons for the prolonged actions had not been recorded.

Source: Audit analysis of AFCD records

4.21 Audit considers that AFCD needs to ensure that timely actions are taken to instigate prosecutions of offences, and that the reasons for any prolonged actions in taking forward prosecution cases are adequately recorded for supervisory review.

Audit recommendations

4.22 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) ensure that timely actions are taken to instigate prosecutions of offences relating to the control of animal nuisances at the court; and
- (b) require AFCD staff to adequately record the reasons for any prolonged actions in taking forward prosecution cases for supervisory review.

Response from the Government

4.23 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

Other administrative issues

Need to enhance coordination with relevant departments on animal feeding matters

4.24 For cases of feeding of wild animals outside Feeding Ban Area and feeding of pigeons (Note 46), the Wild Animals Protection Ordinance is not applicable. Any prosecutions of such cases can only be instigated as follows:

- (a) if the feeding activities lead to environmental hygiene problems, authorised officers of relevant bureaux and departments (e.g. FEHD for public places and LCSD for premises managed by LCSD) may issue fixed penalty notices

Note 46: *According to AFCD, the Wild Animals Protection Ordinance is not applicable to pigeon.*

of \$1,500 under the Fixed Penalty (Public Cleanliness and Obstruction) Ordinance (Cap. 570); and

- (b) if the feeding activities take place in premises managed by LCSD, LCSD officers may instigate prosecutions under the Pleasure Grounds Regulation (Cap. 132BC) (Note 47).

4.25 AFCD has maintained lists of nuisance blackspots caused by monkey and wild pig feeding, and a list of pigeon congregation spots (see para. 4.9). Audit noted that AFCD had provided LCSD with banners and posters for displaying in some of the spots on the lists to propagate information on the impacts of feeding monkeys, wild pigs and pigeons. However, AFCD has not shared the lists with the responsible departments.

4.26 In Audit's view, sharing the lists of monkey and wild pig feeding blackspots and pigeon congregation spots with other responsible departments (i.e. FEHD and LCSD) could facilitate their monitoring and prosecutions of any improper animal feeding activities which might violate the law.

Need to enhance practices on surveillance of African Swine Fever

4.27 African Swine Fever (ASF) is a highly contagious viral disease that affects pigs of all ages. According to AFCD, wild pigs are susceptible to ASF. Wild pigs infected with ASF could potentially spread the virus across the territory.

4.28 According to AFCD's surveillance plan on ASF:

- (a) upon receiving the report of unexplained death of a wild pig (excluding death caused by road-kill) or a sick wild pig, AFCD officers will inspect the wild pig on site and determine if there are suspected signs of ASF infection; and

Note 47: *Under the Pleasure Grounds Regulation, no person shall in any pleasure ground feed or attempt to feed any animal, bird or fish kept or found in the venue. Offenders are liable to a fine of \$2,000 and 14 days imprisonment.*

- (b) once a wild pig with suspected signs of ASF infection is identified, samples from the live wild pig or wild pig carcass will be collected for ASF testing (Note 48).

4.29 Upon enquiry, AFCD informed Audit in May and June 2019 that:

- (a) routine disposal of dead wild pigs in public places was handled by FEHD directly and the presence of AFCD officers had not been required;
- (b) information on wild pig carcasses disposed of (e.g. the number of carcasses collected) was maintained by FEHD. The information had not been shared with AFCD on a regular basis; and
- (c) up to June 2019, no live or dead wild pigs had been tested for ASF by AFCD.

4.30 In September and October 2019, AFCD further informed Audit that:

- (a) AFCD had obtained from FEHD information on wild pig carcasses disposed of (Note 49); and
- (b) a pilot programme for further enhancing the surveillance of ASF in local wild pigs (i.e. in local wild pig carcasses) within a designated trial area had been agreed with FEHD. According to the pilot enhancement programme:
 - (i) routine testing of ASF would be conducted on wild pig carcasses found within the designated trial area during working hours, taking into account relevant factors (i.e. number of wild pig carcasses collected by FEHD, capacity of AFCD Veterinary Laboratory, and suitability of carcass condition for testing);

Note 48: *For testing of ASF on a dead wild pig, tissue and organ samples would be collected for testing. For testing of ASF on a live wild pig, blood samples would be collected for testing.*

Note 49: *Upon AFCD's request in June 2019, FEHD informed AFCD that the number of wild pig carcasses disposed of in 2018 was 249.*

- (ii) FEHD would perform initial screening on the condition of the wild pig carcasses discovered, and notify AFCD of the basic information (e.g. location and time of discovering). Suitable carcasses would be delivered to AFCD where appropriate; and
- (iii) the pilot enhancement programme would run between November 2019 and January 2020 (i.e. 3 months). Subject to reviews and modifications, AFCD would roll out a surveillance programme for ASF in local wild pigs later.

4.31 In Audit's view, under the previous practice (see paras. 4.28 and 4.29), AFCD did not have sufficient information for monitoring ASF on wild pigs. Audit considers that AFCD needs to strengthen liaison with FEHD, with a view to implementing the pilot enhancement programme within the time frame intended. AFCD also needs to keep under review the implementation of the pilot enhancement programme, and ensure that the surveillance programme for ASF in local wild pigs is updated with enhancements in a timely manner where appropriate.

Audit recommendations

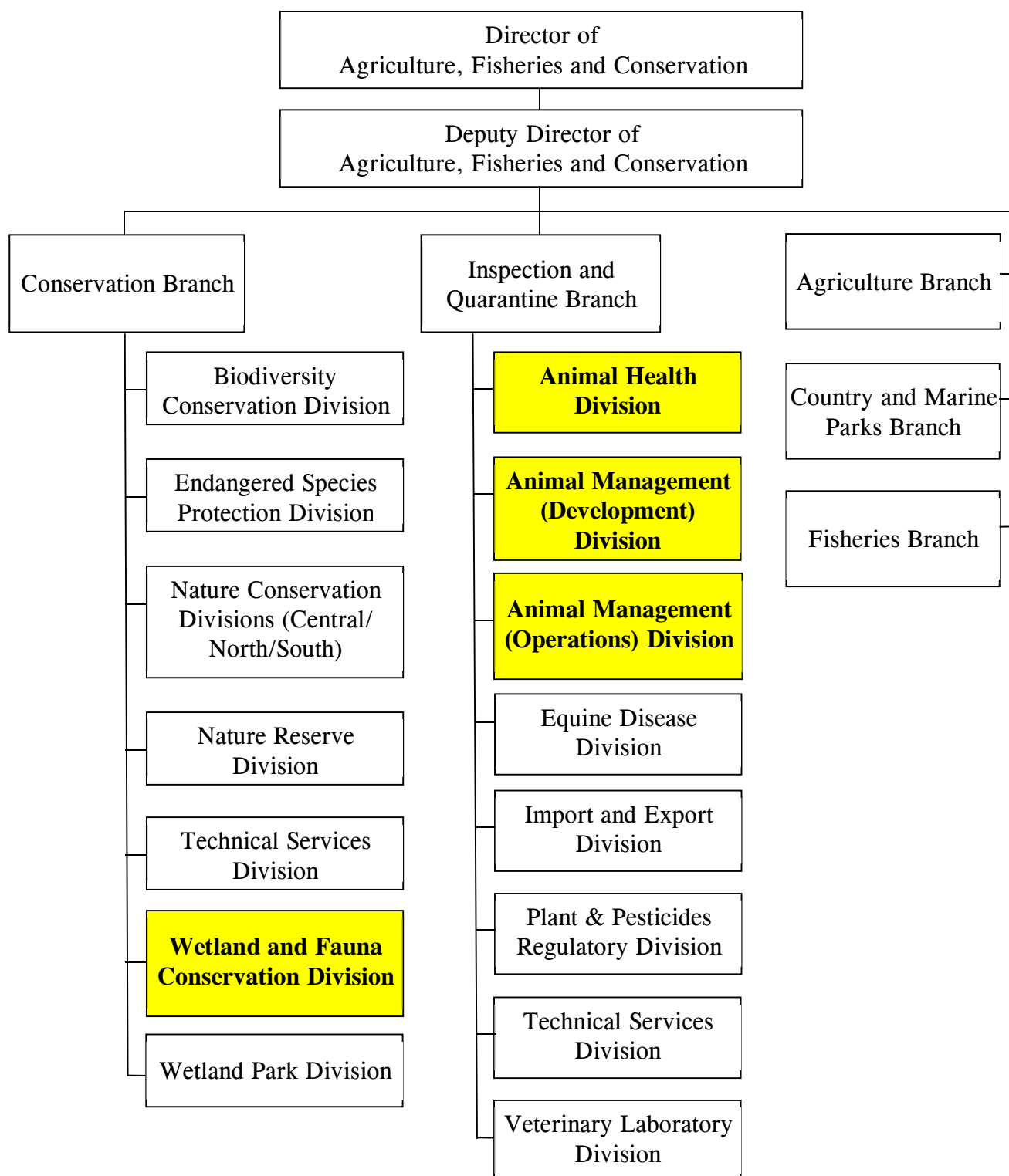
4.32 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **share the lists of monkey and wild pig feeding blackspots and pigeon congregation spots with other responsible departments to facilitate their monitoring and prosecutions of improper animal feeding activities;**
- (b) **strengthen liaison with FEHD, with a view to implementing the pilot programme for enhancing surveillance of ASF in local wild pigs as intended; and**
- (c) **keep under review the implementation of the pilot programme for enhancing surveillance of ASF in local wild pigs, and ensure that the surveillance programme for ASF in local wild pigs is updated with enhancements in a timely manner where appropriate.**

Response from the Government

4.33 The Director of Agriculture, Fisheries and Conservation generally agrees with the audit recommendations.

**Agriculture, Fisheries and Conservation Department:
Organisation chart (extract)
(31 March 2019)**



Legend: Divisions with staff involved in control of wild and stray animal nuisances

Source: AFCD records

Acronyms and abbreviations

AFCD	Agriculture, Fisheries and Conservation Department
AMC	Animal Management Centre
ASF	African Swine Fever
Audit	Audit Commission
AWO	Animal welfare organisation
CB	Conservation Branch
CCRP	Wild pig capture and contraception/relocation programme
FEHD	Food and Environmental Hygiene Department
IQB	Inspection and Quarantine Branch
LCSD	Leisure and Cultural Services Department
LegCo	Legislative Council
TNR	Trap-Neuter-Return

CHAPTER 5

**Education Bureau
Labour and Welfare Bureau
Social Welfare Department**

Special education

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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SPECIAL EDUCATION

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.3
Special schools	1.4 – 1.10
Audit review	1.11 – 1.12
General response from the Government	1.13
Acknowledgement	1.14
PART 2: PROVISION AND MANAGEMENT OF SCHOOL PLACES AND BOARDING PLACES	2.1
Provision and management of school places	2.2 – 2.13
Audit recommendations	2.14
Response from the Government	2.15
Provision and management of boarding places	2.16 – 2.32
Audit recommendations	2.33 – 2.34
Response from the Government	2.35 – 2.36
PART 3: STAFFING OF SPECIAL SCHOOLS	3.1
Wastage of special school teachers	3.2 – 3.4
Audit recommendation	3.5
Response from the Government	3.6

	Paragraph
Unfilled posts of specialist staff and non-specialist staff	3.7 – 3.13
Audit recommendations	3.14
Response from the Government	3.15
Professional training for special school teachers	3.16 – 3.24
Audit recommendations	3.25
Response from the Government	3.26
PART 4: GRANTS AND SUPPORT FOR SPECIAL EDUCATION	4.1
Tripartite Model of Support	4.2 – 4.5
Audit recommendations	4.6
Response from the Government	4.7
Grants provided to cater for special school students with medical complexity	4.8 – 4.14
Audit recommendation	4.15
Response from the Government	4.16
Funding support for meeting recurrent expenses on furniture and equipment	4.17 – 4.20
Audit recommendations	4.21
Response from the Government	4.22
School leaving arrangements for special school students	4.23 – 4.27
Audit recommendation	4.28
Response from the Government	4.29 – 4.30

Appendices	Page
A : Teacher-to-student ratios for special schools (2018/19)	81
B : EDB's Special Education Division: Organisation chart (extract) (30 June 2019)	82
C : Acronyms and abbreviations	83

SPECIAL EDUCATION

Executive Summary

1. Special Educational Needs (SEN) refer to the needs of students arising from various types of disabilities. The Education Bureau (EDB) classifies SEN into nine types, namely: (a) visual impairment (VI); (b) hearing impairment (HI); (c) physical disability (PD); (d) intellectual disability (ID); (e) specific learning difficulties; (f) attention deficit/hyperactivity disorder; (g) autism spectrum disorders; (h) speech and language impairment; and (i) mental illness. The Government adopts a dual-track mode in implementing special education. Children with more severe or multiple disabilities are placed in special schools for intensive support, subject to the assessment and recommendation of the specialists and with parents' consent. Other children with SEN who can participate in learning and daily activities in ordinary schools receive integrated education in ordinary schools.

2. Aided special schools receive subvention from EDB under the Code of Aid for Special Schools or Code of Aid for Aided Schools. They fall into six types, namely: (a) school for children with VI; (b) school for children with HI; (c) school for children with PD; (d) school for children with ID (schools for children with ID are further classified into schools for children with mild intellectual disability (MiID), schools for children with moderate intellectual disability (MoID) and schools for children with severe intellectual disability (SID)); (e) school for social development (SSD); and (f) Hospital School. Some special schools are provided with boarding facilities to cater for the long-term residential needs of students with severe disabilities and to facilitate them to receive school education during school days.

3. In school year 2018/19, there were 60 aided special schools and boarding services were provided in 28 of them (unless otherwise specified: (a) all years mentioned hereinafter refer to school years; and (b) the figures mentioned for a school year refer to the position as at 15 September of the respective school year). Of the 28 schools, 7 were SSDs and the boarding services for SSD students were provided by residential homes subvented by and under the purview of the Social Welfare Department (SWD). The boarding sections of the remaining 21 schools were subvented by and under the purview of EDB.

Executive Summary

4. In 2018/19, there were 7,939 students enrolled in the 60 special schools, comprising 3,783 primary school students and 4,156 secondary school students. Majority of the students enrolled in special schools were students with ID (including MiID, MoID or SID). Special Education is one of the programme areas of EDB. The amount of expenditure on the programme area increased by \$701.9 million (35%) from \$2,010.8 million in financial year 2014-15 to \$2,712.7 million in financial year 2018-19. The resources and support provided for special education include staffing (comprising teaching staff, specialist staff and non-specialist staff), professional development of staff, and various grants and support. Two Special Education Support Sections under the Special Education Division of EDB are responsible for special education services. The Audit Commission (Audit) has recently conducted a review of EDB's work in the implementation of special education and SWD's work in connection with special education.

Provision and management of school places and boarding places

5. *Not all regions provided with all types of special school places.* Except for the Hospital School, EDB provides special school places either on a regional basis (a total of seven regions) or on a territory-wide basis. Audit reviewed the school places provided on a regional basis (i.e. the 7 schools for children with PD and the 41 schools for children with ID) and found that: (a) the Outlying Islands region did not have schools for children with PD and children with ID; and (b) the Sha Tin and Sai Kung region (excluding Tseung Kwan O) did not have schools for children with SID (paras. 2.2 and 2.3).

6. *Need to take measures to address the under-enrolment in some schools.* The enrolment in SSDs was not high in 2016/17, 2017/18 and 2018/19. The overall enrolment rates of the eight SSDs were 51%, 53% and 57% respectively. In 2018/19, the enrolment rates of each of the eight SSDs ranged from 40% to 74% (paras. 2.5 and 2.7).

7. *Need to adopt more flexibility in placement arrangements for school-age students with ID and students with PD.* The placement arrangements for school-age students (i.e. students other than upcoming Primary One students) with ID and students with PD are more restrictive: (a) upcoming Primary One students with ID can apply for any school in the territory. However, school-age students with ID can only apply for a school whose Primary Catchment Area or Extended Catchment Area

Executive Summary

covers their residence; and (b) unlike the placement arrangements for upcoming Primary One students with SID which allow applications for any school in the territory, students with PD can only apply for a school whose catchment area covers their residence. However, for the provision of boarding places, EDB considers that both students with SID and students with PD have mobility problems and therefore, parents of students with SID or PD are subject to the same application restriction (para. 2.10).

8. ***Need to review reasons for prolonged enrolment of SSD students.*** SSDs aim to provide more intensive guidance to students so that they may reintegrate into ordinary schools as soon as possible. The short-term adjustment programme is implemented for students who are expected to be able to be discharged after receiving services at SSDs for three months to one year. For students not under the short-term adjustment programme, most students are expected to be able to achieve notable improvement and leave SSDs within two school years. Audit analysed the periods of stay in SSDs (between admission and discharge) for the students discharged from SSDs in the period from 2013/14 to 2017/18 and found that: (a) on average 41% of the students (ranging from 27% to 52%) under the short-term adjustment programme stayed in the schools for more than one year, and the longest period of stay (for one student discharged in 2013/14) was 3 years and 8 months; and (b) on average 46% of the students (ranging from 34% to 58%) not under the short-term adjustment programme stayed in the schools for more than two years, and the longest period of stay (for one student discharged in 2015/16) was 7 years (paras. 2.12 and 2.13).

9. ***Need to explore ways to rationalise boarding places for students with SID.*** Audit analysed the vacancy and waiting situation of boarding places in schools for children with SID and noted that as at 15 September 2018: (a) notwithstanding that there were 26 students waiting for seven-day boarding service, there were 40 vacant places for five-day boarding service; and (b) under the existing mechanism, applicants could only apply for either five-day boarding places or seven-day boarding places. Applicants awaiting seven-day boarding places would not be allocated five-day boarding places as a stopgap measure to partially meet their boarding needs before seven-day boarding places were available for them (para. 2.19).

10. ***Need to further increase the supply of new boarding places.*** As at 15 June 2019, there were 132 students with MoID waiting for boarding places (28 for five-day boarding service and 104 for seven-day boarding service). Audit noted that 8 (29%) of the 28 students awaiting five-day boarding service had been waiting for

Executive Summary

more than 1 year (the longest was 5 years and 10 months) and 65 (63%) of the 104 students awaiting seven-day boarding service had been waiting for more than 1 year (the longest was 3 years and 9 months). According to EDB's latest projection on the supply and demand of boarding places for students with MoID: (a) a significant level of shortfall of boarding places would persist in 2019/20 and 2020/21. The projected numbers of shortfall of boarding places were 161 places in 2019/20 and 125 places in 2020/21; and (b) notwithstanding that the shortfall of boarding places would improve from 161 places in 2019/20 to 29 places in 2025/26, there would still be a shortfall of boarding places throughout the projection period of seven school years (paras. 2.21, 2.22 and 2.25).

11. ***Need to explore ways to make good use of boarding places in SSDs.*** Each SSD and its residential home only admit students of a single gender. The utilisation of boarding places in SSDs for girls decreased from 73% in 2014/15 to 43% in 2018/19, and the number of vacant boarding places for girls increased from 55 in 2014/15 to 153 in 2018/19 (para. 2.26).

12. ***Need to provide assistance to special schools in reviewing the boarding needs of existing boarders.*** EDB entrusted special schools to ensure that boarding places were released by students who no longer have boarding needs, making such boarding places available for students with the most genuine needs. While special schools had developed their own school-based guidelines for conducting regular reviews of boarding needs of existing boarders, the schools expressed difficulties in conducting the reviews. EDB did not have information on the number of boarding places that were made available as a result of the regular reviews conducted by schools (para. 2.29).

13. ***Need to consider adopting more flexibility in placement arrangements of seven-day boarding service for students with SID or PD.*** EDB maintains a central queue for seven-day boarding service. Parents are required to indicate their preference on schools. For parents of a student with SID or PD, if they specify a particular school, they can only specify a school whose catchment area covers their residence. However, if they have no preference on a particular school, the student will be offered a boarding place as soon as it is available from any school regardless of the student's residential address. EDB needs to consider adopting more flexibility in the placement arrangements of seven-day boarding service for students with SID and students with PD (paras. 2.30 and 2.31).

Staffing of special schools

14. ***Need to closely monitor wastage rate of special school teachers.*** EDB defines the wastage rate of teachers in special schools as the number of drop-out teachers as a percentage of the total number of teachers in special schools in the preceding school year. Audit found that in the period from 2014/15 to 2018/19: (a) the wastage rate of teachers in special schools was higher than that for teachers in ordinary schools; and (b) the wastage rate of teachers in special schools had increased significantly from 6.8% in 2014/15 to 8.5% in 2018/19 (paras. 3.2 and 3.3).

15. ***Difficulties in filling posts of occupational therapists and physiotherapists.*** In 2018/19, the establishment of specialist staff for the 60 special schools was 1,181 staff. Among the various types of specialist staff, it was particularly difficult to have all occupational therapist (OT) and physiotherapist (PT) posts filled. To alleviate the recruitment difficulties, EDB allows special schools to freeze the unfilled posts of OTs and PTs in return for cash grants for hiring short-term or part-time occupational therapy and physiotherapy services. Audit found that the vacancy situation of OTs and PTs in the period from 2014/15 to 2018/19 remained serious after some of the posts had been frozen: (a) the average number of unfilled posts as a percentage of the establishment was 37% (ranging from 22% to 49%) for OTs and 44% (ranging from 39% to 48%) for PTs; and (b) after freezing some unfilled posts, the average percentage of vacant posts remained as high as 13% (ranging from 8% to 17%) for OTs and 15% (ranging from 10% to 22%) for PTs (paras. 3.8 and 3.9).

16. ***High vacancy of some types of non-specialist staff.*** In 2018/19, the establishment of non-specialist staff was 792 staff. High vacancy rates existed in four types of non-specialist staff, namely teacher assistants (18%), cooks (16%), workshop attendants (15%) and watchmen (12%). Audit analysed the vacancy rates of these four types of non-specialist staff for the period from 2014/15 to 2018/19 and found that the vacancy rates of three of the four types of non-specialist staff (i.e. except watchmen) had shown an increasing trend since 2016/17 (paras. 3.11 to 3.13).

17. ***Need to monitor the attainment of teacher training target.*** In 2018/19, after consulting the special school sector, EDB set a teacher training target for all special schools, namely by the end of 2022/23, each special school should have 85% to 100% of its teachers having completed specified special education training (SET).

Executive Summary

Audit found that: (a) EDB recognised teachers in special schools who had completed structured training courses that were equivalent to the Training Course for Special School Teachers (TCSST) as teachers who had completed SET. However, EDB had not promulgated the recognition criteria to help teachers and principals understand whether the courses attended by teachers were equivalent to TCSST; and (b) individual schools did not know the percentage of their teachers who had completed SET (paras. 3.18 and 3.19).

18. ***Need to increase the number of training places of TCSST.*** In view of the different educational needs of students enrolled in special schools, TCSST specifically offered to special school teachers has been launched since 2012/13 and 40 training places have been provided by EDB each year. The feedback on TCSST from the special school sector was good and positive, and all the 40 training places were fully enrolled in 2018/19. To facilitate special schools in achieving the teacher training target of 85% to 100% by 2022/23, EDB needs to keep in view the adequacy of TCSST training places and increase the number of places where necessary (paras. 3.17, 3.20 and 3.21).

19. ***Decreasing percentage of special school teachers with special education training qualification.*** The percentage of teachers in special schools with special education training qualification is one of the key performance measures in EDB's Controlling Officer's Report. Audit found that: (a) the percentage increased from 73.4% in 2014/15 to 75% in 2016/17 and then decreased to 70.5% in 2018/19; and (b) of the 60 special schools in 2018/19, 7 (11.6%) schools had less than half of the teachers with special education training qualification (paras. 3.22 and 3.23).

Grants and support for special education

20. ***Need to encourage participation in sharing sessions.*** Since 2009/10, EDB has adopted the Tripartite Model of Support (TMS) to enhance the communication and collaboration with special schools as well as strengthen professional development of teachers. Since 2016/17, EDB has arranged a sharing session for special schools after conducting theme-based visits to schools. In the period from 2016/17 to 2018/19, four sharing sessions were held. Audit found that the percentage of special schools participating in the sharing sessions was not high, ranging from 45.9% to 70.0% and averaging 54.4% (paras. 4.2 and 4.3).

Executive Summary

21. ***Need to ensure that the amount of support grant is adequate to meet the needs of special schools.*** The Additional Support Grant for Day Students and Day Students cum Boarders with Medical Complexity (hereinafter referred to as Day MC Grant) was launched in 2017/18. Special schools can use the Day MC Grant for employing additional staff such as health care workers, procuring health care services or arranging staff training. The suspected students with medical complexity (MC) are put up by special schools. The medical assessment for paediatric cases of suspected students with MC is conducted by the Hospital Authority (HA) and arranged through EDB. Audit found that: (a) not all the suspected cases initially reported by schools were assessed; and (b) the arrangement with HA for conducting medical assessments was a one-off ad hoc task. The processing of the Day MC Grant will be seriously affected should HA cease to conduct medical assessments on paediatric cases of suspected day students with MC (paras. 4.9 to 4.11 and 4.14).

22. ***Inconsistent provision of funding support for furniture and equipment (F&E) procured using different funding sources.*** Some F&E items such as ceiling hoist would greatly enhance the special schools' support provided to children with MC. Audit reviewed the funding support for ceiling hoist and noted inconsistent provision of funding support by EDB to existing special schools and a new special school for children with ID. While the new special school could use its block grant to fully cover the recurrent cost of ceiling hoists, the existing special schools could use the surplus of their block grant to cover no more than 25% of the recurrent cost of ceiling hoists that they acquired through their own funding sources (paras. 4.19 and 4.20).

23. ***Need to provide more assistance to students in school leaving arrangements.*** Special school leavers mainly have the following school leaving arrangements: (a) employment in open market; (b) further studies; (c) vocational training; (d) vocational rehabilitation services; (e) day training or care services; and (f) other arrangements (e.g. staying at home). In the period from 2013/14 to 2017/18, significant percentages of special school leavers who had applied for vocational rehabilitation services and day training or care services were on the waiting lists (ranging from 13.2% to 38.0% and 13.3% to 64.7% respectively). Moreover, Audit examined the reasons for special school students to extend their years of study for the period from 2013/14 to 2017/18 and found that in each of the five years, 42.7% to 56.8% (averaging 48.6%) of students had their years of study extended by schools after their difficulties in school leaving arrangements were taken into account (paras. 4.23, 4.25 and 4.26).

Executive Summary

Audit recommendations

24. Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Secretary for Education should:

Provision and management of school places and boarding places

- (a) consider expanding the scope of target students of special schools as far as practicable so that children with PD in the Outlying Islands region and children with SID in the Sha Tin and Sai Kung region can be better catered for in their own regions (para. 2.14(b));
- (b) take measures to address the issue of low enrolment of students in SSDs (para. 2.14(c));
- (c) consider adopting more flexibility in the placement arrangements for school-age students with ID and students with PD (para. 2.14(d));
- (d) review the reasons why more than 40% of students, on average, stayed in SSDs beyond the expected timeframe (para. 2.14(e));
- (e) ascertain whether more guidance and advice should be given to referrers of SSDs so that they can better identify students suitable for the short-term adjustment programme (para. 2.14(f));
- (f) explore the feasibility of implementing measures with a view to making more efficient use of the boarding places and shortening the waiting time for seven-day boarding places in schools for children with SID (para. 2.33(a));
- (g) step up EDB's efforts in exploring effective measures to increase the supply of new boarding places with a view to shortening the waiting time of students with MoID for boarding services (para. 2.33(b));
- (h) provide assistance to special schools in reviewing the boarding needs of existing boarders (para. 2.33(c));

Executive Summary

- (i) **consider adopting more flexibility in the placement arrangements of seven-day boarding service (para. 2.33(d));**

Staffing of special schools

- (j) **explore appropriate measures to address the relatively higher wastage rate of special school teachers (para. 3.5);**
- (k) **take measures to address the difficulties faced by special schools in filling OT and PT posts (para. 3.14(a));**
- (l) **monitor the vacancy situation of non-specialist staff in special schools (para. 3.14(b));**
- (m) **promulgate the recognition criteria of training courses that are equivalent to TCSST (para. 3.25(a));**
- (n) **regularly ascertain the percentage of teachers who have completed SET in each special school and monitor the progress of attaining the target of 85% to 100% by 2022/23, and increase the number of TCSST training places where necessary (para. 3.25(b) and (c));**
- (o) **take measures to increase the percentage of special school teachers with special education training qualification (para. 3.25(d));**

Grants and support for special education

- (p) **take appropriate measures to encourage special schools' participation in sharing sessions under Cross-Sector Communication of TMS (para. 4.6(a));**
- (q) **in collaboration with the Chief Executive of HA, take measures to ensure that special schools are provided with Day MC Grant that can adequately meet their needs (para. 4.15); and**

Executive Summary

- (r) consider ways to support special schools which had acquired F&E items through their own funding sources that were not in the schools' F&E list but were subsequently included in the F&E list of new special schools (para. 4.21(b)).

25. Audit has *recommended* that the Director of Social Welfare should keep in view the utilisation of boarding places in residential homes of SSDs and continue to take measures to make good use of the vacant boarding places where appropriate (para. 2.34).

26. Audit has also *recommended* that the Secretary for Education and the Director of Social Welfare should, in collaboration with other stakeholders, provide more assistance to special school students in their school leaving arrangements (para. 4.28).

Response from the Government

27. The Secretary for Education and the Director of Social Welfare agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 Special Educational Needs (SEN) refer to the needs of students arising from various types of disabilities. The Education Bureau (EDB) classifies SEN into nine types:

- (a) visual impairment (VI);
- (b) hearing impairment (HI);
- (c) physical disability (PD);
- (d) intellectual disability (ID);
- (e) specific learning difficulties;
- (f) attention deficit/hyperactivity disorder;
- (g) autism spectrum disorders;
- (h) speech and language impairment; and
- (i) mental illness.

1.3 The Government adopts a dual-track mode in implementing special education. Under the dual-track mode:

- (a) children with more severe or multiple disabilities whose support needs cannot be adequately catered for in a general education setting and who

Introduction

need to pursue an adapted or modified curriculum or receive specialised intervention whilst pursuing an ordinary curriculum are placed in special schools for intensive support, subject to the assessment and recommendations of the specialists and with parents' consent. These children include:

- (i) children with ID who display marked difficulty in cognition and adaptive skills. They need to follow a modified curriculum and receive professional support from specialists; and
- (ii) children with VI, HI or PD who need to receive specialised intervention. For instance, children with VI who suffer from moderate low vision or below will display marked difficulty in pursuing ordinary curriculum even if they have average intellectual functioning. They need to receive specialised intervention such as learning braille and receiving orientation and mobility training.

In the school year 2018/19, there were 7,939 students enrolled in special schools, comprising 3,783 primary school students and 4,156 secondary school students (see paras. 1.7 and 1.8) (Note 1); and

- (b) other children with SEN who can participate in learning and daily activities in ordinary schools through having accommodation in teaching, curriculum and assessment receive integrated education in ordinary schools so that they can interact with ordinary children and benefit from mainstream education. These children include:
 - (i) children with specific learning difficulties, attention deficit/hyperactivity disorder, autism spectrum disorders, speech and language impairment, or mental illness; and
 - (ii) children with VI, HI, PD or ID who have less severe disabilities.

Note 1: *Unless otherwise specified: (a) all years mentioned in this Audit Report refer to school years, which start on 1 September and end on 31 August of the following year; and (b) the figures mentioned for a school year refer to the position as at 15 September of the respective school year.*

Majority of the students receiving integrated education in ordinary schools are children with specific learning difficulties, attention deficit/hyperactivity disorder, autism spectrum disorders, or speech and language impairment. In 2018/19, there were 46,090 such children, representing about 94% of the 49,080 children with SEN studying in public sector ordinary schools.

Special schools

Types of special schools

1.4 Aided special schools (Note 2) receive subvention from EDB under the Code of Aid for Special Schools or Code of Aid for Aided Schools. They fall into six types:

- (a) ***School for children with VI.*** VI refers to the vision of the better eye which, even with eyeglasses or corrective surgery, cannot be corrected to the normal level. Ophthalmologists will classify an individual as having mild low vision, moderate low vision, severe low vision or total blindness according to his or her visual acuity, visual field and other contributing factors. EDB will place children with moderate low vision or below to schools for children with VI;
- (b) ***School for children with HI.*** HI refers to a disorder in any part of the auditory system that affects the hearing ability, and thus affects the speech and communication abilities of an individual. HI is classified into five degrees, namely Mild, Moderate, Moderately Severe, Severe, and Profound. EDB will place children with Severe or Profound HI or those who cannot construct knowledge because of inadequate speech abilities due to HI to the school for children with HI;

Note 2: *In addition to the aided special schools, there is one special school operated by the English Schools Foundation established under the English Schools Foundation Ordinance (Cap. 1117). The Ordinance empowers the Foundation to make regulations for matters including the internal management, operation, administration and control of the school. This review did not cover this special school.*

Introduction

- (c) ***School for children with PD.*** PD refers to the disability caused by diseases of central and peripheral neurological systems, traumas or other congenital diseases of the musculoskeletal systems, which leads to hindrance or limitations in one or more aspects in daily living. Examples of PD include cerebral palsy, spina bifida and muscular dystrophy. Subject to the assessment and recommendations of medical experts, EDB will place children with more severe PD or multiple disabilities to schools for children with PD;

- (d) ***School for children with ID.*** ID refers to significantly sub-average intellectual ability accompanied by marked limitations in learning and adapting to life. Compared with peers of the same age, children with ID generally show difficulties in areas including cognition, memory, attention, language, perceptual motor, and adaptive skills. Schools for children with ID are classified into three types:
 - (i) schools for children with mild intellectual disability (MiID);
 - (ii) schools for children with moderate intellectual disability (MoID);
and
 - (iii) schools for children with severe intellectual disability (SiID).

EDB will place children with various degrees of ID into the respective types of schools;

- (e) ***School for social development (SSD).*** SSDs are set up to provide education for students with moderate to severe emotional and behavioural problems. Apart from the formal curriculum, SSDs also provide counselling service to help the students overcome their emotional and behavioural problems so that they can integrate into mainstream schools as soon as possible. EDB and the Social Welfare Department (SWD) jointly manage the Central Co-ordinating Referral Mechanism (CCRM) to assess the needs of the students for placement in SSDs and make referral where appropriate. CCRM consists of the relevant professionals, including social workers, inspectors of referral and placement team, educational counsellors and educational psychologists; and

- (f) ***Hospital School.*** The Hospital School operates classes at public hospitals and the School provides education (Primary 1 to Secondary 6) to hospitalised school-age children starting from 5 years 8 months, i.e. minimum age for Primary One students. The students can be admitted on the third day of their hospitalisation. They have lessons either in classrooms or at wards. Those who are less mobile or having special health conditions receive individual bedside teaching. Students who are homebound can continue their education by the School's Home-based Teaching Program through the referral by EDB.

Some special schools are provided with boarding facilities for students. The objective of providing boarding facilities in special schools is to cater for the long-term residential needs of students with severe disabilities and to facilitate them to receive school education during school days. Two types of boarding services, namely five-day boarding service and seven-day boarding service, are provided to students. Boarding services for SSD students are provided by residential homes subvented by and under the purview of SWD. The boarding sections of other types of special schools are subvented by and under the purview of EDB. In 2018/19, there were 60 aided special schools and boarding services were provided in 28 of them. Table 1 shows the number of special schools by types and the number of special schools with a boarding section in 2018/19.

Introduction

Table 1

**Number of special schools analysed by types and
number of special schools providing boarding services
(2018/19)**

School type	No. of schools	No. of schools providing boarding services			
		Five-day boarding service only (a)	Seven-day boarding service only (b)	Both types of boarding services (c)	Total (d) = (a) + (b) + (c)
School for children with VI	2	0	0	2	2
School for children with HI	1	0	1	0	1
School for children with PD	7	0	0	4	4
School for children with ID					
— MiID	12	0	0	0	0
— MoID	14	2	0	2	4
— MiID and MoID (Note 1)	5	0	0	1	1
— SID	10	4	0	5	9
SSD (Note 2)	8	0	7	0	7
Hospital School (Note 3)	1	Not applicable			
Total	60	6	8	14	28

Source: EDB records

Note 1: There were five special schools that admitted both children with MiID and children with MoID. Therefore, there were 17 (12+5) schools that admitted children with MiID and 19 (14+5) schools that admitted children with MoID. Children with MiID were not eligible for boarding services.

Note 2: In 7 of the 8 SSDs, there were residential homes subvented by and under the purview of SWD.

Note 3: Students of the Hospital School were patients either staying in hospitals or staying at home.

Curriculum and duration of course in special schools

1.5 Since the implementation of the New Academic Structure in 2009/10, special schools have offered free senior secondary education for their students. Under the principle of “One Curriculum Framework for All”, special schools adopt the Hong Kong School Curriculum framework to develop a school-based curriculum relevant to the learning capabilities and characteristics of their students. In practice:

- (a) students with ID in special schools will not pursue the ordinary curriculum and will not go through ordinary assessments and examinations. They will be provided with individualised education programme tailored by their teachers; and
- (b) students in special schools who are intellectually capable of pursuing the ordinary curriculum will follow the ordinary curriculum and be assessed with appropriate accommodation in the same way as other students in the Hong Kong Diploma of Secondary Education Examination.

1.6 In general, the age of admission of children to a special school is 5 years 8 months and they are provided with free and universal basic education. Special schools for children with ID and children with VI offer a 12-year academic structure (comprising six years of primary, three years of junior secondary and three years of senior secondary education) whereas special schools for children with PD and children with HI offer a 13-year academic structure (comprising ten years of basic education and three years of senior secondary education — Note 3). Special schools are required

Note 3: *According to EDB, children with PD have severe or multiple physical disabilities, and children with Severe or Profound HI have difficulties in language acquisition and development as well as in auditory reception and oral expression. The learning of these students is regularly and frequently disrupted by hospitalisation and the need to receive therapies. As these children are capable of following the ordinary curriculum and attending the public examinations, EDB considers it appropriate to provide them with an additional year of study in order to prepare them better for the public examinations.*

Introduction

to give each student an academic structure status at the time of admission. A student would be assigned to the same class level with other children of the same age under normal circumstances. After admission, the status will be adjusted on a one-grade-per-year basis. Students of special schools will graduate upon completion of Secondary 6 (Note 4).

Number of students enrolled in special schools

1.7 In 2018/19, there were 7,939 students enrolled in the 60 special schools, comprising 3,783 primary school students and 4,156 secondary school students (see para. 1.3(a)). In the same school year, the number of students enrolled in 541 ordinary primary schools and 472 secondary schools (Note 5) were 349,745 and 308,020 respectively. Table 2 shows the numbers of students enrolled in special schools, and in ordinary primary and secondary schools in the period from 2014/15 to 2018/19.

Note 4: *Under special circumstances, individual students may need to extend their years of study. Valid reasons for the extension of years of study include frequent absence from school, major disruptions in learning and serious adaptation problems (see para. 4.24).*

Note 5: *Ordinary schools include government schools, aided schools, caput schools (for secondary schools only), schools under the Direct Subsidy Scheme, and private schools.*

Table 2

**Number of students enrolled in special schools and
enrolled in ordinary primary schools and secondary schools
(2014/15 to 2018/19)**

School type	No. of students					Change between 2014/15 and 2018/19
	2014/15	2015/16	2016/17	2017/18	2018/19	
Primary education						
Enrolled in ordinary schools (a)	309,107	317,119	327,915	340,137	349,745	+40,638 (+13%)
Enrolled in special schools (b)	3,191	3,337	3,423	3,610	3,783	+592 (+19%)
Sub-total (c)=(a)+(b)	312,298	320,456	331,338	343,747	353,528	+41,230 (+13%)
Secondary education						
Enrolled in ordinary schools (d)	356,689	336,079	321,488	313,848	308,020	−48,669 (−14%)
Enrolled in special schools (e)	4,452	4,366	4,259	4,216	4,156	−296 (−7%)
Sub-total (f)=(d)+(e)	361,141	340,445	325,747	318,064	312,176	−48,965 (−14%)
Primary education and secondary education						
Enrolled in ordinary schools (g)=(a)+(d)	665,796	653,198	649,403	653,985	657,765	−8,031 (−1%)
Enrolled in special schools (h)=(b)+(e)	7,643	7,703	7,682	7,826	7,939	+296 (+4%)
Total (i)=(c)+(f)	673,439	660,901	657,085	661,811	665,704	−7,735 (−1%)

Source: Audit analysis of EDB records

Remarks: The figures did not include students enrolled in the special school operated by the English Schools Foundation. In the period from 2014/15 to 2018/19, the number of students enrolled in the school ranged from 67 to 70.

Introduction

1.8 Table 3 shows the number of students enrolled in special schools analysed by student type for the period from 2014/15 to 2018/19 (Note 6). Majority of the students enrolled in special schools were students with ID. In 2018/19, there were 5,964 students with ID (comprising 3,218 students with MiID, 2,040 students with MoID and 706 students with SID), representing about 75% of the 7,939 students enrolled in special schools.

Table 3

**Number of students enrolled in special schools analysed by student type
(2014/15 to 2018/19)**

Student type	No. of students					Change between 2014/15 and 2018/19
	2014/15	2015/16	2016/17	2017/18	2018/19	
Students with VI	126	125	123	112	110	– 16 (– 13%)
Students with HI	102	87	89	84	64	– 38 (– 37%)
Students with PD	921	915	883	877	907	– 14 (– 2%)
Students with ID						
— MiID	3,051	3,049	3,103	3,154	3,218	+167 (+5%)
— MoID	1,865	1,879	1,911	1,992	2,040	+175 (+9%)
— SID	691	679	687	699	706	+15 (+2%)
Students enrolled in SSDs	632	600	553	594	614	– 18 (– 3%)
Students enrolled in Hospital School	255	369	333	314	280	+25 (+10%)
Overall	7,643	7,703	7,682	7,826	7,939	+296 (+4%)

Source: Audit analysis of EDB records

Note 6: There were 60 aided special schools in the period from 2014/15 to 2016/17. In 2017/18, a new SSD started operation and the number of special schools in 2017/18 became 61. Since 2018/19, a school for children with HI has fully mainstreamed to an ordinary school and ceased to provide special school places. The number of special schools in 2018/19 restored to 60.

Resources and support for special education

1.9 Special Education is one of the programme areas of EDB. The amount of expenditure on the programme area increased by \$701.9 million (35%) from \$2,010.8 million in financial year 2014-15 to \$2,712.7 million in financial year 2018-19 (see Table 4). The following resources and support are provided for special education:

- (a) ***Staffing.*** To cater for the specific needs of the students, in addition to teaching staff, different types of special schools are also provided with specialist staff and non-specialist staff:
 - (i) ***Teaching staff.*** In view of the intensive support needs of their students, special schools have implemented small class teaching. Classes of special schools are smaller than those in ordinary schools, ranging from 8 to 15 students per class. The staffing ratio for primary and junior secondary classes is 1.8 teachers per class. As for senior secondary classes, the staffing ratio is 2.0 teachers per class for children with ID and 2.1 teachers per class for special schools offering the ordinary curriculum. In addition, to cater for the diverse needs of students, EDB has provided respective types of special schools with additional teachers on establishment. The actual teacher-to-student ratio for special schools in 2018/19 was between 1:2.5 and 1:5.4 (see Appendix A). In 2018/19, the establishment of teaching staff was 1,945 staff;
 - (ii) ***Specialist staff.*** Specialist staff in special schools include occupational therapists (OTs), occupational therapy assistants, physiotherapists (PTs), nurses, braille staff, social workers, educational psychologists and speech therapists. For special schools with a boarding section, the specialist staff provided also include wardens, nurses, houseparents and programme workers. In 2018/19, the establishment of specialist staff was 1,181 staff; and

Introduction

- (iii) ***Non-specialist staff.*** Non-specialist staff in special schools include clerks, clerical assistants, artisans, drivers, workshop attendants, janitor staff and teacher assistants. For special schools with a boarding section, the non-specialist staff provided also include cooks and watchmen. In 2018/19, the establishment of non-specialist staff was 792 staff;
- (b) ***Professional development.*** To enhance the professional capacity of the staff of special schools in catering for their students, EDB offers professional development programmes and training courses for both teaching and non-teaching staff. For example, EDB has been providing a 240-hour training course specifically for special school teachers. Moreover, EDB has commissioned tertiary institutions and medical organisations to conduct training for special school personnel to equip them with knowledge and skills in handling children with medical complexity; and
- (c) ***Grants and support.*** In addition to the manpower resources provided in accordance with the Code of Aid for Special Schools or Code of Aid for Aided Schools, special schools are also provided with different grants. Schools may deploy some of the grants flexibly to employ additional staff or to hire professional services to meet the operational needs of individual schools. Furthermore, EDB provides various support to schools. For example, EDB provides network support for special schools in the form of learning circles. EDB professional officers also conduct theme-based visits to special schools every year to identify good practices for dissemination to other special schools.

Table 4

**Total amount of financial provision for EDB and expenditure
on the Special Education programme area
(financial year 2014-15 to 2018-19)**

Financial year	Total amount of financial provision for EDB (\$ million)	Expenditure on the Special Education programme area (\$ million)
2014-15	47,975.8	2,010.8
2015-16	52,286.5	2,190.0
2016-17	54,815.4	2,292.9
2017-18	60,087.8	2,463.1
2018-19	67,640.3	2,712.7
Change between 2014-15 and 2018-19	+19,664.5 (+41%)	+701.9 (+35%)

Source: Audit analysis of EDB records

1.10 The Special Education Division of EDB, headed by a Principal Assistant Secretary, is responsible for services related to support for students with SEN in both ordinary and special schools. Under the Special Education Division, there are two Special Education Support Sections which are responsible for special education services (Note 7). As at 30 June 2019, the establishment and staff strength of the two Sections were 35 and 32 respectively. An organisation chart (extract) (as at 30 June 2019) of the Special Education Division is shown at Appendix B.

Note 7: *Apart from these two Special Education Support Sections, the Special Education Division has another two Special Education Support Sections responsible for the implementation of integrated education, five Educational Psychology Service Sections, a Speech and Hearing Services Section, and an Administration Section.*

Audit review

1.11 The Audit Commission (Audit) completed a review of services for students with SEN in 1999, and a review of EDB's work in the implementation of integrated education in 2018. The results were reported in Chapter 7 of the Director of Audit's Report No. 33 of October 1999 and in Chapter 3 of the Director of Audit's Report No. 70 of April 2018 respectively.

1.12 In April 2019, Audit commenced a review of EDB's work in the implementation of special education and SWD's work in connection with special education. The audit has focused on the following areas:

- (a) provision and management of school places and boarding places (PART 2);
- (b) staffing of special schools (PART 3); and
- (c) grants and support for special education (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.13 The Secretary for Education and the Director of Social Welfare agree with the audit recommendations. The Secretary for Education has said that the Audit Report will serve as a valuable reference for EDB's continual enhancement of the quality of special education in Hong Kong.

Acknowledgement

1.14 Audit would like to acknowledge with gratitude the full cooperation of the staff of EDB and SWD during the course of the audit review.

PART 2: PROVISION AND MANAGEMENT OF SCHOOL PLACES AND BOARDING PLACES

2.1 This PART examines the provision and management of school places and boarding places of special schools. Audit found room for improvement in the following areas:

- (a) provision and management of school places (paras. 2.2 to 2.15); and
- (b) provision and management of boarding places (paras. 2.16 to 2.36).

Provision and management of school places

Provision of special school places

2.2 Except for the Hospital School (see para. 1.4(f)), EDB provides school places for the remaining 59 special schools either on a regional basis or on a territory-wide basis:

- (a) ***Regional basis.*** School places for 48 special schools (i.e. the 7 schools for children with PD and the 41 schools for children with ID) are provided on a regional basis, namely:
 - (i) Hong Kong Island;
 - (ii) Kowloon and Tseung Kwan O;
 - (iii) Sha Tin and Sai Kung (Note 8);
 - (iv) Tai Po and North;

Note 8: *According to EDB's definition, the Sha Tin and Sai Kung region does not include Tseung Kwan O.*

Provision and management of school places and boarding places

- (v) Kwai Tsing and Tsuen Wan;
 - (vi) Tuen Mun and Yuen Long; and
 - (vii) Outlying Islands (Note 9); and
- (b) ***Territory-wide basis.*** For 11 special schools (i.e. the two schools for children with VI, the school for children with HI and the eight SSDs (Note 10)), school places are provided on a territory-wide basis.

Not all regions provided with all types of special school places

2.3 Audit reviewed the school places that were provided on a regional basis (i.e. the 7 schools for children with PD and the 41 schools for children with ID) and found that:

- (a) the Outlying Islands region did not have schools for children with PD and children with ID (including MiID, MoID or SID). In 2018/19, the 138 children with PD or ID residing in the region were placed to the special schools in the other six regions; and
- (b) the Sha Tin and Sai Kung region did not have schools for children with SID. In 2018/19, the 92 children with SID residing in the region were placed to the special schools in the Kowloon and Tseung Kwan O region, the Kwai Tsing and Tsuen Wan region, and the Tai Po and North region (see Table 5).

Note 9: *The Outlying Islands region consists of the islands spreading across the water south and southwest of Hong Kong Island. Examples of islands include the Lantau Island, Lamma Island, Cheung Chau and Peng Chau.*

Note 10: *According to EDB, planning of provision of SSD places is done on a territory-wide basis having regard to: (a) the need for segregating SSD students from their undesirable peers by taking them temporarily away from their neighbourhood; (b) the transient nature of students' difficulties; and (c) the relatively high turnover of students and hence the ever-changing profile of their residential area distribution.*

Table 5

**Availability of schools for children with PD
and schools for children with ID analysed by region
(2018/19)**

Region	Schools for children with			
	PD	MiID	MoID	SID
Hong Kong Island	✓	✓	✓	✓
Kowloon and Tseung Kwan O	✓	✓	✓	✓
Sha Tin and Sai Kung	✓	✓	✓	✗
Tai Po and North	✓	✓	✓	✓
Kwai Tsing and Tsuen Wan	✓	✓	✓	✓
Tuen Mun and Yuen Long	✓	✓	✓	✓
Outlying Islands	✗	✗	✗	✗

Source: Audit analysis of EDB records

2.4 Audit noted that as at July 2019:

- (a) a new school for children with ID (MiID, MoID and SID) in Tung Chung (i.e. the Outlying Islands region) was under development and was expected to commence operation in 2020/21 (Note 11). In view of the long time taken to provide school places in Tung Chung, Audit considers that EDB needs to closely monitor the development of the school and ensure that it can commence operation in accordance with the planned timetable; and

Note 11: *The Government conceived the plan to build a special school in a site in Tung Chung in 2004. After completing preparations such as technical feasibility study and school design, EDB launched a consultation in 2008. However, EDB met with strong opposition from some local residents over concerns about noise and traffic implications etc. Failing to reach a consensus with the residents, EDB decided to identify an alternative site in Tung Chung. Following discussion between EDB and relevant government departments, in March 2013, the current site was reserved for EDB to build the special school.*

- (b) EDB had no plan to provide school places for children with PD in the Outlying Islands region and for children with SID in the Sha Tin and Sai Kung region. In response to Audit's enquiry, EDB informed Audit in September 2019 that planning and establishing every type of special schools in every region was not the policy intention of EDB owing to the small number of students requiring special school placement. In Audit's view, EDB needs to consider expanding the scope of target students of special schools as far as practicable so that children with PD in the Outlying Islands region and children with SID in the Sha Tin and Sai Kung region can be better catered for in their own regions. For instance, EDB can explore with schools for children with MiID and schools for children with MoID in the Sha Tin and Sai Kung region the feasibility of these schools to accept children with SID.

Need to take measures to address the under-enrolment in some schools

2.5 Audit examined the enrolment rate of students in special schools and found that the enrolment rates of SSDs, schools for children with VI and the school for children with HI were not high in 2016/17, 2017/18 and 2018/19 (see Table 6):

- (a) **SSDs.** The overall enrolment rates of the eight SSDs were 51%, 53% and 57% respectively;
- (b) **Schools for children with VI.** The overall enrolment rates of the two schools for children with VI were 72%, 66% and 66% respectively; and
- (c) **School for children with HI.** The enrolment rates of the school for children with HI were 68%, 70% and 58% respectively.

Table 6

**Enrolment rates of students in special schools
(2016/17 to 2018/19)**

Student type	Overall enrolment rate		
	2016/17	2017/18	2018/19
Students with MiID	95 %	96 %	96 %
Students with MoID	93 %	95 %	95 %
Students with SID	88 %	88 %	88 %
Students with PD	87 %	86 %	88 %
Students in Hospital School	100 %	95 %	84 %
Students with VI	72 %	66 %	66 %
Students with HI	68 %	70 %	58 %
Students in SSDs	51 %	53 %	57 %

Source: Audit analysis of EDB records

2.6 Regarding the enrolment rates of the two schools for children with VI and the school for children with HI, EDB informed Audit in September 2019 that they had all along been offering support services to students with VI and students with HI studying in ordinary schools and/or other special schools through the Resource Support Programme and Enhanced Support Service respectively. In view of the development of integrated education, it was anticipated that the enrolment of the schools could not be boosted.

2.7 Audit analysed the enrolment rates of each of the eight SSDs and found that in 2018/19, the rates ranged from 40% to 74% (see Table 7).

Table 7**Enrolment rates of the eight SSDs
(2016/17 to 2018/19)**

SSD	Enrolment rate		
	2016/17	2017/18	2018/19
A	56 %	66 %	73 %
B	54 %	64 %	64 %
C	33 %	37 %	41 %
D	54 %	59 %	64 %
E	54 %	77 %	74 %
F	53 %	49 %	44 %
G	51 %	36 %	40 %
H (Note)	Not applicable	27 %	52 %

Source: Audit analysis of EDB records

Note: SSD H commenced operation in September 2017.

2.8 A persistent and significant under-enrolment is not satisfactory and suggests that there is a need to explore ways to better utilise the resources of SSDs. Audit considers that EDB needs to ascertain the reasons for the low enrolment of students in SSDs and take measures to address the issue, for example by expanding the scope of services provided by SSDs, where appropriate.

Admission to special schools

2.9 The prevailing referral and placement mechanism of students to special schools for upcoming Primary One students and for school-age students (i.e. students other than upcoming Primary One students) is as follows:

- (a) ***Upcoming Primary One students.*** Upon receipt of the referrals (Note 12), EDB will confirm the types of special schools recommended by the professionals and discuss with parents about the educational needs of their children and the selection of schools. The placement arrangements of the schools for children with ID, PD, VI and HI (Note 13) are as follows:
 - (i) ***Schools for children with ID.*** In 2018/19, the numbers of schools for children with MiID, MoID, MiID and MoID, and SID were 12, 14, 5, and 10 respectively. Each school has its own Primary Catchment Area (i.e. covering areas that are in the vicinity of the school). For schools for children with MiID and MoID, the catchment areas are different for the MiID section and the MoID section. Apart from the Primary Catchment Area, EDB has divided Hong Kong into five Extended Catchment Areas (Note 14). The parents of a child can choose any school in the territory. While the parents are recommended to apply for a school whose Primary

Note 12: *In general, pre-school children are assessed by the Child Assessment Centres under the Child Assessment Service of the Department of Health or the Hospital Authority. With parental consent, the Child Assessment Centres will send the reports of the children who are recommended to study in special schools to EDB within one school year before they reach the age appropriate for admission to Primary One. If the children are assessed by other qualified professionals arranged by parents, relevant reports should also reach EDB within the same time limit.*

Note 13: *There are no admissions of upcoming Primary One students for SSDs and the Hospital School. The reasons are: (a) for SSDs, ordinary schools will render school-based support to their Primary One students with emotional or behavioural problems using the additional resources and professional support provided by EDB. They can refer students who need more support to the Adjustment Unit run by EDB for additional off-site intervention; and (b) for the Hospital School, students are referred to the School directly by the hospitals.*

Note 14: *The five Extended Catchment Areas are: (a) Hong Kong Island and Outlying Islands (excluding Tung Chung); (b) Kowloon, Tseung Kwan O and Sai Kung East; (c) New Territories East and Sai Kung West; (d) Tsuen Wan, Kwai Chung, Tsing Yi and Tung Chung; and (e) Tuen Mun and Yuen Long.*

Catchment Area covers their residence so as to reduce the time spent on travelling to and from school, they are allowed to apply for a school in the Extended Catchment Area to which their residence belongs instead. Parents may also apply for a school across districts (i.e. any school in Hong Kong). Applications for schools within the Primary Catchment Area will be handled first, followed by the applications for schools within the Extended Catchment Area and then applications for schools across districts. If the demand for school places of a particular school exceeds the supply, EDB will assign school places to applicants by drawing lots. For each school, at least one Primary One school place is reserved for each category of applications (i.e. Primary Catchment Area, Extended Catchment Area and across districts);

- (ii) ***Schools for children with PD.*** In 2018/19, there were seven schools for children with PD. Each school has its own catchment area for admitting children living in the area. The schools' catchment areas cover the whole territory. Considering the accessibility to schools, the parents of a child can only apply for a school whose catchment area covers their residence. According to EDB's internal guidelines, parents may discuss with EDB if a school whose catchment area does not cover their residence is preferred due to exceptional circumstances; and
- (iii) ***Schools for children with VI and the school for children with HI.*** In 2018/19, there were two schools for children with VI and one school for children with HI. One school for children with VI admits children with VI and the other admits children with VI cum ID. The three schools admit children across the territory; and
- (b) ***School-age students.*** School-age students can apply for special school placement at any time throughout the school year. The placement arrangements of SSDs, schools for children with ID, schools for children with PD, schools for children with VI and the school for children with HI (Note 15) are as follows:

Note 15: *Students are referred to the Hospital School directly by the hospitals.*

- (i) **SSDs.** Upon their parents' consent, students are referred by their schools to the Vetting Committee of CCRM (see para. 1.4(e)). After vetting, the student information is passed to SSDs to proceed with the admission procedures; and
- (ii) ***Schools for children with ID/PD/VI/HI.*** Children are referred to the appropriate type of special schools based on the assessment conducted by relevant professionals including types of disabilities and recommendations. EDB will provide information on schools which have vacancies to the parents for them to choose a school for their children.

Need to adopt more flexibility in placement arrangements for school-age students with ID and students with PD

2.10 The placement arrangements for school-age students with ID and students with PD are more restrictive:

- (a) ***Placement arrangements for school-age students with ID versus upcoming Primary One students with ID.*** Upcoming Primary One students with ID (i.e. MiID, MoID or SID) can apply for any school in the territory. However, school-age students with ID can only apply for a school whose Primary Catchment Area or Extended Catchment Area covers their residence. In contrast, both upcoming Primary One students with PD and school-age students with PD are subject to the same application restriction that they can only apply for a school whose catchment area covers their residence; and
- (b) ***Placement arrangements for students with PD versus upcoming Primary One students with SID.*** Unlike the placement arrangements for upcoming Primary One students with SID which allow applications for any school in the territory, students with PD can only apply for a school whose catchment area covers their residence. However, for the provision of boarding places, EDB considers that both students with SID and students with PD have mobility problems and therefore, parents of students with SID or PD are subject to the same application restriction (i.e. they can only apply for boarding places in a school whose catchment area covers their residence) (see para. 2.30(b)(ii)).

In response to Audit's enquiry, EDB informed Audit in September 2019 that in reality, only few parents of students with SID will choose a school outside the Primary Catchment Area or Extended Catchment Area unless they have to apply for boarding services. For students with PD, owing to the mobility constraints similar to students with SID, their parents will choose schools near to their residence unless boarding services are required. Parents of students with PD may discuss with the officers of EDB during interviews if a school in other districts is required due to special circumstances. To give parents more choices with a view to better catering for the diverse needs of the students, Audit considers that EDB needs to consider adopting more flexibility in the placement arrangements for school-age students with ID and students with PD.

Need to review reasons for prolonged enrolment of SSD students

2.11 SSDs aim to provide intensive support for students with moderate to severe emotional and behavioural difficulties to help them tide over their transient adaptation problems in the course of development, and to enhance their learning motivation and life skills so that they can resume education in ordinary schools as soon as possible. If the students show marked improvement after receiving intensive support in SSDs, arrangements will be made for the students to reintegrate into ordinary schools.

2.12 ***Discharge arrangements.*** The discharge arrangements of SSDs are as follows:

- (a) ***Students under short-term adjustment programme.*** Students may opt for the short-term adjustment programme if they are suitable for placement in SSDs but are unwilling to be discharged from their original schools or whose problems are expected to be improved shortly after receiving the services at SSDs. The short-term adjustment programme is implemented for students who are expected to be able to be discharged after receiving services at SSDs for three months to one year. SSDs are required to review the progress of students every three months so as to collaborate with students' original schools and facilitate the students to return to their original schools (Note 16) as early as possible; and

Note 16: *Students under the short-term adjustment programme maintain their registration with their original schools and will be reintegrated into the schools on completion of the programme with satisfactory improvement in behaviour.*

- (b) *Students not under short-term adjustment programme.* According to EDB, most students are expected to be able to achieve notable improvement and leave SSDs within two school years. When a student has stayed for about one and a half years, SSDs are required to conduct a comprehensive review of the student's progress to help the student return to ordinary school and/or reintegrate into the community as early as possible.

2.13 Audit analysed the periods of stay in SSDs (between admission and discharge) for discharged students in the period from 2013/14 to 2017/18 (see Table 8) and found the following issues:

- (a) *Students under short-term adjustment programme.* While the short-term adjustment programme is meant for students who are expected to be able to achieve improvement for discharge in three months to one year's time, on average 41% of the students (ranging from 27% to 52%) under the short-term adjustment programme stayed in the schools for more than one year, and the longest period of stay (for one student discharged in 2013/14) was 3 years and 8 months; and
- (b) *Students not under short-term adjustment programme.* On average 46% of the students (ranging from 34% to 58%) not under the short-term adjustment programme stayed in the schools for more than two years, and the longest period of stay (for one student discharged in 2015/16) was 7 years.

According to EDB's policy and objectives, SSDs aim to provide more intensive guidance to students so that they may reintegrate into ordinary schools as soon as possible. SSDs are required by EDB to review the performance of students and make professional assessment to identify students who could reintegrate. Nevertheless, a notable percentage of students had to receive intensive support provided by SSDs for a considerable period of time (i.e. beyond three months to one year for students under the short-term adjustment programme and more than two years for students not under the short-term adjustment programme). EDB needs to review the reasons why more than 40% of students, on average, stayed in SSDs beyond the expected timeframe and take appropriate improvement measures. In particular, EDB needs to ascertain whether more guidance and advice should be given to referrers of SSDs so that they can better identify students suitable for the short-term adjustment programme, which can better meet their needs.

Provision and management of school places and boarding places

Table 8

Periods of stay in SSDs for students discharged from SSDs between 2013/14 and 2017/18

Period of stay (Month)	No. of students				
	2013/14	2014/15	2015/16	2016/17	2017/18
<i>Students under short-term adjustment programme</i>					
≤ 6	4	6	2	7	11
> 6 to 12	45	26	36	37	85
> 12 to 18	22	15	28	23	25
> 18 to 24	3	5	12	11	9
> 24 to 30	2 } 31 (39%)	1 } 21 (40%)	1 } 41 (52%)	2 } 37 (46%)	1 } 35 (27%)
> 30 to 36	2	0	0	1	0
> 36 to 48	2	0	0	0	0
Total	80	53	79	81	131
<i>Students not under short-term adjustment programme</i>					
≤ 6	26	11	11	7	15
> 6 to 12	52	38	26	20	26
> 12 to 18	60	54	42	34	30
> 18 to 24	69	49	44	34	31
> 24 to 30	34	24	26	24	16
> 30 to 36	23	36	25	28	29
> 36 to 48	24 } 109 (34%)	37 } 125 (45%)	32 } 111 (47%)	36 } 129 (58%)	27 } 90 (47%)
> 48 to 60	13	17	15	22	13
> 60 to 72	15	11	12	15	4
> 72 to 84	0	0	1	4	1
Total	316	277	234	224	192

Source: Audit analysis of EDB records

Audit recommendations

- 2.14 **Audit has *recommended* that the Secretary for Education should:**
- (a) **closely monitor the development of the new school for children with ID in Tung Chung and ensure that it can commence operation in accordance with the planned timetable;**
 - (b) **consider expanding the scope of target students of special schools as far as practicable so that children with PD in the Outlying Islands region and children with SID in the Sha Tin and Sai Kung region can be better catered for in their own regions;**
 - (c) **ascertain the reasons for the low enrolment of students in SSDs and take measures to address the issue, for example by expanding the scope of services provided by SSDs, where appropriate;**
 - (d) **consider adopting more flexibility in the placement arrangements for school-age students with ID and students with PD;**
 - (e) **review the reasons why more than 40% of students, on average, stayed in SSDs beyond the expected timeframe and take appropriate improvement measures; and**
 - (f) **ascertain whether more guidance and advice should be given to referrers of SSDs so that they can better identify students suitable for the short-term adjustment programme, which can better meet their needs.**

Response from the Government

2.15 The Secretary for Education agrees with the audit recommendations. He has said that:

- (a) EDB is liaising with the Architectural Services Department closely. The new school for children with ID in Tung Chung is expected to be handed

Provision and management of school places and boarding places

over to the School Sponsoring Body within 2019. EDB is actively exploring the feasibility of operating the new school within 2019/20;

- (b) from the perspective of provision, the new school in Tung Chung is provided with facilities required to cater for the students with SID, which are similar to those for students with PD. If deemed necessary, students with PD residing in the Outlying Islands region could also be admitted to the school. As for the students with SID living in the Sha Tin and Sai Kung region, currently, they could be referred to related special schools located in the Kowloon and Tseung Kwan O region and/or the Tai Po and North region. EDB will explore the recommendation of expanding the scope of target students of special schools as far as practicable;
- (c) EDB will keep in view the enrolment situation in SSDs. In parallel, in order to maximise the capacity and expertise of SSDs, a 2-year pilot scheme of special units has been trying out in SSDs starting from 2019/20 to 2020/21 to provide intensive support for students with autism spectrum disorders in ordinary schools who display very severe adjustment problems. EDB will evaluate the effectiveness of the pilot scheme and collect views of the key stakeholders before considering expansion of the scope of the services provided by the SSDs along this line. At the same time, EDB will discuss with the SSD(s) with very low enrolment on the feasibility of their conversion to other types of special schools that have higher demand;
- (d) EDB will consider providing more options of special schools for the school-age students with ID and students with PD subject to their genuine needs;
- (e) EDB notes that there are a number of reasons whereby students require long time studying in SSD, such as the need for completion of senior secondary education, poor family support and awaiting alternative placement, etc. EDB will continue to monitor the reasons for the prolonged stay of some students in SSDs and will continue to work towards the objective of their timely return to ordinary school once they are ready; and
- (f) EDB will continue to provide and update information of SSDs through arranging seminars and issuing guidelines for the referrers to facilitate them to make appropriate decision of the suitable programme in SSD for their cases.

Provision and management of boarding places

2.16 EDB encourages students to live with their families so as to allow students to grow up in a normal family environment and maintain good parent-child relationship. EDB will only arrange boarding placement for students in need. The objective of providing boarding services in special schools is to cater for the long-term residential needs of students with severe disabilities and to facilitate them to receive school education during school days. In 2018/19, boarding services were provided in 28 of the 60 special schools. Of the 28 schools, 7 were SSDs and their residential homes were subvented by and under the purview of SWD. The boarding sections of the remaining 21 schools were subvented by and under the purview of EDB (see Table 1 in para. 1.4). Usually, students using the boarding services of a school also study at the school (Note 17). EDB conducts vetting of applications for boarding services of the 21 special schools other than SSDs. For the seven SSDs, both EDB and SWD conduct vetting of boarding service applications through CCRM (see para. 1.4(e)). The eligibility criteria for boarding services of schools are as follows:

- (a) **Boarding services of SSDs.** In addition to meeting the requirements for day placement at SSDs, students with the following conditions may have the need for boarding service:
 - (i) inadequate family care, rejection by parents or suspected child abuse; or
 - (ii) having deep involvement in gang activities and failing to disentangle oneself from adverse influence of the subculture unless intensive life skill training and supervised daily care are provided; and

Note 17: *As at 15 September 2018, of the 1,460 students using the boarding services, there were 35 boarders of two schools for children with PD who were not studying at the schools. The boarding sections of the two schools have special admission arrangement. The two schools are run by two different school sponsoring bodies. The boarding section of each of the two schools not only admits its own students, but also students of another special school (which does not have a boarding section) run by its respective school sponsoring body.*

Provision and management of school places and boarding places

(b) ***Boarding services of schools other than SSDs.*** In addition to meeting the requirements for day placement at special schools, applicants have to meet at least one of the following criteria:

- (i) homelessness (e.g. orphans);
- (ii) severely inadequate care and supervision from adults;
- (iii) very disturbed family relationship;
- (iv) evidence of being abused; or
- (v) residence is too remote from the special school and transportation between home and school is inconvenient.

2.17 Boarding services can be classified into two types:

- (a) ***Five-day boarding service.*** Students can only stay in the schools on school days. Students have to return home during Saturdays, Sundays and school holidays; and
- (b) ***Seven-day boarding service.*** Students can stay in the schools all year round, including non-school days.

Enrolment of boarding places

2.18 As at 15 September 2018, the capacity and the enrolment of boarding places were 1,141 and 998 respectively for the boarding places under the purview of EDB, and 727 and 462 respectively for the boarding places under the purview of SWD in SSDs (see Table 9). Table 10 analyses the enrolment situation.

Provision and management of school places and boarding places

Table 9

Capacity and enrolment of boarding places (15 September 2018)

	Type of special school							Overall
	Boarding places under purview of EDB						Boarding places under purview of SWD	
	SID	MoID	PD	VI	HI	Overall	SSD	
Capacity (a)	409	343	276	107	6	1,141	727	1,868
Enrolment (b)	353	329	242	72	2	998	462	1,460
Percentage (c) = (b) ÷ (a) × 100%	86%	96%	88%	67%	33%	87%	64%	78%

Source: Audit analysis of EDB and SWD records

Provision and management of school places and boarding places

Table 10

Analysis of enrolment situation for boarding places (15 September 2018)

	Type of special school							Total
	Boarding places under purview of EDB						Boarding places under purview of SWD	
	SID	MoID	PD	VI	HI	Sub-total	SSD	
Five-day boarding places								
Capacity (a)	179	166	76	70	0	491	0	491
Enrolment (b)	132	158	60	49	0	399	0	399
No. of students with boarding places already made available (Note 1) (c)	7	2	3	0	0	12	0	12
No. of vacant places (Note 2) (d)=(a)-(b)-(c)	40	6	13	21	0	80	0	80
No. of students awaiting boarding places (Note 2)	1	34	0	0	0	35	0	35
Seven-day boarding places								
Capacity (e)	230	177	200	37	6	650	727	1,377
Enrolment (f)	221	171	182	23	2	599	462	1,061
No. of students with boarding places already made available (Note 1) (g)	8	3	8	1	2	22	30	52
No. of vacant places (Note 2) (h)=(e)-(f)-(g)	1	3	10	13	2	29	235	264
No. of students awaiting boarding places (Note 2)	26	105	8	0	0	139	8	147

Source: Audit analysis of EDB and SWD records

Note 1: Students with boarding places already made available included those undergoing admission procedures and those who had been allocated boarding places but whose admissions were deferred due to personal reasons.

Note 2: Vacant places and students awaiting boarding places existed at the same time due to reasons such as: (a) mismatch of students' gender and the gender of students for which vacant places were available; (b) mismatch of parents' school preference and the schools in which vacant places were available; and (c) awaiting parents' consent for boarding placement.

Need to explore ways to rationalise boarding places for students with SID

2.19 Audit analysed the vacancy and waiting situation of boarding places in schools for children with SID and noted that as at 15 September 2018:

- (a) notwithstanding that there were 26 students waiting for seven-day boarding service, there were 40 vacant places for five-day boarding service; and
- (b) under the existing mechanism, applicants could only apply for either five-day boarding places or seven-day boarding places. Applicants awaiting seven-day boarding places would not be allocated five-day boarding places as a stopgap measure to partially meet their boarding needs before seven-day boarding places were available for them.

2.20 Audit considers that EDB needs to explore the feasibility of implementing measures with a view to making more efficient use of the boarding places and shortening the waiting time for seven-day boarding places, such as:

- (a) converting some vacant five-day boarding places to seven-day boarding places; and
- (b) allowing students waiting for seven-day boarding places to use vacant five-day boarding places temporarily before seven-day boarding places are available.

Shortfall of boarding places for students with MoID

2.21 As at 15 June 2019, there were 132 students with MoID waiting for boarding places (28 for five-day boarding service and 104 for seven-day boarding service). Audit analysed the number of students with MoID awaiting boarding services from 2014/15 to 2018/19 (see Figure 1). Audit found that:

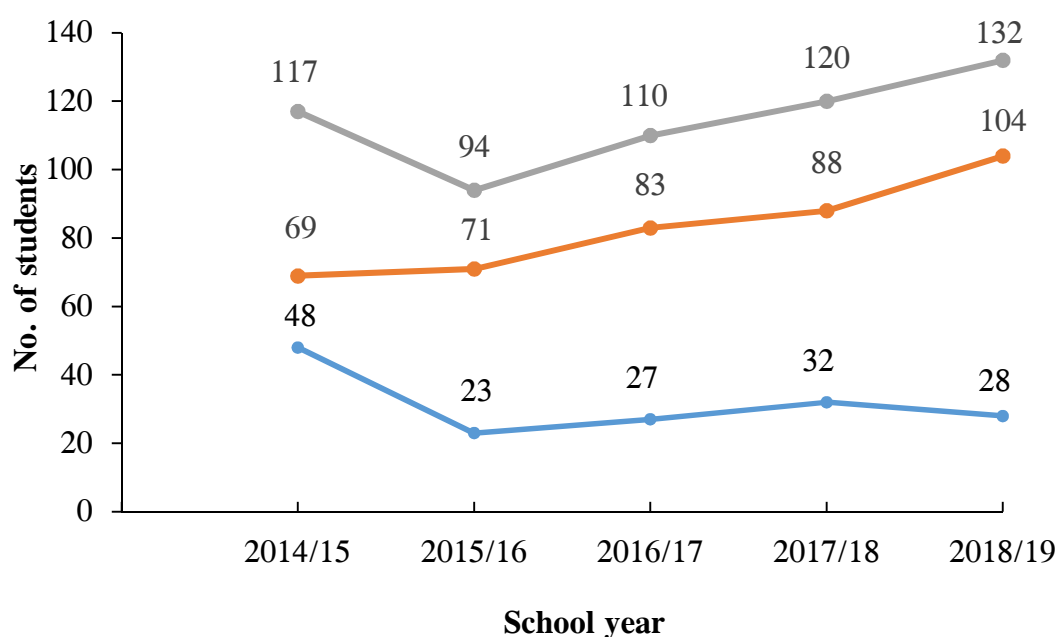
- (a) the overall number of students awaiting boarding services increased from 117 as at 15 September 2014 to 132 as at 15 June 2019; and

Provision and management of school places and boarding places

- (b) the number of students awaiting seven-day boarding service had been on an increasing trend from 69 as at 15 September 2014 to 104 as at 15 June 2019, while the corresponding number for five-day boarding service decreased from 48 as at 15 September 2014 to 28 as at 15 June 2019.

Figure 1

Number of students with MoID awaiting boarding services (2014/15 to 2018/19)



Legend:

- Five-day boarding service
- Seven-day boarding service
- Total

Source: *Audit analysis of EDB records*

Remarks: *Except for 2018/19, the numbers of students awaiting boarding services in this Figure were the numbers as at 15 September of the respective school years. For 2018/19, the numbers were updated to 15 June 2019.*

Provision and management of school places and boarding places

2.22 Audit conducted an ageing analysis on the waiting time of students with MoID for boarding services as at 15 June 2019 (see Table 11). Audit noted that:

- (a) 8 (29%) of the 28 students awaiting five-day boarding service had been waiting for more than 1 year, and the longest waiting time was 5 years and 10 months; and
- (b) 65 (63%) of the 104 students awaiting seven-day boarding service had been waiting for more than 1 year, and the longest waiting time was 3 years and 9 months.

Table 11

**Ageing analysis of waiting time of students
with MoID for boarding services
(15 June 2019)**

Waiting time (Year)	No. of students awaiting	
	Five-day boarding service	Seven-day boarding service
≤ 1	20	39
> 1 to 2	0	34
> 2 to 3	1	25
> 3 to 4	0	6
> 4 to 6	7 (Note)	0
Total	28	104

Source: Audit analysis of EDB records

Note: According to EDB, in May 2018, it approached the parents of 4 female students who had been waiting for five-day boarding service of two special schools on Hong Kong Island for 3 to 4 years. EDB offered a special arrangement of placing them into the boarding section of a special school in Kowloon, but the parents refused the offer and chose to continue waiting.

Provision and management of school places and boarding places

2.23 In response to the long waiting time for boarding service for students with MoID, EDB informed Audit in October 2019 that in addition to the reasons of parents' requests for deferment of admission, admission to the boarding section of a specific school and students' long-term stay in hospital which have lengthened the waiting time, the increase in family problems of inadequate and/or improper care for children is a major factor which has induced the high demand for boarding service, especially seven-day boarding service, in schools for children with MoID in the recent years.

2.24 EDB has been working to increase the boarding places for students with MoID. Audit noted that several works programmes to provide new boarding places were in the pipeline:

- (a) conversion programme at the existing boarding section of a school for children with MoID in Sha Tin to provide 12 new boarding places. The new boarding places were expected to be available in 2020/21;
- (b) construction of a new school for children with ID (MiID, MoID and SID) in Tung Chung with a boarding section of around 40 new boarding places for students with MoID (Note 18). The new school and its boarding section were expected to commence operation in 2020/21;
- (c) construction of new boarding sections for a school for children with MoID in Tai Po and a school for children with MiID and MoID in Fanling providing 60 new boarding places for students with MoID in each school. The new boarding sections were expected to commence operation in 2021/22; and
- (d) planning of a new school for children with MiID and MoID in Kowloon Tong with a boarding section of 80 new boarding places for students with MoID. The new school and its boarding section were expected to commence operation in 2025/26.

2.25 *Need to further increase the supply of new boarding places.* Audit noted that, according to EDB's latest projection on the supply and demand of boarding places for students with MoID:

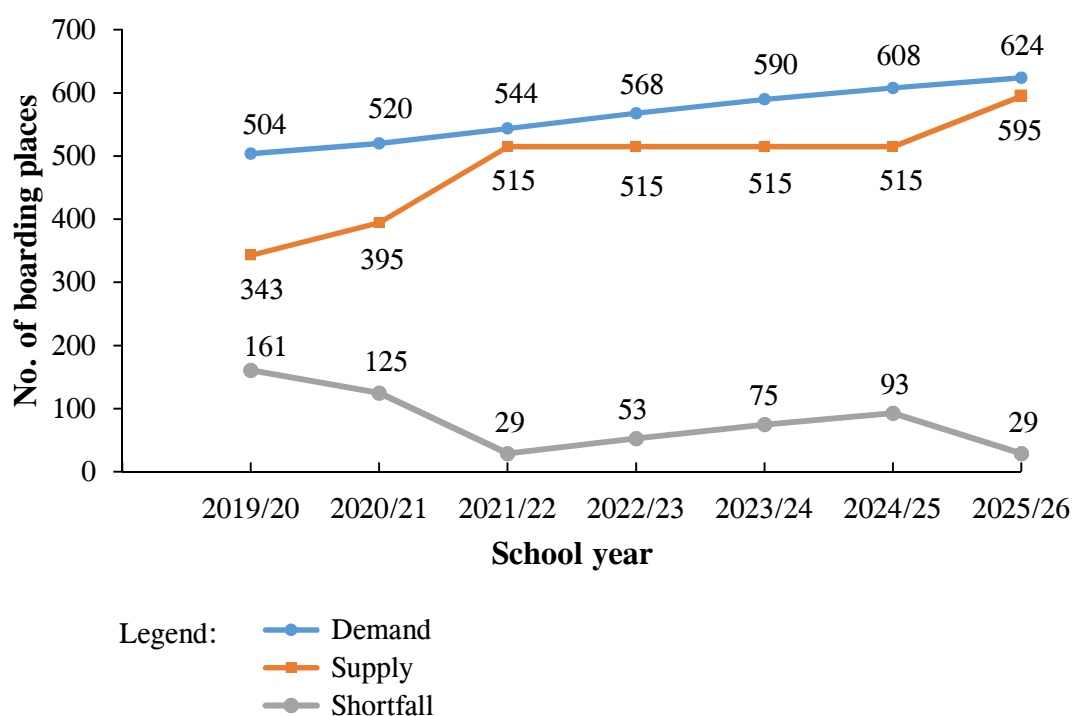
Note 18: *Apart from boarding places for students with MoID, the boarding section will also provide around 20 places for students with SID.*

Provision and management of school places and boarding places

- (a) a significant level of shortfall of boarding places would persist in 2019/20 and 2020/21. The projected numbers of shortfall of boarding places were 161 places in 2019/20 and 125 places in 2020/21; and
- (b) notwithstanding that the shortfall of boarding places would improve from 161 places in 2019/20 to 29 places in 2025/26, there would still be a shortfall of boarding places throughout the projection period of seven school years (see Figure 2).

Figure 2

Projected shortfall of boarding places for students with MoID (2019/20 to 2025/26)



Source: Audit analysis of EDB records

Provision and management of school places and boarding places

According to EDB, it has been exploring feasible ways to increase the supply with reference to the actual demand of the boarding places. EDB has made use of the space available in the boarding sections of schools for children with MoID for provision of additional boarding places in recent years. Audit considers that EDB needs to step up its efforts in exploring effective measures to increase the supply of new boarding places with a view to shortening the waiting time of students with MoID for boarding services.

Need to explore ways to make good use of boarding places in SSDs

2.26 Each SSD and its residential home only admit students of a single gender. Of the seven SSDs with a residential home, four admit boys and three admit girls. Audit examined the utilisation of boarding places in SSDs analysed by gender in the period from 2014/15 to 2018/19. Audit found that:

- (a) the utilisation of boarding places for boys increased from 76% in 2014/15 to 82% in 2018/19, and the corresponding figures for girls decreased from 73% in 2014/15 to 43% in 2018/19 (see Table 12); and
- (b) the numbers of vacant boarding places for boys decreased from 109 in 2014/15 to 82 in 2018/19, and the corresponding figures for girls increased from 55 in 2014/15 to 153 in 2018/19 (see Figure 3).

Table 12

**Utilisation of boarding places in SSDs analysed by gender
(2014/15 to 2018/19)**

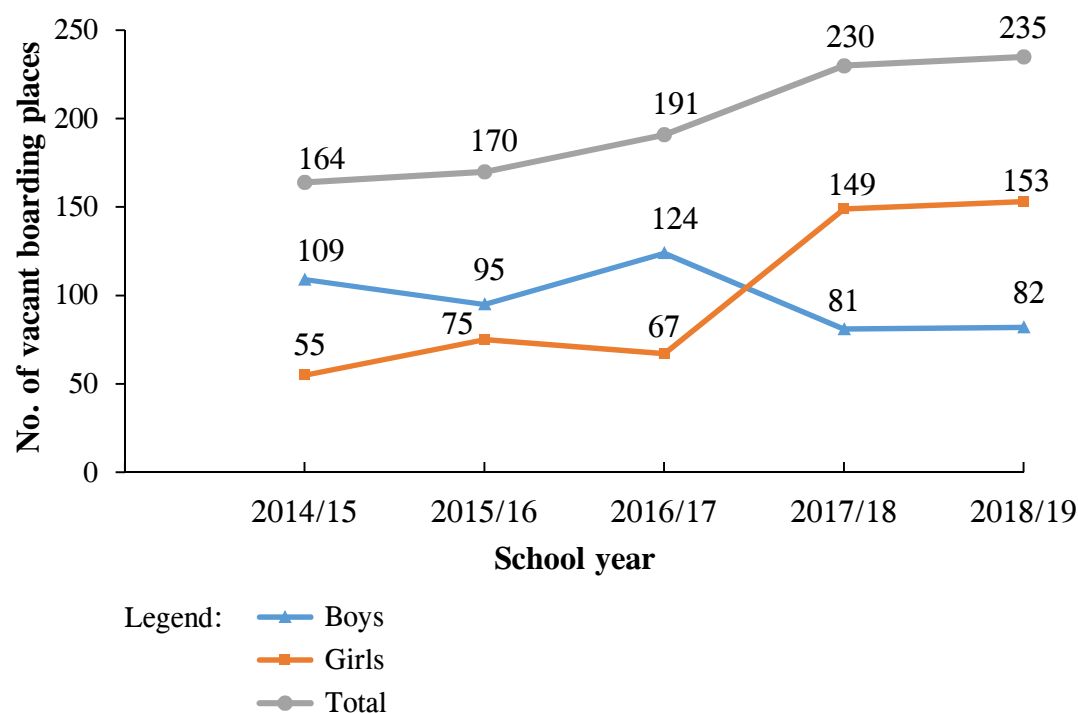
School year	Utilisation of boarding places in SSDs		
	Boys	Girls	Overall
2014/15	76%	73%	75%
2015/16	79%	63%	74%
2016/17	73%	67%	71%
2017/18	82%	45%	68%
2018/19	82%	43%	68%

Source: Audit analysis of EDB and SWD records

Remarks: Utilisation is calculated by dividing the sum of enrolment and the number of students with boarding places already made available to them by the capacity.

Figure 3

Number of vacant boarding places in SSDs analysed by gender
(2014/15 to 2018/19)



Source: Audit analysis of EDB and SWD records

2.27 Audit noted that in view of the decline in the utilisation of boarding places in SSDs for girls, a SSD for girls redeployed 32 of its boarding places to serve an extended service target starting from 1 January 2019 (Note 19). To optimise the use of boarding places, SWD needs to keep in view the utilisation of boarding places in residential homes of SSDs and continue to take measures to make good use of the vacant boarding places where appropriate.

Note 19: Starting from 1 January 2019, a total of 32 boarding places of a SSD for girls have been redeployed to serve an extended service target, i.e. girls aged 12 to 21 with moderate to serious emotional and behavioural problems, and either studying in the community or working. This measure was initiated by SWD and the service operator in consultation with EDB.

Need to provide assistance to special schools in reviewing the boarding needs of existing boarders

2.28 Applications for boarding placement in special schools other than SSDs are processed by EDB instead of by individual special schools. According to EDB:

- (a) as the provision of boarding services is planned on a territory-wide basis, processing the applications by EDB would better utilise the boarding places to ensure that:
 - (i) all students admitted meet the boarding placement criteria (see para. 2.16(b));
 - (ii) the admission criteria are applied consistently; and
 - (iii) the actual supply and demand situation is timely updated for better co-ordination; and
- (b) to make more cost-effective use of the boarding places, EDB would review the boarding needs of the existing boarders at regular time interval. If their family situations had improved, their boarding places would be made available for other students with the most genuine needs.

2.29 EDB entrusted the special schools to ensure that boarding places were released by students who no longer have boarding needs, making such boarding places available for students with the most genuine needs. EDB has reminded special schools through different means (such as in the annual meetings with principals of special schools and when EDB referred students to special schools for boarding services) to conduct regular reviews of the boarding needs of their boarders. In July 2019, in response to Audit's enquiry, EDB informed Audit that:

- (a) special schools had developed their own school-based guidelines for conducting regular reviews of boarding needs of existing boarders. However, the schools expressed difficulties in conducting the reviews because the schools had difficulties verifying the family problems and situations of existing boarders, which changed from time to time; and

Provision and management of school places and boarding places

- (b) special schools were required to report to EDB the waiting situation of their boarding section in September, November, January, April and June of every school year. EDB would refer students to the special schools with boarding vacancies based on the information received. EDB did not have information on the number of boarding places that were made available as a result of the regular reviews conducted by schools.

To ensure that boarding services are provided to students with the most genuine needs, Audit considers that EDB needs to provide assistance to special schools in reviewing the boarding needs of existing boarders, such as issuing guidelines to schools on how to conduct regular reviews of the boarding needs of existing boarders.

Need to consider adopting more flexibility in placement arrangements of seven-day boarding service for students with SID or PD

2.30 The schools for children with VI, the school for children with HI, and SSDs accept boarders on a territory-wide basis. The prevailing placement mechanism of students to boarding services of the schools for children with MoID, children with SID and children with PD which provide boarding services on catchment area basis is as follows:

- (a) ***Five-day boarding service.*** There is a queue for each special school providing five-day boarding service. Parents are required to apply for a school whose catchment area covers their residence. A student will be offered a boarding place when it is available from the school; and
- (b) ***Seven-day boarding service.*** EDB maintains a central queue for seven-day boarding service. Parents are required to indicate their preference on schools:
 - (i) ***No preference on a particular school.*** If the parents of a student have no preference on a particular school, the student will be offered a boarding place as soon as it is available from any school regardless of the student's residential address; or

- (ii) ***Specifying a particular school.*** According to EDB, students with SID or PD have mobility problems and should reside in boarding section in the vicinity of their residential address as far as possible to facilitate arrangement for returning home when needed. Parents of students with SID or PD can only specify a school whose catchment area covers their residence. Parents of students with MoID can specify any school regardless of their residential address. Students will be offered a boarding place when a place from the specified school is available.

2.31 In response to Audit's enquiry, EDB informed Audit in September 2019 that the rationale behind the restriction for students with SID or PD applying for seven-day boarding service (i.e. can only specify a school whose catchment area covers the students' residence) was to even out the number of students waiting for seven-day boarding service of specific schools as far as possible. Audit considers that EDB needs to consider adopting more flexibility in the placement arrangements of seven-day boarding service for students with SID and students with PD.

Need to enhance transparency on the information of boarding places provided by special schools

2.32 Boarding places for students with MoID are not sufficient to meet the demand (see para. 2.21). Students with MoID need to wait for some time before boarding places are available to them (see para. 2.22). It will greatly facilitate the parents in their applications for boarding places if EDB enhances transparency on the number of and the average waiting time for boarding places provided by the special schools. Waiting time for boarding places at special schools has been a matter of concern for the public and the Legislative Council (Note 20). Audit noted that EDB did not release the number of and the average waiting time for boarding places provided by special schools. Audit considers that EDB needs to take measures to enhance transparency on the information of boarding places provided by special schools.

Note 20: *For example, during the examination of the Estimates of Expenditures for financial year 2016-17 in April 2016, and during a meeting of the Legislative Council in May 2018, Members of the Legislative Council raised enquiries on the waiting situation for boarding places in special schools.*

Audit recommendations

- 2.33 **Audit has *recommended* that the Secretary for Education should:**
- (a) **explore the feasibility of implementing measures with a view to making more efficient use of the boarding places and shortening the waiting time for seven-day boarding places in schools for children with SID, such as:**
 - (i) **converting some vacant five-day boarding places to seven-day boarding places; and**
 - (ii) **allowing students with SID waiting for seven-day boarding places to use vacant five-day boarding places temporarily before seven-day boarding places are available;**
 - (b) **step up EDB's efforts in exploring effective measures to increase the supply of new boarding places with a view to shortening the waiting time of students with MoID for boarding services;**
 - (c) **with a view to ensuring that boarding services are provided to students with the most genuine needs, provide assistance to special schools in reviewing the boarding needs of existing boarders, such as issuing guidelines to schools on how to conduct regular reviews of the boarding needs of existing boarders;**
 - (d) **consider adopting more flexibility in the placement arrangements of seven-day boarding service for students with SID and students with PD; and**
 - (e) **take measures to enhance transparency on the information of boarding places provided by special schools.**
- 2.34 **Audit has *recommended* that the Director of Social Welfare should keep in view the utilisation of boarding places in residential homes of SSDs and continue to take measures to make good use of the vacant boarding places where appropriate.**

Response from the Government

2.35 The Secretary for Education agrees with the audit recommendations in paragraph 2.33. He has said that:

- (a) EDB has all along been encouraging the special schools which offer five-day boarding services only to provide seven-day boarding places. EDB will introduce more support to schools to encourage their converting five-day boarding places to seven-day boarding places. EDB will also discuss with special schools the feasibility of offering vacant five-day boarding places as a temporary arrangement for students with SID who are waiting for seven-day boarding service;
- (b) several works projects to provide new boarding places for student with MoID are expected to be completed in the next few years. In the interim, EDB will continue to explore other feasible ways, such as making use of the space available in existing boarding sections of ID schools, to increase the supply with reference to the actual demand for the boarding places;
- (c) EDB will discuss with special schools the procedures for conducting school-based review of students' boarding needs. Guidelines will be issued accordingly;
- (d) as mentioned in paragraph 2.31, the rationale of setting the restriction is to even out the number of applications for seven-day boarding service in the schools for children with SID concerned. Nevertheless, EDB will explore the possibility of allowing parents of children with SID and children with PD to apply for seven-day boarding places in special schools whose catchment areas do not cover their residence while the aforementioned rationale can be maintained; and
- (e) EDB will take measures to enhance transparency on the information about provision of boarding places in special schools for public's reference.

Provision and management of school places and boarding places

2.36 The Director of Social Welfare agrees with the audit recommendation in paragraph 2.34. He has said that on top of the measures being implemented, SWD will continue to:

- (a) keep in view the utilisation of boarding places at SSDs; and
- (b) take measures to make good use of the vacant boarding places where appropriate.

PART 3: STAFFING OF SPECIAL SCHOOLS

3.1 This PART examines the staffing issues in special schools. Audit found room for improvement in the following areas:

- (a) wastage of special school teachers (paras. 3.2 to 3.6);
- (b) unfilled posts of specialist staff and non-specialist staff (paras. 3.7 to 3.15); and
- (c) professional training for special school teachers (paras. 3.16 to 3.26).

Wastage of special school teachers

3.2 In 2018/19, the establishment and staff strength of teachers for the 60 special schools were 1,945 and 1,880 respectively. EDB defines the wastage rate of teachers in special schools as the number of drop-out teachers (i.e. teachers who were serving in the special school sector in the preceding school year but no longer serving in the sector in the school year concerned) as a percentage of the total number of teachers in special schools in the preceding school year.

Need to closely monitor wastage rate of special school teachers

3.3 Audit examined the wastage rate of teachers in the period from 2014/15 to 2018/19 and found that:

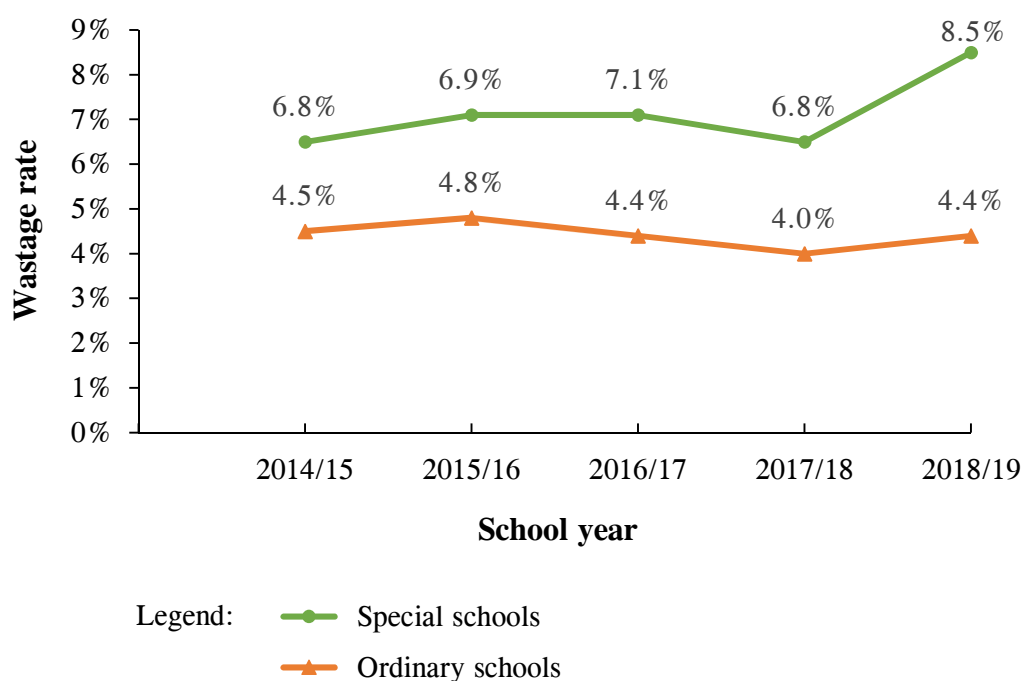
- (a) the wastage rate of teachers in special schools was higher than that for teachers in ordinary schools; and
- (b) while the wastage rate of teachers in ordinary schools was relatively stable ranging from 4% to 4.8%, the wastage rate of teachers in special schools had increased significantly from 6.8% in 2014/15 to 8.5% in 2018/19 (see Figure 4).

Staffing of special schools

According to EDB, given the much smaller number of teachers in special schools as compared with ordinary schools, a small turnover in terms of numbers will result in a wastage rate that is higher when put side by side with the wastage rate of teachers in ordinary schools.

Figure 4

Wastage rate of special school teachers (2014/15 to 2018/19)



Source: Audit analysis of EDB records

3.4 Audit considers that EDB needs to keep in view the wastage rate of special school teachers and, where necessary, explore appropriate measures to address the issue.

Audit recommendation

3.5 Audit has *recommended* that the Secretary for Education should keep in view the wastage rate of special school teachers and, where necessary, explore appropriate measures to address the relatively higher wastage rate of special school teachers.

Response from the Government

3.6 The Secretary for Education agrees with the audit recommendation. He has said that the ratio of graduate teacher posts in the special schools has been increased to 100% so as to enhance the quality of teaching and attract more talents. Additional manpower and resources have also been provided for special schools to support the teachers and to enhance their career development. EDB will keep in view the wastage rate of special school teachers and introduce relevant measures as appropriate.

Unfilled posts of specialist staff and non-specialist staff

3.7 In addition to teachers, special schools are also provided with specialist staff and non-specialist staff (see para. 1.9(a)) to cater for the specific needs of the students. EDB has not monitored the wastage rate for specialist staff and non-specialist staff.

Difficulties in filling posts of occupational therapists and physiotherapists

3.8 Specialist staff in special schools include OTs, occupational therapy assistants, PTs, nurses, braille staff, social workers, educational psychologists and speech therapists. For special schools with a boarding section, the specialist staff provided also include wardens, assistant wardens, nurses, houseparents and programme workers. In 2018/19, the establishment of specialist staff for the 60 special schools was 1,181 staff.

3.9 Among the various types of specialist staff, it was particularly difficult to have all OT and PT posts filled. To alleviate the recruitment difficulties of staff, in 2012/13, EDB allowed special schools to freeze the unfilled posts of OTs and PTs in return for cash grants for hiring short-term or part-time occupational therapy and physiotherapy services. Audit examined the number of unfilled posts for OTs and PTs and the respective percentages of the establishment in the period from 2014/15 to 2018/19. Audit found that the vacancy situation of OTs and PTs remained serious after some of the posts had been frozen (see Table 13):

Staffing of special schools

- (a) ***OTs.*** Each year the number of unfilled posts as a percentage of the establishment ranged from 22% to 49% (averaged 37%). After freezing some unfilled posts, the average percentage of vacant posts remained as high as 13%, ranging from 8% to 17%; and
- (b) ***PTs.*** Each year the number of unfilled posts as a percentage of the establishment ranged from 39% to 48% (averaged 44%). After freezing some unfilled posts, the average percentage of vacant posts remained as high as 15%, ranging from 10% to 22%.

Table 13

Number of unfilled posts for OTs and PTs
(2014/15 to 2018/19)

Year	Establishment	No. (percentage) of unfilled posts		
		Vacant posts (a)	Frozen posts (b)	Total (c) = (a) + (b)
OTs				
2014/15	60	10 (17%)	7 (11%)	17 (28%)
2015/16	59	10 (17%)	7 (12%)	17 (29%)
2016/17	59	5 (8%)	8 (14%)	13 (22%)
2017/18	98 (Note)	15 (15%)	33 (34%)	48 (49%)
2018/19	99	10 (10%)	34 (34%)	44 (44%)
Average	75	10 (13%)	18 (24%)	28 (37%)
PTs				
2014/15	60	9 (15%)	15 (25%)	24 (40%)
2015/16	59	13 (22%)	12 (20%)	25 (42%)
2016/17	59	6 (10%)	17 (29%)	23 (39%)
2017/18	59	6 (10%)	21 (36%)	27 (46%)
2018/19	60	9 (15%)	20 (33%)	29 (48%)
Average	59	9 (15%)	17 (29%)	26 (44%)

Source: Audit analysis of EDB records

Note: Prior to 2017/18, OTs were only provided to schools for children with PD and SID. Starting from 2017/18, OTs have also been provided to all special schools except the Hospital School and SSDs. This led to the increase in the establishment of OTs.

Staffing of special schools

3.10 Audit noted that since 2011, the Hong Kong Special Schools Council (HKSSC — Note 21) had repeatedly reflected the difficulties in filling OT and PT posts in its meetings with EDB. During the meetings held in March 2017 and July 2018 with EDB, HKSSC stated that the following factors might have resulted in the recruitment difficulties of OTs and PTs:

- (a) more attractive remuneration package was offered by other non-governmental organisations and the Hospital Authority (HA); and
- (b) the working years and experience of OTs and PTs in special schools might not be recognised by HA.

Audit considers that EDB needs to take measures to address the difficulties faced by special schools in filling OT and PT posts with a view to better catering for the needs of the students studying in special schools.

High vacancy of some types of non-specialist staff

3.11 Non-specialist staff in special schools include clerks, clerical assistants, teacher assistants, artisans, drivers and workshop attendants. For special schools with a boarding section, the non-specialist staff provided also include cooks and watchmen. In 2018/19, the establishment of non-specialist staff was 792 staff.

3.12 Audit examined the vacancy of different types of non-specialist staff in 2018/19 and found that high vacancy rates existed in four types of non-specialist staff, namely teacher assistants (18%), cooks (16%), workshop attendants (15%) and watchmen (12%) (see Table 14).

Note 21: *HKSSC comprises special schools of all types in Hong Kong. The purpose of the Council is to: (a) promote the development of special schools and special education in Hong Kong; (b) promote the interests of special schools, including their students and staff; (c) serve as a bridge between its member schools and EDB; and (d) organise various types of activities that promote professional development and cooperation.*

Table 14

Number of establishment and vacancy of non-specialist staff analysed by post (2018/19)

Non-specialist staff	Establishment (a)	No. of posts vacant (b)	Vacancy rate (c) = (b)/(a) × 100%
Teacher assistants	358	63	18 %
Cooks	89	14	16 %
Workshop attendants	34	5	15 %
Watchmen	42	5	12 %
Others (Note)	269	18	7 %
Overall	792	105	13 %

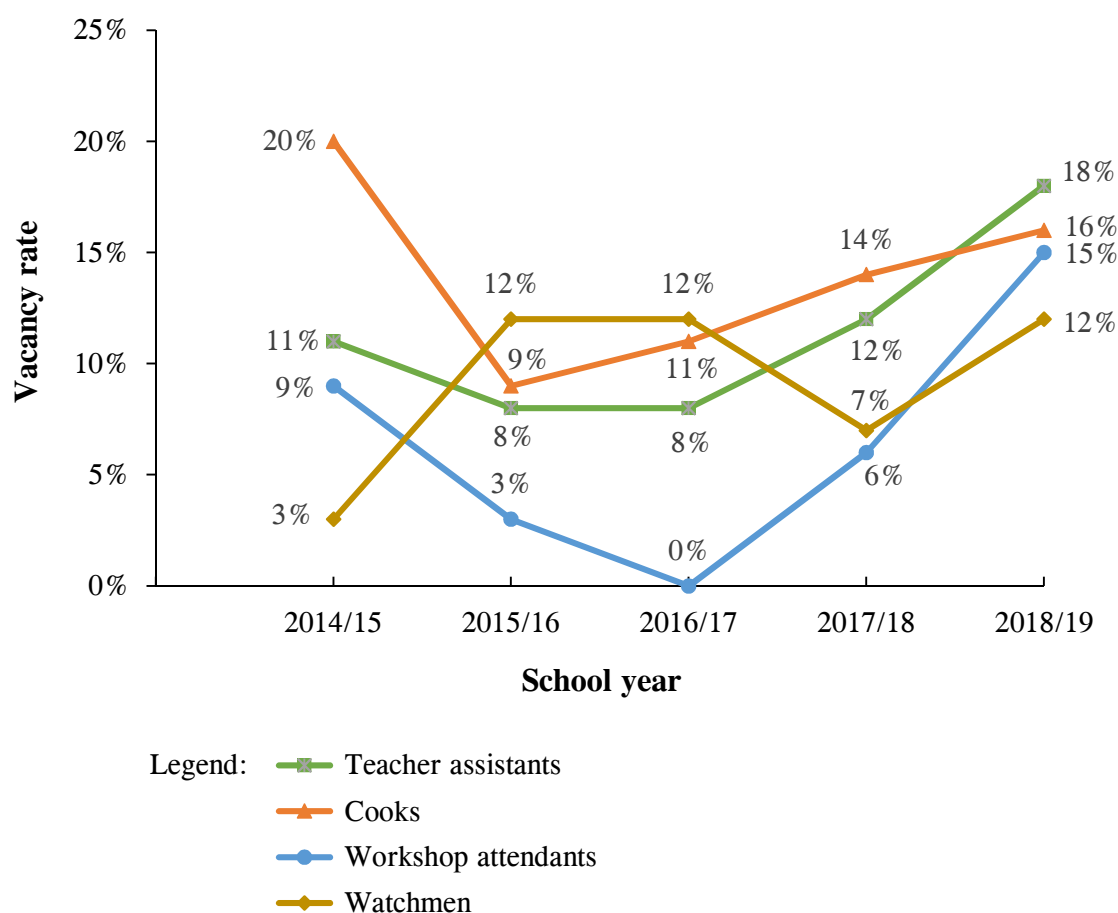
Source: Audit analysis of EDB records

Note: Other non-specialist staff include clerical staff, laboratory technicians, artisans and drivers.

3.13 Audit analysed the vacancy rates of the four types of non-specialist staff for the period 2014/15 to 2018/19 and found that the vacancy rates of three of the four types of non-specialist staff (i.e. except watchmen) had shown an increasing trend since 2016/17 (see Figure 5). Audit considers that EDB needs to monitor the vacancy situation of non-specialist staff in special schools and take measures to reduce the vacancy rate where necessary with a view to mitigating the adverse impacts on the operations of special schools due to staff shortage.

Figure 5

**Analysis of four types of non-specialist staff with high vacancy rates
(2014/15 to 2018/19)**



Source: Audit analysis of EDB records

Audit recommendations

3.14 Audit has *recommended* that the Secretary for Education should:

- take measures to address the difficulties faced by special schools in filling OT and PT posts; and
- monitor the vacancy situation of non-specialist staff in special schools and take measures to reduce the vacancy rate where necessary.

Response from the Government

3.15 The Secretary for Education agrees with the audit recommendations. He has said that:

- (a) the difficulties of filling OT and PT posts are faced by various sectors, including special schools. The main reason is due to the insufficient manpower supply in the market. EDB will pass to the Food and Health Bureau the manpower demand for OT and PT in the school sector so that the Bureau can take such information into account when drawing up the specific manpower requirements under the triennial planning exercise of the University Grants Committee (UGC), thereby increasing the manpower-planned places for OT and PT programmes offered by UGC funded universities, and encourage self-financing post-secondary education sector to offer designated programmes through the Study Subsidy Scheme for Designated Professions/Sectors to nurture talent in support of specific industries with keen demand for human resources. To alleviate the recruitment difficulties of OT and PT, special schools may continue to freeze some of the OT and PT vacancies in exchange for cash grants to recruit temporary staff or hire related services; and
- (b) EDB will monitor the vacancy situation of non-specialist staff and consider providing more flexibility to special schools in freezing some of those unfilled posts in return for cash grants as appropriate.

Professional training for special school teachers

3.16 In 2007/08, EDB launched the teacher professional development framework on integrated education for both teachers of ordinary schools and teachers of special schools to enhance their professional capacity in catering for students with SEN. Under the framework, training courses pitched at three levels, namely Basic, Advanced and Thematic (BAT), are conducted (Note 22).

Note 22: *To enhance schools' flexibility in planning their manpower deployment, during the absence of teachers when they are attending professional training courses, both ordinary and special schools are provided with a grant for the employment of substitute teachers.*

Staffing of special schools

3.17 In view of the different educational needs of students enrolled in special schools, Training Course for Special School Teachers (TCSST) specifically offered to special school teachers has been launched since 2012/13. TCSST includes 240-hour theory-based lectures, comprising four modules:

- (a) theories, principles and practices in special education;
- (b) academic and learning support;
- (c) behavioural, emotional and social development support; and
- (d) sensory, communication and physical support.

In addition to lectures, a 6-month practicum will also be arranged in TCSST. Course tutors will organise lesson observations cum discussions, project work and experience sharing sessions for the participants to help them transfer the knowledge acquired into practical skills in the real classroom (see also Note 22 to para. 3.16).

Need to monitor the attainment of teacher training target

3.18 In 2018/19, to enhance the professional qualification of special school teachers, after consulting the special school sector, EDB set a teacher training target for all special schools, namely by the end of 2022/23, each special school should have 85% to 100% of its teachers having completed specified special education training (SET). Teachers are considered having completed SET after they have completed at least one of the following programmes:

- (a) TCSST;
- (b) a minimum of 240 hours of BAT courses; and
- (c) other structured training courses recognised by EDB as equivalent to TCSST.

3.19 EDB recognises teachers in special schools who have completed structured training courses that are equivalent to TCSST as teachers who have completed SET (see para. 3.18(c)). Under the prevailing mechanism, training information is submitted by teachers and endorsed by schools. EDB analysed such training information to assess whether the training courses were equivalent to TCSST. Audit noted that:

- (a) EDB had not promulgated the recognition criteria to help teachers and principals understand whether the courses attended by teachers were equivalent to TCSST; and
- (b) individual schools did not know the percentage of their teachers who had completed SET.

Audit considers that EDB needs to promulgate the recognition criteria of training courses that are equivalent to TCSST to facilitate special schools to take measures to achieve the teacher training target set by EDB. EDB also needs to regularly ascertain the percentage of teachers who have completed SET in each special school and monitor the progress of the special schools in attaining the target of 85% to 100% by 2022/23.

Need to increase the number of training places of TCSST

3.20 Since the introduction of TCSST in 2012/13, 40 training places of TCSST have been provided by EDB each year. In the period from 2012/13 to 2018/19, 241 special school teachers completed TCSST.

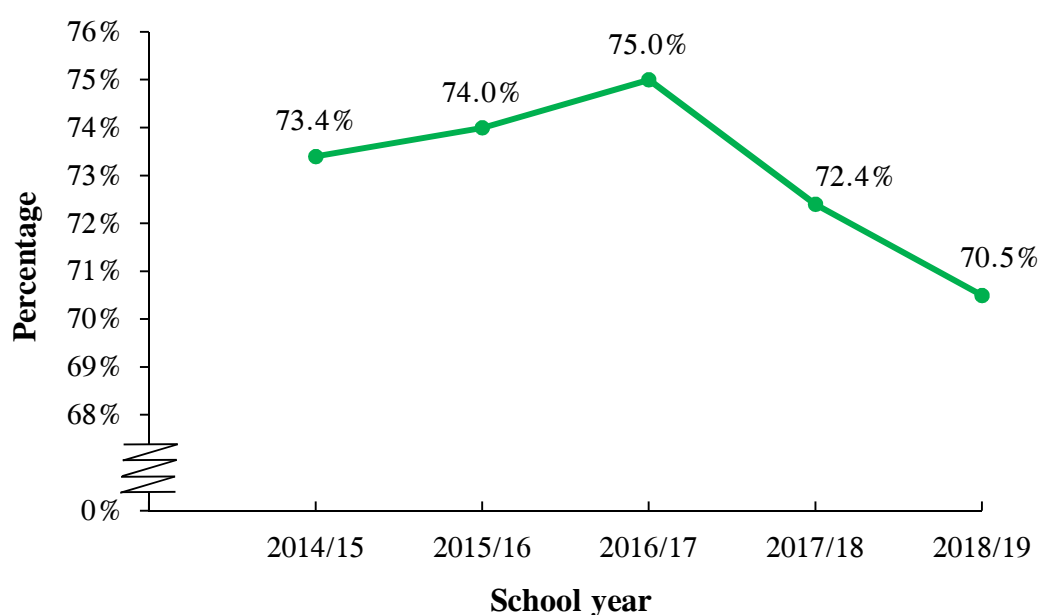
3.21 TCSST is specifically offered to special school teachers in view of the different educational needs of students enrolled in special schools from those in ordinary schools and feedback on TCSST from the special school sector was good and positive. In 2018/19, all the 40 training places of TCSST were fully enrolled. To facilitate schools in achieving the teacher training target of 85% to 100% by 2022/23, Audit considers that EDB needs to keep in view the adequacy of TCSST training places for special school teachers and increase the number of training places where necessary.

Decreasing percentage of special school teachers with special education training qualification

3.22 The percentage of teachers in special schools with special education training qualification (Note 23) is one of the key performance measures in EDB's Controlling Officer's Report (COR). Audit examined the percentage of teachers in special schools with special education training qualification as reported in COR in the period from 2014/15 to 2018/19 and noted that the percentage increased from 73.4% in 2014/15 to 75% in 2016/17 and then decreased to 70.5% in 2018/19 (see Figure 6).

Figure 6

Percentage of special school teachers with special education training qualification (2014/15 to 2018/19)



Source: Audit analysis of EDB records

Note 23: Teachers with special education training qualification refer to those who have attended training courses such as BAT courses, TCSST or other relevant training programmes endorsed by schools (see para. 3.24).

3.23 Audit also noted that for the 60 special schools in 2018/19:

- (a) there were 7 (11.6%) schools having less than half of the teachers with special education training qualification (see Table 15); and
- (b) the average percentage of teachers with special education training qualification was 70.5%, ranging from 35% to 95%.

In response to Audit's enquiry, EDB informed Audit in September 2019 that the decrease in percentage of special school teachers with special education training qualification from 2017/18 to 2018/19 was due to the increase of teacher-to-class ratio for public sector primary and secondary schools (including special schools) by 0.1 in July 2017. Schools might have recruited some teachers who had yet to obtain the special education training qualification.

Table 15

Percentage of special school teachers with special education training qualification (2018/19)

Percentage	No. of schools (percentage)
30% to <40%	2 (3.3%) } 7 (11.6%)
40% to <50%	5 (8.3%) }
50% to <60%	7 (11.6%)
60% to <70%	13 (21.7%)
70% to <80%	15 (25.0%)
80% to <90%	16 (26.8%)
90% to 100%	2 (3.3%)
Total	60 (100.0%)

Source: Audit analysis of EDB records

3.24 The percentage of special school teachers with special education training qualification reported in COR was compiled based on the training information submitted by teachers. Such information included various training courses attended by the teachers such as BAT courses, TCSST, or other relevant special education training programmes. Audit noted that EDB had not promulgated the criteria for recognising other relevant training programmes as special education training qualification. With a view to enhancing the professional capacity of special school teachers in catering for their students, Audit considers that EDB needs to take measures to increase the percentage of special school teachers with special education training qualification. EDB also needs to promulgate the criteria for recognising training programmes as special education training qualification and use the criteria as the basis in the performance measurement and reporting in EDB's COR as appropriate.

Audit recommendations

3.25 **Audit has *recommended* that the Secretary for Education should:**

- (a) **promulgate the recognition criteria of training courses that are equivalent to TCSST to facilitate special schools to take measures to achieve the teacher training target set by EDB;**
- (b) **regularly ascertain the percentage of teachers who have completed SET in each special school and monitor the progress of the special schools in attaining the target of 85% to 100% by 2022/23;**
- (c) **keep in view the adequacy of TCSST training places for special school teachers and increase the number of training places where necessary;**
- (d) **take measures to increase the percentage of special school teachers with special education training qualification; and**
- (e) **promulgate the criteria for recognising training programmes as special education training qualification and use the criteria as the basis in the performance measurement and reporting in EDB's COR as appropriate.**

Response from the Government

3.26 The Secretary for Education agrees with the audit recommendations. He has said that:

- (a) EDB has been analysing internally the percentage of special school teachers with special education training qualification according to a set of course recognition criteria. EDB will promulgate the recognition criteria of special education training courses for special schools' reference and use this as the basis of the performance measurement given in EDB's COR as appropriate; and
- (b) EDB will closely monitor the progress of training target achieved by individual special schools and increase the number of training places of TCSST provided in the coming school years if necessary. At the same time, EDB will encourage special school teachers to attend the training courses so that the training target can be attained in or before 2022/23.

PART 4: GRANTS AND SUPPORT FOR SPECIAL EDUCATION

4.1 This PART examines EDB's grants and support for special education, focusing on the following areas:

- (a) Tripartite Model of Support (paras. 4.2 to 4.7);
- (b) grants provided to cater for special school students with medical complexity (paras. 4.8 to 4.16);
- (c) funding support for meeting recurrent expenses on furniture and equipment (paras. 4.17 to 4.22); and
- (d) school leaving arrangements for special school students (paras. 4.23 to 4.30).

Tripartite Model of Support

4.2 Since 2009/10, EDB has adopted the Tripartite Model of Support (TMS) to enhance the communication and collaboration with special schools as well as strengthen professional development of teachers. TMS is structured according to a threefold mechanism:

- (a) ***Cross-Sector Communication.*** It is attained through theme-based visits to special schools in every school year by EDB (on themes such as Implementation of Information Technology in Learning and Teaching, and Catering for Students' Learning Diversity) to understand the latest development and educational outcomes of the schools;

- (b) ***Network Enhancement.*** It is delivered in the mode of learning circles among participating special schools. Through specifically defined teaching topics, such as in Mathematics and General Studies, the participating schools in the learning circles are to experiment or review the implementation of various learning and teaching strategies together so as to enhance teaching effectiveness; and
- (c) ***Individual Development Programme.*** Some special schools are invited by EDB to participate in the Individual Development Programme. These schools are nominated based on EDB's assessments during visits to the schools. The Programme focuses on upgrading learning and teaching of the participating schools through specific projects.

Need to encourage participation in sharing sessions

4.3 Under the Cross-Sector Communication of TMS, EDB conducts theme-based visits to special schools every school year to establish and sustain a communication platform with them. Since 2016/17, EDB has arranged a sharing session for special schools after the theme-based visits of each school year to disseminate the good practices of learning and teaching and to promote professional development among personnel of special schools. In the period from 2016/17 to 2018/19, four sharing sessions were held covering the theme-based visits conducted from 2014/15 to 2017/18. Audit examination found that the percentage of special schools participating in the sharing sessions was not high, ranging from 45.9% to 70.0% and averaging 54.4%. Audit considers that EDB needs to take appropriate measures to encourage schools' participation.

Participation in learning circles not high

4.4 Learning circles are arranged under the Network Enhancement of TMS. All special schools are invited to apply and EDB selects the schools for participation in learning circles based on their development needs. Through a specifically defined theme of "Application of Theory of Variation through Lesson Study for Special Schools", the participating schools experiment or review the implementation of various learning and teaching strategies together in the learning circles through workshops, sharing and meetings, etc.

Grants and support for special education

4.5 In the period from 2013/14 to 2017/18, each year EDB selected 8 special schools and grouped them into 2 learning circles. During the period, 10 learning circles were arranged with 40 participation opportunities. Audit examined the participation in the learning circles by the 60 special schools that were in operation during the full period from 2013/14 to 2017/18 and noted that:

- (a) 33 (55%) did not apply for the participation in the learning circles; and
- (b) the yearly average number of schools submitted an application was 10.6, ranging from 8 to 14 schools each year.

Audit noted that the theme of the learning circles has remained unchanged for the period from 2013/14 to 2017/18. In response to Audit's enquiries, EDB informed Audit in July 2019 that they were conducting a review of the learning circles (including the theme). Audit considers that EDB needs to enhance the attractiveness of the learning circles by adopting different themes for the learning circles, taking into account special schools' needs so as to better meet their needs and to facilitate their professional development.

Audit recommendations

4.6 **Audit has *recommended* that the Secretary for Education should:**

- (a) **take appropriate measures to encourage special schools' participation in sharing sessions under Cross-Sector Communication of TMS; and**
- (b) **enhance the attractiveness of the learning circles under Network Enhancement of TMS by adopting different themes for the learning circles, taking into account special schools' needs so as to better meet their needs and to facilitate their professional development.**

Response from the Government

4.7 The Secretary for Education agrees with the audit recommendations. He has said that:

- (a) all along, different sections of EDB organise various professional development activities for special schools every school year. Special schools arrange relevant teachers and staff to participate in the support programmes, seminars, workshops, experience sharing sessions, etc. based on their school-based developmental needs. EDB will continue to take measures to encourage special schools' participation in the sharing sessions under Cross-Sector Communication of TMS; and
- (b) EDB continuously reviews the relevance and effectiveness of various support programmes. In determining the participation of any professional development activities, special schools will consider a number of school-based factors, such as the schools' development needs at different stages and their individual major areas of concern. EDB will review the implementation of TMS, in particular the Network Enhancement, to better address the special schools' needs on professional development.

Grants provided to cater for special school students with medical complexity

4.8 Many special school students suffer from one or more medical conditions. Based on the criteria formulated jointly with HA, EDB has a pre-defined list of medical conditions that can be classified as medical complexity (MC). MCs refer to students with:

- (a) ***Severe chronic condition.*** This refers to the presence of one or more chronic clinical life-long conditions that are severe and/or associated with medical fragility, such as severe neurologic impairments, severe respiratory problems, complex cardiac conditions and severe behavioural problems;
- (b) ***Functional limitations.*** Functional limitations refer to conditions that require assistance from technology, such as feeding tube or ventilator supports;

Grants and support for special education

- (c) *Special medical care needs.* These refer to substantial health care service needs such as medical care and specialised therapy; and
- (d) *Frequent or prolonged health care use.* This refers to projected high utilisation of health care resources, such as frequent or prolonged hospitalisation, multiple surgeries or ongoing involvement of multiple services.

4.9 To provide support to special schools in handling students with medical issues, EDB has provided the Additional Support Grant for Enhancing the Support for Boarders with Medical Complexity in Aided Special Schools (hereinafter referred to as Boarder MC Grant) since 2014/15. It is provided to special schools with boarding sections. In 2017/18, EDB extended the Boarder MC Grant to day students and day students cum boarders with MC by providing the Additional Support Grant for Day Students and Day Students cum Boarders with Medical Complexity (hereinafter referred to as Day MC Grant). Schools with and without boarding sections for children with MoID, children with SID, children with PD, children with HI and children with VI are eligible. EDB will consider the suspected students with MC put up by special schools based on the feedback from HA on the medical situation of the students:

- (a) for suspected paediatric cases, the medical assessment is conducted by HA and arranged through EDB; and
- (b) for suspected psychiatric cases, schools have to submit their requests for medical information to HA directly.

4.10 The grants are provided to special schools in accordance with the number of students with MC, their tier of support, and the type of boarders (i.e. five-day or seven-day) in the case for the Boarder MC Grant. There are two tiers of supports. Students requiring Tier 2 support are students with MC conditions more severe than those requiring Tier 1 support. The rates of the grants are adjusted annually in accordance with the movement of the Composite Consumer Price Index. Special schools can use the grants for employing additional staff such as health care workers, procuring health care services or arranging staff training. For 2018/19, the amounts of grant under the Boarder MC Grant and the Day MC Grant are as follows:

- (a) **Boarder MC Grant.** The grants per five-day boarder with MC requiring Tier 1 and Tier 2 supports were \$16,524 and \$27,540 per annum respectively, and the grants per seven-day boarder with MC requiring Tier 1 and Tier 2 supports were \$33,049 and \$55,081 per annum respectively, subject to a minimum provision of \$176,259 per school per annum (i.e. a school would be granted \$176,259 even if it had only one boarder with MC). The total amount of Boarder MC Grant provided to special schools in 2018/19 was \$10.4 million; and
- (b) **Day MC Grant.** The grants per day student or day student cum boarder with MC requiring Tier 1 and Tier 2 supports were \$8,263 and \$13,771 per annum respectively, subject to a minimum provision of \$176,259 per school per annum. The total amount of Day MC Grant provided to special schools in 2018/19 was \$8.1 million.

In recent years, there were more and more students meeting the medical conditions for MC grants. The number of students meeting the medical conditions for the Boarder MC Grant increased by 128 (66%) from 193 in 2014/15 to 321 in 2018/19. The number of students meeting the medical conditions for the Day MC Grant increased by 82 (25%) from 330 in 2017/18 to 412 in 2018/19.

Need to ensure that the amount of Day MC Grant is adequate to meet the needs of special schools

4.11 The Day MC Grant was launched in 2017/18. To be eligible for the Day MC Grant, special schools are required to complete an application form based on the medical information sheet of individual students with MC provided by HA or Department of Health (DH) (Note 24) and submit the application form to EDB by January each year. The medical assessment for suspected paediatric cases by HA is arranged through EDB. Audit noted that:

- (a) in August 2017, EDB conducted survey to collect information of suspected day students with MC from special schools. A total of 352 suspected paediatric cases were reported by 33 schools;

Note 24: *To facilitate the schools in applying for Boarder MC Grant and Day MC Grant, the child assessment services of DH provide relevant medical information of children with MC when referring them for special school placement.*

Grants and support for special education

- (b) in September 2017, in a meeting between EDB and HA, HA advised EDB that:
 - (i) HA was facing acute shortage of manpower and there were difficulties in providing assessment support to the suspected day students with MC;
 - (ii) the assessment support to the suspected day students with MC for the Day MC Grant would be a one-off ad hoc task;
 - (iii) for special schools with no boarders with MC, HA would assess one suspected day student with MC from each school so as to facilitate the schools to apply for the minimum provision of the Day MC Grant; and
 - (iv) for special schools with day students cum boarders with MC eligible, their suspected non-boarder day students with MC would not be given priority in this ad hoc task (Note 25);
- (c) in October 2017, EDB requested special schools to resubmit the information of their suspected day students with MC. Only 90 cases were submitted by 23 schools, dropping by 262 (74.4%) from 352 cases submitted by schools in August 2017. EDB submitted the 90 cases to HA for medical assessment; and
- (d) similar situation recurred for the processing of the Day MC Grant in 2018/19. In September 2018, a total of 265 paediatric cases were reported by 32 schools. In October 2018, only 6 cases were submitted by 3 schools, dropping by 259 (97.7%) from 265 cases submitted by schools in September 2018.

Note 25: *Day students cum boarders with MC are also eligible for the application of the Day MC Grant. Therefore, the schools concerned can at least apply for the minimum provision of the Day MC Grant even if their suspected non-boarder day students with MC are not assessed.*

4.12 A school can receive the minimum provision of the Day MC Grant if at least one student meets the medical conditions for the Grant. In July 2019, in response to Audit's enquiry, EDB informed Audit that:

- (a) the minimum provision was roughly equal to the provision for 21 cases of Tier 1 support or 12 cases of Tier 2 support; and
- (b) only special schools which might be eligible for amount of grant more than the minimum needed to submit additional suspected case for assessments.

4.13 In response to Audit's enquiry, HA informed Audit in October 2019 that:

- (a) in 2013, data provided by EDB showed that there were 600 handicapped students receiving boarding services in 17 special schools. In 2014/15, there were 21 special schools with boarding sections requiring HA supporting children with MC who were under their boarding services. Noting the increasing demand for discharge planning and post-discharge support for these children with MC and the increasing health care complexity of these children and complex care tasks required, e.g. management of gastrostomy, feeding and tracheostomy, etc., HA took the initiative to provide carer training in the special schools and continuous support on the caring needs of these children with MC. The aim was to enhance the capability of these special schools to cope with the increasing demand of these children with MC under their boarding services;
- (b) since 2014-15, HA has implemented the Children with Medical Complexity Community Support Programme (CCSP) with an aim to support care of children with MC in the community. With additional resources from the Government via the Resource Allocation Exercise, a total of eight Advanced Practice Nurses were recruited for 2014-15 and 2016-17 to serve as CCSP Coordinators for providing the service, including two visits per year to each boarding child with MC in special schools, formulating care plan and updating medical information of children with MC to EDB, providing health talks and train-the-trainer programmes to empower school staff in taking care of children with MC in the boarding sections of 21 special schools; and

Grants and support for special education

- (c) upon the launch of Day MC Grant in 2017/18, EDB had an ad hoc meeting with HA in September 2017 to discuss their request for HA to provide medical assessment to suspected MC students in the additional 19 day special schools. At the meeting, HA explained to EDB that as CCSP aimed to cover special schools with boarding sections, CCSP Coordinators would not have capacity to provide medical assessments to all suspected cases in both day and boarding special schools. Notwithstanding this, HA, on the basis of goodwill as well as not jeopardising the existing CCSP services for children with MC in the boarding sections of 21 special schools, agreed to provide a one-off ad hoc medical assessment in 2017 and 2018 for students suspected with MC in the additional 19 day special schools to facilitate the schools to apply for the minimum provision of the Day MC Grant.

4.14 Audit considers that the situation can be improved because:

- (a) in view of the large number of suspected cases initially reported by special schools, the actual number of day students with MC may be much higher if all suspected cases were assessed. Some schools may be eligible for additional amount of the Day MC Grant but have not submitted the suspected MC cases even though they may be entitled to grant more than the minimum; and
- (b) the arrangement with HA for conducting medical assessments remains a one-off ad hoc task. The processing of the Day MC Grant will be seriously affected should HA cease to conduct medical assessment for paediatric cases of suspected day students with MC.

EDB needs to, in collaboration with HA, take measures to ensure that special schools are provided with Day MC Grant that can adequately meet their needs. For example, EDB needs to explore with HA the feasibility of regularising the medical assessment arrangement and explore the feasibility to conduct medical assessments for more suspected day students with MC.

Audit recommendation

4.15 Audit has *recommended* that the Secretary for Education should, in collaboration with the Chief Executive of HA, take measures to ensure that special schools are provided with Day MC Grant that can adequately meet their needs.

Response from the Government

4.16 The Secretary for Education agrees with the audit recommendation. He has said that EDB has all along been working closely with HA to review the assessment mechanism that has been in place since 2017/18. EDB will continue to explore with HA the feasibility of regularising the medical assessment arrangement and collect data from the eligible special schools to ensure that the Day MC Grant can meet their operational need.

Funding support for meeting recurrent expenses on furniture and equipment

4.17 To cater for the diverse needs of students with severe disabilities, special schools need to procure various furniture and equipment (F&E) items. EDB is responsible for the F&E cost for new special schools, and for reprovisioning, redevelopment or expansion projects of existing special schools. The F&E list and hence subsidy are determined by the new schools' needs and individual circumstances of the projects concerned. Regarding the funding support provided by EDB to cover the recurrent cost of F&E items procured using different funding sources, Audit noted that there were difficulties facing special schools.

Inconsistent provision of funding support for F&E procured using different funding sources

- 4.18 Recurrent cost of F&E items is covered by the following arrangements:
- (a) surplus of the block grant from EDB (Note 26) can be used to top up no more than 25% of recurrent cost arising from F&E items acquired through private donations or other fund-raising schemes; and
 - (b) for F&E items included in the F&E list for a school or acquired with the block grant, the school can use the block grant to fully cover the associated recurrent cost.

These arrangements apply to all schools including ordinary schools.

4.19 Some F&E items such as ceiling hoist (see Photograph 1 – Note 27) would greatly enhance the special schools' support provided to children with MC. Audit reviewed the funding support for ceiling hoist and noted that:

- (a) ceiling hoists were not included in the F&E list for special schools before 2016. According to EDB, most existing schools for children with PD and schools for children with SID had installed ceiling hoists in their schools using their own funding sources, such as private donations or other fund-raising schemes; and
- (b) in a recent school development project for a new special school for children with ID (MiID, MoID and SID) in Tung Chung (see para. 2.4(a)), EDB supported the inclusion of ceiling hoists in the F&E list (Note 28) for which

Note 26: *The block grant refers to the Expanded Operating Expenses Block Grant. It is provided as one block grant and schools are free to deploy the funding flexibly.*

Note 27: *There are two types of hoists, namely ceiling hoists (fixed on the ceiling or walls) and mobile hoists (wheel-based and either electric or manual run). Hoists allow a single caretaker to perform transfers of students with severe mobility problems. This reduces manual lifting and minimises stress or strain.*

Note 28: *EDB considered that ceiling hoists facilitate the work of administering daily care for the weak students with mobility problems and ensure the occupational safety of the care workers.*

the Financial Services and the Treasury Bureau approved on a project basis. EDB would be responsible for the cost of ceiling hoists for the new school.

Photograph 1

A ceiling hoist installed in the boarding section of a special school



*Source: Photograph taken by Audit on
3 June 2019*

4.20 Audit noted that the inclusion of ceiling hoists in the F&E list for the new special school in Tung Chung would give rise to inconsistent provision of funding support by EDB to existing special schools and the new special school:

- (a) ***Existing special schools.*** EDB was not responsible for the cost of ceiling hoists when the special schools were set up, reprovisioned or redeveloped. Schools could use the surplus of their block grant to cover no more than 25% of the recurrent cost of ceiling hoists that they acquired through their own funding sources; and
- (b) ***The new special school.*** EDB would be responsible for the cost of ceiling hoists for the new special school. The school could use its block grant to fully cover the recurrent cost of ceiling hoists.

Grants and support for special education

Audit considers that the inconsistent provision of funding support to existing special schools and the new special school regarding ceiling hoists needs to be addressed. EDB needs to consider measures to provide funding support to existing special schools to cover the recurrent cost of ceiling hoists as in the new special school. EDB also needs to consider ways to support special schools which had acquired F&E items through their own funding sources that were not in the schools' F&E list but were subsequently included in the F&E list of new special schools.

Audit recommendations

- 4.21 **Audit has *recommended* that the Secretary for Education should:**
- (a) **consider measures to provide funding support to existing special schools to cover the recurrent cost of ceiling hoists as in the new special school in Tung Chung; and**
 - (b) **consider ways to support special schools which had acquired F&E items through their own funding sources that were not in the schools' F&E list but were subsequently included in the F&E list of new special schools.**

Response from the Government

4.22 The Secretary for Education agrees with the audit recommendations. He has said that EDB will examine the existing provisions and explore feasible ways to streamline the arrangements of funding support to existing special schools to cover the recurrent cost of ceiling hoists and those included in the F&E list of the new special school as appropriate.

School leaving arrangements for special school students

4.23 Students of special schools will normally graduate upon completion of Secondary 6. Special schools will help their students plan and apply for post-school placements in accordance with their interests, capabilities and needs. According to EDB, special school leavers mainly have the following school leaving arrangements:

- (a) ***Employment in open market.*** This includes open market employment and Supported Employment administered by SWD, which is for persons with disabilities in employment to work in an integrated open setting with necessary support services;
- (b) ***Further studies.*** Further studies include local and overseas studies and enrolment in other institutions and programmes, such as the Hong Kong Institute of Vocational Education and Diploma Yi Jin Programme;
- (c) ***Vocational training.*** Vocational training includes enrolment in the Shine Skills Centre administered by the Vocational Training Council and the Integrated Vocational Training Centre administered by SWD;
- (d) ***Vocational rehabilitation services.*** Vocational rehabilitation services are administered by SWD. The services include Sheltered Workshop and the Integrated Vocational Rehabilitation Services Centre;
- (e) ***Day training or care services.*** These include Day Activity Centre, Care and Attention Home for Severely Disabled Persons and Supported Hostel administered by SWD; and
- (f) ***Other arrangements.*** Other arrangements include staying at home, staying in hospital for treatment, migration, enrolment in the Youth Employment and Training Programme, and other programmes offered by the Labour Department.

4.24 There are special circumstances where individual students may need to extend their years of study. In 2010/11, EDB implemented improvement measures on extension of years of study for special schools. It allows schools to exercise school-based professional judgment and arrange for students with such a need and valid reasons to extend their years of study. The valid reasons include:

- (a) the student having been absent from school for more than one-third of the total school days in a school year due to valid reasons, such as suffering from illnesses;

Grants and support for special education

- (b) the student has major disruptions in learning; and
- (c) the student experiences serious adaptation problems.

According to EDB, the three valid reasons cover most of the situations. However, a small number of students may wish to extend their years of study under special circumstances not covered by the three reasons. Schools may consider such cases on individual merits and allow the students to extend their years of study after taking into account a basket of factors. One of the factors that can be taken into account is that the student is facing difficulties in making school leaving arrangements.

Need to provide more assistance to students in school leaving arrangements

4.25 Audit examined the enrolment of special school leavers for vocational training, vocational rehabilitation services, and day training or care services for the period from 2013/14 to 2017/18 (see Table 16). Audit found that significant percentages of special school leavers who had applied for vocational rehabilitation services and day training or care services were on the waiting lists (ranging from 13.2% to 38.0% and 13.3% to 64.7% respectively).

Grants and support for special education

Table 16

Analysis of school leaving arrangements of special school leavers (2013/14 to 2017/18)

	No. of special school leavers (percentage)				
	2013/14	2014/15	2015/16	2016/17	2017/18
Vocational training					
Admitted	249 (96.1%)	225 (94.9%)	188 (96.9%)	220 (96.9%)	229 (95.4%)
Waiting	10 (3.9%)	12 (5.1%)	6 (3.1%)	7 (3.1%)	11 (4.6%)
Total	259 (100.0%)	237 (100.0%)	194 (100.0%)	227 (100.0%)	240 (100.0%)
Vocational rehabilitation services					
Admitted	80 (62.0%)	92 (86.8%)	82 (67.2%)	65 (65.0%)	96 (71.1%)
Waiting	49 (38.0%)	14 (13.2%)	40 (32.8%)	35 (35.0%)	39 (28.9%)
Total	129 (100.0%)	106 (100.0%)	122 (100.0%)	100 (100.0%)	135 (100.0%)
Day training or care services					
Admitted	85 (59.0%)	156 (86.7%)	108 (75.5%)	70 (51.9%)	49 (35.3%)
Waiting	59 (41.0%)	24 (13.3%)	35 (24.5%)	65 (48.1%)	90 (64.7%)
Total	144 (100.0%)	180 (100.0%)	143 (100.0%)	135 (100.0%)	139 (100.0%)

Source: Audit analysis of EDB records

Remarks: The numbers of leavers in this Table represented the positions as at 31 August of the respective school years.

Grants and support for special education

4.26 Audit also examined the reasons for special school students to extend their years of study for the period from 2013/14 to 2017/18. Audit found that:

- (a) only a minority of students had their years of study extended by schools due to the three valid reasons (see para. 4.24). In each of the five years from 2013/14 to 2017/18, these students represented 13.9% to 20.6% (averaging 18.3%) of the total number of students who extended their years of study; and
- (b) many students had their years of study extended by schools after their difficulties in school leaving arrangements were taken into account as one of the factors. In each of the five years from 2013/14 to 2017/18, these students represented 42.7% to 56.8% (averaging 48.6%) of the total number of students who extended their years of study (see Table 17).

Table 17

**Analysis of reasons for extension of years of study
(2013/14 to 2017/18)**

School year	No. of cases (percentage)			
	Three valid reasons (a)	Involving “difficulties in school leaving arrangements” (b)	Not involving “difficulties in school leaving arrangements” (c)	Total (d) = (a) + (b) + (c)
2013/14	145 (20.6%)	301 (42.7%)	259 (36.7%)	705 (100.0%)
2014/15	116 (18.2%)	304 (47.6%)	218 (34.2%)	638 (100.0%)
2015/16	118 (19.9%)	299 (50.4%)	176 (29.7%)	593 (100.0%)
2016/17	112 (18.5%)	286 (47.1%)	209 (34.4%)	607 (100.0%)
2017/18	79 (13.9%)	323 (56.8%)	167 (29.3%)	569 (100.0%)
Average	114 (18.3%)	302 (48.6%)	206 (33.1%)	622 (100.0%)

Source: Audit analysis of EDB records

4.27 Audit considers that the difficulties of special school students in school leaving arrangements warrant the Government's attention because:

- (a) many special school leavers were on waiting lists for vocational rehabilitation services and day training or care services. In particular, the number of leavers on the waiting list for day training or care services has increased by 31 (53%) from 59 in 2013/14 to 90 in 2017/18 (see Table 16 in para. 4.25); and
- (b) EDB considered that the three valid reasons should cover most of the situations for allowing special school students to extend their years of study. However, many students had their years of study extended by schools after their difficulties in school leaving arrangements were taken into account as one of the factors (see Table 17 in para. 4.26). This might defeat the original purpose of implementing the measures on extension of years of study for special schools.

Audit noted that since October 2017, EDB, SWD, HKSSC and the Vocational Training Council have met annually to exchange views and information of post-school places for special school students. Audit considers that EDB and SWD need to, in collaboration with other stakeholders, provide more assistance to special school students in their school leaving arrangements.

Audit recommendation

4.28 **Audit has *recommended* that the Secretary for Education and the Director of Social Welfare should, in collaboration with other stakeholders, provide more assistance to special school students in their school leaving arrangements.**

Response from the Government

4.29 The Secretary for Education agrees with the audit recommendation. He has said that EDB will work with SWD in accordance with the audit recommendation.

Grants and support for special education

4.30 The Director of Social Welfare agrees with the audit recommendation. He has said that SWD will continue to:

- (a) join EDB to strengthen the support for special school students on their school leaving arrangements through the annual meeting convened by EDB;
- (b) increase around 1,900 places of Day Activity Centre and Integrated Vocational Rehabilitation Services Centre from financial year 2019-20 to 2023-24; and
- (c) review and project the future demand for rehabilitation services for persons with disabilities, including special school leavers, through devising population-related planning ratios for long-term residential care and community care services.

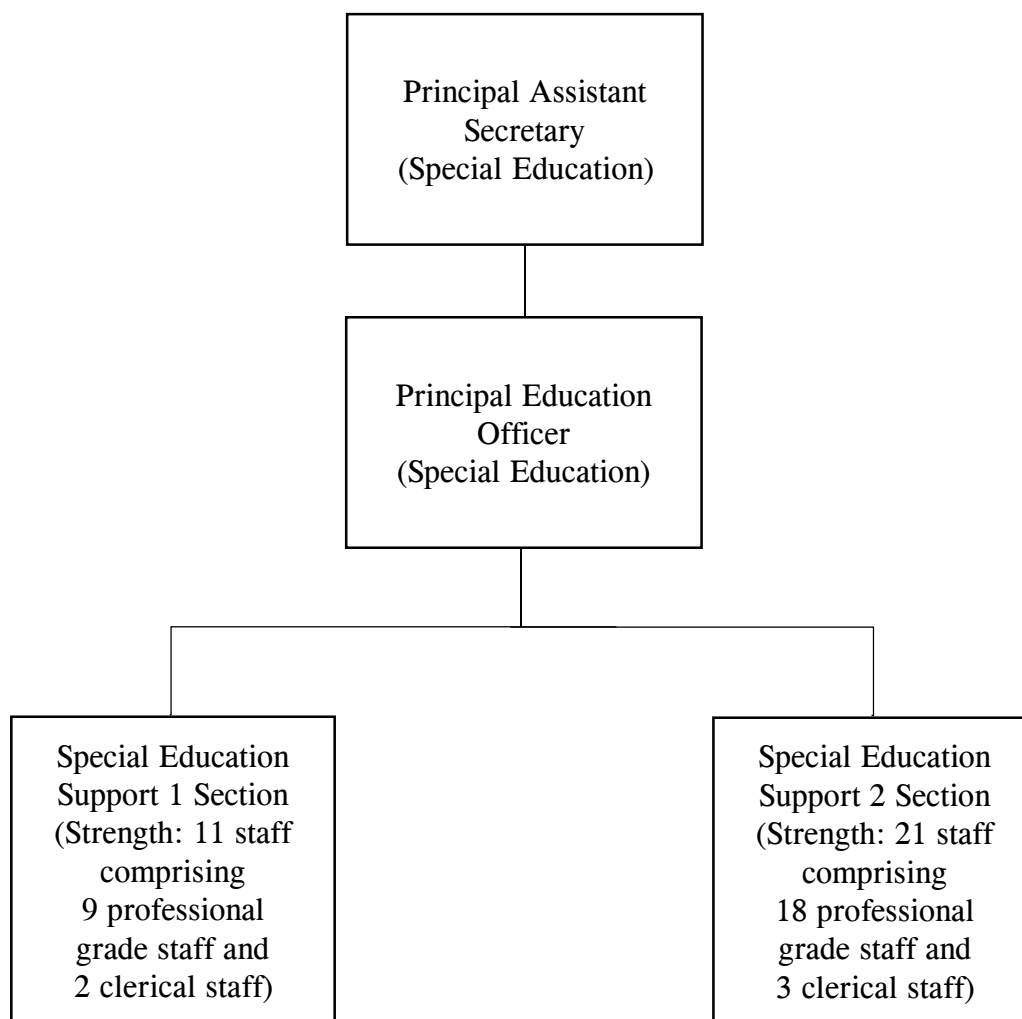
**Teacher-to-student ratios for special schools
(2018/19)**

School type	Teacher-to-student ratio (Note)
School for children with VI	1:2.6
School for children with HI	1:2.5
School for children with PD	1:4.0
School for children with ID	
— MiID	1:5.4
— MoID	1:3.7
— SID	1:3.4
SSD	1:3.2
Hospital School	1:4.3

Source: EDB records

Note: Teacher-to-student ratio is calculated based on the total number of teachers in the establishment and the actual number of students admitted to schools.

**EDB's Special Education Division:
Organisation chart (extract)
(30 June 2019)**



Source: EDB records

Remarks: Apart from the above two Special Education Support Sections responsible for special education services, the Special Education Division had another two Special Education Support Sections responsible for the implementation of integrated education. The Division also had five Educational Psychology Service Sections, a Speech and Hearing Services Section, and an Administration Section.

Acronyms and abbreviations

Audit	Audit Commission
BAT	Basic, Advanced and Thematic
CCRM	Central Co-ordinating Referral Mechanism
CCSP	Children with Medical Complexity Community Support Programme
COR	Controlling Officer's Report
DH	Department of Health
EDB	Education Bureau
F&E	Furniture and equipment
HA	Hospital Authority
HI	Hearing impairment
HKSSC	Hong Kong Special Schools Council
ID	Intellectual disability
MC	Medical complexity
MiID	Mild intellectual disability
MoID	Moderate intellectual disability
OT	Occupational therapist
PD	Physical disability
PT	Physiotherapist
SEN	Special Educational Needs
SET	Special education training
SID	Severe intellectual disability
SSD	School for social development
SWD	Social Welfare Department
TCSST	Training Course for Special School Teachers
TMS	Tripartite Model of Support
UGC	University Grants Committee
VI	Visual impairment

CHAPTER 6

Judiciary

**Judiciary Administration's work in
implementing projects under
Information Technology Strategy Plan**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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JUDICIARY ADMINISTRATION’S WORK IN IMPLEMENTING PROJECTS UNDER INFORMATION TECHNOLOGY STRATEGY PLAN

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.14
Audit review	1.15
General response from the Judiciary	1.16
Acknowledgement	1.17
PART 2: PROGRESS IN PROJECT IMPLEMENTATION AND PROBLEMS ENCOUNTERED	2.1 – 2.3
Progress in project implementation	2.4 – 2.7
Problems encountered during project implementation	2.8 – 2.24
Audit recommendations	2.25
Response from the Judiciary and the Government	2.26 – 2.28
PART 3: PROJECT GOVERNANCE	3.1 – 3.2
Change of governance structure	3.3 – 3.6

	Paragraph
Project monitoring	3.7 – 3.13
Reporting of project progress	3.14 – 3.18
Audit recommendations	3.19
Response from the Judiciary	3.20
 PART 4: OTHER RELATED ISSUES	 4.1
Provision of e-services	4.2 – 4.12
Audit recommendations	4.13
Response from the Judiciary	4.14
Enhancement of audio-visual presentation equipment in courtrooms	4.15 – 4.23
Audit recommendations	4.24
Response from the Judiciary	4.25
Promotion of the use of e-bundles	4.26 – 4.33
Audit recommendations	4.34
Response from the Judiciary	4.35

Appendices	Page
A : Courts and tribunals in Hong Kong (30 June 2019)	78 – 79
B : Judiciary: Organisation chart (extract) (30 June 2019)	80
C : Governance structure for implementation of Information Technology Strategy Plan (30 June 2019)	81
D : Acronyms and abbreviations	82

JUDICIARY ADMINISTRATION'S WORK IN IMPLEMENTING PROJECTS UNDER INFORMATION TECHNOLOGY STRATEGY PLAN

Executive Summary

1. The Judiciary, headed by the Chief Justice of the Court of Final Appeal, is responsible for the administration of justice in Hong Kong. It hears all criminal cases and civil disputes. The Judiciary Administration is headed by the Judiciary Administrator, who assists the Chief Justice in the overall administration of the Judiciary. It provides support to the courts in the administration of justice and their operations. The Judiciary uses information technology (IT) extensively to support its operations and services to the public. In 2011 and 2012, the Judiciary conducted an Information System Strategy Study which formulated an Information Technology Strategy Plan (ITSP) on the application of IT in support of its operations for the coming ten years and beyond. Under ITSP, the Judiciary seeks to implement by phases an integrated court case management system (iCMS) to integrate, streamline and standardise court processes across different levels of courts and tribunals, and to put in place a number of non-court systems to meet the Judiciary's operational requirements. The implementation of ITSP is divided into two phases:

- (a) Phase 1 comprises two stages. Stage 1 mainly covers IT infrastructure foundation and the development of iCMS for the District Court, the Summons Courts of the Magistrates' Courts and the related court offices. Stage 2 mainly covers the development of iCMS for the Court of Final Appeal, the High Court, the Competition Tribunal, the non-Summons Courts of the Magistrates' Courts and the Small Claims Tribunal; and
- (b) Phase 2 covers iCMS for the remaining courts and tribunals.

In May 2013, the Judiciary obtained the Legislative Council Finance Committee (FC)'s funding approval of \$682.4 million for the implementation of ITSP Phase 1, with scheduled completion dates for Stage 1 and Stage 2 in June 2016 and December 2019 respectively. The Audit Commission (Audit) has recently conducted a review to examine the Judiciary Administration's work in implementing projects under ITSP and other related issues.

Progress in project implementation and problems encountered

2. ***Delays in completion of projects under ITSP Phase 1.*** According to the 2013 FC paper, the implementation plan of ITSP Phase 1 comprised four activities. Audit examination found that as of June 2019, there had been slippages (ranging from 6 to 57 months) in all the four activities:

- (a) ***Activity A “Technical studies”.*** Technical studies were completed in April 2015, i.e. a delay of 10 months as compared with the original target completion date of June 2014;
- (b) ***Activity B “Implementation of IT infrastructure and Stage 1 court systems”.*** The implementation work, originally scheduled to be completed by June 2016, was still in progress. The revised target completion date was March 2021, i.e. a delay of 57 months;
- (c) ***Activity C “Implementation of non-court systems”.*** The implementation work, originally scheduled to be completed by June 2019, was still in progress. If compared with the revised target completion date of December 2019, there would be a delay of 6 months. However, based on information as of September 2019 provided by the Judiciary Administration, some non-court systems would only be progressively rolled out from December 2019 to September 2021, suggesting that Activity C would unlikely be completed by December 2019; and
- (d) ***Activity D “Implementation of Stage 2 court systems”.*** The implementation work, originally scheduled to be completed by December 2019, was only at a preliminary stage. If compared with the revised target completion date of September 2022, there would be a delay of 33 months. Moreover, the slippage of earlier Activities B and C might have knock-on effects on Activity D.

The Judiciary anticipated that the implementation of ITSP would bring about improvement in access to justice, workflow automation, operational efficiency, and improve services to court users and the community as a whole. There is a need for the Judiciary Administration to step up monitoring of the implementation of all projects under ITSP Phase 1 and expedite actions where possible to complete the

Executive Summary

outstanding projects with a view to reaping the full benefits as early as practicable (paras. 2.2, 2.4, 2.6 and 2.7).

3. ***Problems encountered during project implementation.*** Audit noted that in the course of implementing projects under ITSP Phase 1, the Judiciary Administration encountered the following key problems (para. 2.8):

- (a) ***Change of delivery mode and manpower shortage.*** On the advice of the Office of the Government Chief Information Officer (OGCIO), to reduce project risks, the Judiciary Administration in September 2013 changed the total outsourcing approach for the implementation of projects under ITSP to a hybrid one, i.e. outsourcing plus in-house efforts. As time and efforts were spent to discuss and plan for the change of delivery mode, the commencement of ITSP implementation was deferred from mid-2013 to early 2014 (para. 2.10). In this connection, Audit noted the following issues:
 - (i) ***Shortage and high turnover of contract staff.*** Arising from the change of delivery mode, it was necessary to engage 20 to 70 contract staff per year from 2013-14 to 2018-19. However, due to recruitment difficulties, there was a significant shortage of manpower at the rank of Analyst/Programmer, ranging from 2 to 32 staff (i.e. an average of 14 staff per annum) during the period. Moreover, the turnover rates of contract staff involved in the implementation of ITSP for the period from 2014-15 to 2018-19 were considerable, ranging from 6.8% to 33.7% (paras. 2.11, 2.13 and 2.14); and
 - (ii) ***Delays in hiring contractors.*** To address the manpower shortage, four outsourcing contractors were engaged to perform the programming and system development work of Stage 1 court systems. While the hiring process should be in parallel with the system analysis and design (SA&D) work so that the programming work could start immediately upon completion of SA&D, Audit noted that the hiring of the last outsourcing contractor was only completed in September 2016, i.e. four months after the completion of SA&D in May 2016 (para. 2.13);

Executive Summary

- (b) ***Long lead time in procurement of IT infrastructure.*** Under ITSP, the required hardware, software and services for upgrading the central IT facilities were procured through an open tender exercise. Due to an over-optimistic work schedule for tendering work involving the Government Logistics Department and the Department of Justice, there was a delay of 13 months in completing the tender exercise and awarding the contract (paras. 2.16 and 2.17);
- (c) ***Long time taken in developing Stage 1 court systems.*** The development of Stage 1 court systems generally involved three stages, namely: (i) collection of user requirements; (ii) SA&D; and (iii) implementation and user acceptance tests (UATs). Audit found that additional time had been taken to collect user requirements and complete SA&D, causing an overall delay of 11 months. Also, a substantial number of change requests (about 1,400 as of December 2017) were raised during UATs, resulting in a further delay of about two years (paras. 2.18 to 2.20); and
- (d) ***Engagement of prosecuting departments and agencies to prepare for the rollout of iCMS.*** At Stage 1 of ITSP Phase 1, iCMS would be implemented in the Summons Courts of the Magistrates' Courts. About 40 prosecuting departments and agencies were expected to migrate from the Judiciary's existing electronic platform to iCMS for submitting summons applications handled by the Summons Courts within a period of three years after the rolling out of iCMS in all the Magistrates' Courts. Since 2015, the Judiciary Administration had been engaging the prosecuting departments and agencies to prepare for the rollout of iCMS. Audit found that: (i) from June 2016 to August 2017, the Judiciary Administration held 19 engagement meetings with the prosecuting departments and agencies on the rollout of iCMS. However, internal notes of meeting were only prepared for 4 meetings; (ii) while another round of briefings to the prosecuting departments and agencies was planned to be held on the design and usage of the web portal in mid-2017, such briefings were only provided to two key prosecuting departments in January and August 2018 respectively; and (iii) there were a few unresolved issues between government departments on the setting up of system interface with iCMS, such as the one between the Hong Kong Police Force and the Transport Department relating to traffic-related offences, which had been discussed since 2016 and remained unresolved up to July 2019 (paras. 2.22 to 2.24).

Project governance

4. ***Governance structure of ITSP.*** The governance structure of ITSP can be broadly divided into two groups, i.e. one led by Judges and Judicial Officers (JJOs) and the other led by the Judiciary Administrator (the project owner of ITSP). The group led by JJOs mainly includes the Committee on Information Technology (CIT), which is the overarching body overseeing the development and implementation of ITSP at the strategic level. Three working groups are set up to advise CIT on various issues. The group led by the Judiciary Administrator mainly includes the Information Technology Strategy Plan Steering Committee (the Steering Committee), which is a dedicated administrative committee set up to oversee the detailed implementation of ITSP. The Steering Committee is supported by an Information Technology Strategy Plan Delivery and Assurance team (ITSP Delivery and Assurance Team) and a Programme Management Office. The Government Chief Information Officer participates in the Steering Committee as the Government's IT advisor. The terms of reference of CIT and the key roles and responsibilities of the Steering Committee are defined in the Programme Management Plan (paras. 1.10, 1.11 and 3.2).

5. ***Areas for improvement.*** Audit examination of the project governance of ITSP has revealed the following areas for improvement:

- (a) ***Need to review the governance structure of ITSP.*** According to the original governance structure endorsed by CIT in April 2013, the Steering Committee would monitor the implementation of ITSP at a strategic level, and project management responsibilities (such as committing project resources, and endorsing acceptance of project plans and deliverables) would be delegated to three project steering committees and their respective project assurance teams set up under the Steering Committee. In February 2014, the three project steering committees and their respective project assurance teams were grouped collectively under ITSP Delivery and Assurance Team. However, Audit found that the project management responsibilities had not been delegated to ITSP Delivery and Assurance Team. Therefore, the Steering Committee might need to arrange more frequent meetings to discharge its project management responsibilities. There is merit in reviewing the need for delegating some of the project management responsibilities to ITSP Delivery and Assurance Team to avoid overloading the Steering Committee (paras. 3.3 to 3.5);

Executive Summary

- (b) ***Need to ensure that any revisions to governance structure are properly endorsed.*** According to the Judiciary Administration, as the implementation of ITSP progressed, the ways and mechanism in overseeing its implementation might need to be adjusted to cater for its operational needs, particularly in light of experience and having regard to the nature of work required at different stages of the projects. For example, for the implementation of Stage 1 court systems, the relevant project study teams under the Steering Committee and the relevant advisory committees under CIT had been consolidated since May 2017. Audit however found that such revision had not been properly reflected in the Programme Management Plan endorsed by the Steering Committee (para. 3.6);
- (c) ***Need to convene timely meetings for the Steering Committee and provide more timely project progress updates to CIT.*** From May 2013 to June 2019, 15 Steering Committee meetings were held. Audit found that fewer meetings had been held since 2016 and the intervals between meetings had become longer. For CIT, the numbers of meetings held and ITSP-related papers issued to members were also on a decreasing trend from April 2013 to June 2019. In particular, from January 2018 to June 2019, no CIT meeting had been held and no ITSP-related papers had been issued to CIT members (paras. 3.8 and 3.10);
- (d) ***Need to improve timeliness of submission of monthly highlight reports and their quality.*** The Programme Management Office is required to provide the Steering Committee and ITSP Delivery and Assurance Team with a monthly highlight report on the overall progress of ITSP and any project risks, issues and change requests. Audit examination found that: (i) of 65 monthly highlight reports from March 2014 to July 2019, 46 (71 %) were not timely submitted in the following month; (ii) some of the monthly highlight reports tended to present over-optimistic overall project status; and (iii) all the 65 reports did not report project issues and change requests (para. 3.12); and
- (e) ***Need to maintain proper records on the Steering Committee's approvals of revisions of completion dates of project activities.*** Revision of completion dates of project activities is one type of project changes that should be approved at the Steering Committee's meetings. Audit examination of the papers and minutes of all the 15 Steering Committee meetings from May 2013 to June 2019 found that approvals for revision of

Executive Summary

completion dates of project activities had not been explicitly sought during the meetings (para. 3.13).

6. ***Annual progress reports to FC.*** The Government undertakes to provide FC Members with an annual progress report on the implementation of major computer projects (para. 3.14). Audit examination has revealed the following areas for improvement:

- (a) ***Need to report completion dates by stages.*** In all the five annual progress reports submitted to FC from 2014 to 2018, only the overall project completion date of ITSP projects (i.e. completion date of Stage 2 court systems) and narrative updates on the latest project status and achievements of key milestones were reported. In order to present a complete picture of the project progress, it is more desirable to report the scheduled/revised completion dates by stages (para. 3.16(a)); and
- (b) ***Need to ensure that completion dates reported are up-to-date.*** According to the information papers on ITSP progress update issued to members of the Steering Committee in January 2018, the overall completion date of implementing ITSP was deferred from December 2019 to June 2021. However, the overall completion date had not been updated in the annual progress report submitted to FC in October 2018 showing the position as of March 2018 (para. 3.16(b)).

7. ***Need to improve progress reports to OGCIO.*** The Judiciary Administration is required to submit progress reports for OGCIO to monitor the health status of the projects under ITSP (para. 1.12). Audit examination found that:

- (a) there were cases of omissions and delays in reporting revised/actual completion dates in the progress reports. For example, the completion date of Activity D (i.e. Implementation of Stage 2 court systems) was deferred in June 2017 but the revised completion date had not been reported in any progress reports submitted to OGCIO. Subsequently, the completion date was further deferred in January 2018 but the revised completion date was only reported in July 2018 (i.e. a delay of six months) (para. 3.18(a)); and

Executive Summary

- (b) there were also cases of not indicating approvals for revising the completion dates, not documenting analysis on project slippage, or reporting inaccurate revised completion dates in the progress reports (para. 3.18(b) to (d)).

Other related issues

8. ***Provision of e-services.*** The Judiciary's website provides information about schedules of court hearings and related matters mainly via the Daily Cause Lists and e-hearing date enquiry services. The website also provides other judicial information such as judgments of various levels of courts via the online Legal Reference System (paras. 4.5 and 4.7). Audit examination has revealed the following areas for improvement:

- (a) ***Need to consider improving dissemination of future hearing information.*** The Daily Cause Lists provide a more user-friendly enquiry function (i.e. a search could be conducted by party name in addition to case number) than the e-hearing date enquiry services. However, the information provided is for hearings on the next working day only. Users who wish to enquire information about future hearings can only conduct a search via the e-hearing date enquiry services provided that the case number is known (para. 4.6(a));
- (b) ***Need to consider enhancing search functions of Legal Reference System.*** Audit visited other legal reference websites in Hong Kong and other jurisdictions and noted that their search functions were more user-friendly. In particular, they allowed more search parameters to be used in a conjunctive manner and longer date range for search by date of judgment, and offered more options for sorting the list of judgments (para. 4.8);
- (c) ***Need to ensure accuracy of information uploaded onto the Judiciary's website.*** Audit visited the Judiciary's website and noted a few discrepancies in the provision of judicial information, such as inaccurate judgment date and update time of the Daily Cause Lists (para. 4.10); and
- (d) ***Need to improve mobile-friendliness of e-services.*** Audit noted that some e-services provided through the Judiciary's website had not been enhanced to adopt a "mobile-friendly design" to facilitate public access through mobile devices (para. 4.12).

Executive Summary

9. ***Need to provide enhanced/up-to-date audio-visual presentation systems (AVPS).*** Apart from IT systems which cover computers and their peripherals, various types of audio-visual equipment have been installed in courtrooms. As of January 2019, there were AVPS installed in 102 (49%) of 208 courtrooms for the playback of evidence in different formats through computers and media players, and the broadcasting of electronic documents to the public during hearings. According to a review conducted by the Judiciary Administration in 2016, about 47% of AVPS had been installed for over 10 years with outdated/obsolete devices. The outdated/obsolete AVPS did not support signals inputted from notebook computers or portable equipment brought in by court users and their display resolution was far behind the current audio-visual technology. For example, AVPS in 12 courtrooms of the District Court were equipped with small size monitors (ranging from 6.4 to 12 inches) and connected through analog signal cables. As of March 2019, 11 of the 12 courtrooms were still using outdated/obsolete AVPS (paras. 4.15, 4.17 and 4.18).

10. ***Need to expedite legislative amendments and consider promoting wider use of Electronic Bundles in Portable Document Format (EBPDF).*** To facilitate court proceedings, in 2011, the Judiciary made available the use of EBPDF at the High Court where paper bundles were scanned into portable document format for uploading to IT devices for JJOs and counsels to view and make notes and to conduct hearings with the use of EBPDF. Since 2016, users of the District Court have been able to submit hearing bundles via an e-submission platform. Audit found that the utilisation of EBPDF in the High Court and the District Court was very low from 2011 to 2018. In Audit's view, for improving operational efficiency and achieving environmental friendliness, there is merit in encouraging wider use of EBPDF at all levels of courts in the long run. As the existing legislation requires the submission of paper bundles to the court, the Judiciary Administration needs to expedite actions to complete the legislative amendments to remove such legal restrictions (paras. 4.28, 4.31, 4.32(b) and 4.33).

Audit recommendations

11. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Judiciary Administrator should:**

Executive Summary

- (a) step up monitoring of the implementation of all projects under ITSP Phase 1 and expedite actions where possible to complete the outstanding projects as early as practicable (para. 2.25(a));**
- (b) taking into account lessons drawn from the problems encountered during project implementation, enhance the planning and implementation of future IT projects (para. 2.25(b));**
- (c) improve the engagement work with the prosecuting departments and agencies in preparing for the rollout of iCMS (para. 2.25(c));**
- (d) consider reviewing the current governance structure of ITSP and ensure that any revisions are properly endorsed by the appropriate authority (para. 3.19(a));**
- (e) improve the project governance under ITSP and the reporting of project progress (para. 3.19(b) and (c));**
- (f) consider improving the dissemination of court hearing information through the Judiciary’s website and explore possible enhancements to the online Legal Reference System (para. 4.13(a) and (b));**
- (g) remind the Judiciary Administration’s staff to ensure the accuracy and consistency of information before uploading onto the Judiciary’s website (para. 4.13(c));**
- (h) enhance e-services by adopting a “mobile-friendly design” to facilitate public access through mobile devices (para. 4.13(f));**
- (i) take measures to ensure that enhanced/up-to-date AVPS are provided to support court proceedings (para. 4.24(a)); and**
- (j) expedite actions to complete the legislative amendments for using the electronic mode of handling court-related documents and consider whether and, if so, how best to promote the wider use of EBPf at various court levels in the long run (para. 4.34(a) and (b)).**

Executive Summary

Response from the Judiciary

12. The Judiciary Administrator generally agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 The Judiciary, headed by the Chief Justice of the Court of Final Appeal, is responsible for the administration of justice in Hong Kong. It hears all criminal cases and civil disputes, including disputes between individuals and the Government. The Judiciary is independent of the executive authorities and legislature. Different levels of courts and tribunals hear and adjudicate criminal cases and civil disputes. They comprise the Court of Final Appeal, the High Court (which includes the Court of Appeal and the Court of First Instance), the Competition Tribunal, the District Court (which includes the Family Court), the Lands Tribunal, the Magistrates' Courts (Note 1) (which include the Juvenile Courts — Note 2), the Coroner's Court, the Labour Tribunal, the Small Claims Tribunal, and the Obscene Articles Tribunal (see Appendix A for details).

Judiciary Administration

1.3 The Judiciary Administration is headed by the Judiciary Administrator, who assists the Chief Justice in the overall administration of the Judiciary. It provides support to the courts in the administration of justice and their operations. It comprises the following four Divisions:

- (a) ***Operations Division.*** It is responsible for overseeing the operations of court registries, providing court support services to judges and judicial officers (JJOs), providing bailiff services, providing interpretation, translation and certification services, and planning and implementing information technology (IT) strategies;

Note 1: *There are seven Magistrates' Courts, i.e. the Eastern, Kowloon City, Kwun Tong, West Kowloon, Shatin, Fanling and Tuen Mun Magistrates' Courts.*

Note 2: *They are situated in the Eastern, Kowloon City, West Kowloon, Fanling and Tuen Mun Magistrates' Courts.*

Introduction

- (b) ***Development Division.*** It is responsible for providing administrative assistance to the Chief Justice, handling legislative exercises relating to the Judiciary, interfacing with the Government, liaising with the legal profession, overseeing major events and exchange activities with judiciaries in other jurisdictions, handling press and media related matters, as well as promoting public understanding of the Judiciary's role and work;
- (c) ***Quality Division.*** It is responsible for providing management review and management information, providing legal reference and operating the Judiciary libraries, handling complaints and providing digital audio recording and transcription services; and
- (d) ***Corporate Services Division.*** It is responsible for providing support services and managing human resource matters relating to JJOs, planning and implementation of accommodation projects and court security measures, overseeing finance and supplies matters, human resource management of support staff, as well as general administration of the Judiciary.

As at 31 March 2019, the Judiciary had an establishment of 1,961 posts, comprising 219 judicial posts and 1,742 non-judicial civil service posts. The estimated expenditure in 2019-20 is \$2.1 billion. An extract of the Judiciary's organisation chart is at Appendix B.

Information Technology Strategy Plan

1.4 The Judiciary uses IT extensively to support its operations and services to the public. It has built up an infrastructure and network to support information communications and developed application systems to meet its operational requirements. As at 30 June 2019, there were 62 application systems (Note 3) supporting the day-to-day operations of the Judiciary. Over the years, these systems

Note 3: *The 62 application systems comprised: (a) 10 separate case management systems serving different levels of courts and tribunals; (b) 22 court-related systems providing support for court-related services such as bailiff services and jury services; and (c) 30 systems providing support for various administrative functions (e.g. resource and operations management).*

and IT infrastructure have been enhanced and updated from time to time to cater for new requirements.

1.5 ***Key initiatives of Information Technology Strategy Plan (ITSP).*** In 2011 and 2012, the Judiciary conducted an Information System Strategy Study (ISSS) which formulated ITSP on the application of IT in support of its operations for the coming ten years and beyond. Under ITSP, the Judiciary seeks to implement by phases an integrated court case management system (iCMS) to integrate, streamline and standardise court processes across different levels of courts and tribunals where appropriate, and to put in place a number of non-court systems to meet the operational requirements of the Judiciary. The key initiatives of ITSP included:

- (a) ***Implementing iCMS.*** iCMS would be set up to support the litigation processes of courts and tribunals. The system would be designed to leverage the commonality of the processes while addressing the unique requirements of specific courts and tribunals. It would enable appropriate data sharing, data driven workflow and support the use of electronic documents;
- (b) ***Standardising processes.*** The court and non-court processes across different court levels and across non-court sections would be reviewed and standardised as appropriate;
- (c) ***Streamlining operations.*** The Judiciary aimed to improve the overall efficiency of its operations through business process re-engineering and improved automation by the use of IT;
- (d) ***Establishing an integrated data architecture.*** An integrated data architecture with centralised governance would be established to support the operations of the Judiciary;
- (e) ***Enabling and encouraging electronic services.*** Electronic services (e-services) would be introduced in phases in many of the court processes enabling court users to interact with the Judiciary. Major proposed initiatives included a new webpage, electronic submission of documents to the courts, acceptance of electronic payment, electronic mode of listing and expansion of the scope of information and documents to be made available

Introduction

for electronic search. These would reduce the need for court users to visit the courts or court registries in person;

- (f) ***Enabling electronic court records.*** In combination with expanded e-services, the Judiciary would seek to support the use of electronic records in court proceedings and move towards a “less paper” environment; and
- (g) ***Enhancing courtroom technologies.*** The courtrooms would be equipped with appropriate IT infrastructure, necessary equipment and communication network to support court hearings, including the use, retrieval and display of electronic documents. With built-in infrastructure, the use of electronic bundles (e-bundles — see para. 4.28), legal research and video conferencing could be set up in courtrooms more readily if such activities were required and permitted by courts.

1.6 The Judiciary anticipated that the implementation of ITSP would bring about improvement in access to justice, workflow automation, operational efficiency, and improve services to court users and the community as a whole.

Implementation of projects under ITSP

1.7 ***Implementation plan.*** Pursuant to ISSS, the implementation of ITSP is divided into two phases. A six-year action plan has been formulated for Phase 1, which is further sub-divided into two stages:

- (a) Stage 1 mainly covers IT infrastructure foundation and the development of iCMS for the District Court, the Summons Courts of the Magistrates’ Courts and the related court offices; and
- (b) Stage 2 mainly covers the development of iCMS for the Court of Final Appeal, the High Court, the Competition Tribunal, the non-Summons Courts of the Magistrates’ Courts and the Small Claims Tribunal.

ITSP Phase 2 development work covers iCMS for the remaining courts and tribunals (comprising the Family Court, Lands Tribunal, Coroner’s Court, Labour Tribunal and Obscene Articles Tribunal).

1.8 ***Funding approval.*** With the support of the Office of the Government Chief Information Officer (OGCIO — Note 4), in May 2013, the Judiciary obtained the Legislative Council (LegCo) Finance Committee (FC)’s funding approval of \$682.4 million under Head 710 (Computerisation) of the Capital Works Reserve Fund (Note 5) for the implementation of ITSP Phase 1, with scheduled completion dates for Stage 1 and Stage 2 in June 2016 and December 2019 respectively. According to the Judiciary, with the foundations to be built and the experience to be gained in Phase 1, it would work out concrete plans and submit a funding application for the implementation of Phase 2 at a later time.

1.9 ***Information Technology Office.*** Before the implementation of ITSP, the IT organisation of the Judiciary Administration comprised the Information Technology Management Section under the Quality Division (responsible for day-to-day IT operations) and the Project Management Office under the Operations Division (responsible for planning and taking forward ITSP). To achieve greater synergy, the two units were merged in December 2013 to form the Information Technology Office under the Operations Division. It comprises two wings, namely the Information Technology Office (Technical) and the Information Technology Office (Operational) (see Appendix B). While the latter manages the business aspects of the application, development and maintenance of IT systems, the former is responsible for providing technical advice and support for the implementation of ITSP and other application and development of IT, as well as managing the day-to-day IT operations. As at 30 June 2019, the Information Technology Office had 213 staff, comprising 64 civil servants and 149 contract staff.

1.10 ***Governance structure of ITSP.*** With reference to the practice guides issued by OGCIO, the implementation of ITSP is under the direction of a “programme

Note 4: *OGCIO is responsible for overseeing the use of information and communications technology within the Government.*

Note 5: *The Capital Works Reserve Fund was set up for financing the Public Works Programme, acquisition of land, capital subventions and major systems and equipment items. OGCIO is responsible for monitoring the overall expenditure under Head 710 (Computerisation) of the Fund with special focus on Subhead 700GX – New Administrative Computer Systems (block allocation). The Financial Secretary has delegated to the Controlling Officers of the relevant procuring departments of major computerisation projects exceeding \$10 million each the power to authorise expenditure from Head 710 of the Fund.*

Introduction

owner” (the Judiciary Administrator for the projects under ITSP) and a “project steering committee”. Working groups and advisory committees, supported by relevant project teams, are formed with a view to ensuring that the design and delivery of ITSP is in line with legislative and policy issues. According to the Judiciary Administration, the governance structure of ITSP can be broadly divided into two groups, i.e. one led by JJOs and the other led by the Judiciary Administrator. With the benefits of operational experience and in response to the need for more intensive deliberations on detailed policies, and legislative and operational issues at the later stage of ITSP implementation, there have been simplifications and refinements to the governance structure over the past few years. Details of the current governance structure are as follows:

- (a) ***Group led by JJOs.*** The group led by JJOs is to provide overall steer and inputs regarding legislative, policy and operational aspects. It also helps ensure that the functions to be delivered under ITSP would be in line with the legislative and policy objectives of court operations in the administration of justice. It mainly includes the following:
 - (i) ***Committee on Information Technology (CIT).*** It takes holistic ownership of ITSP programme. It is the overarching body overseeing the development and implementation of ITSP at the strategic level. It is chaired by a Permanent Judge of the Court of Final Appeal and comprises 11 members (Note 6);
 - (ii) ***Working Groups.*** Under CIT, three working groups (namely the Working Group on iCMS, Working Group on Court Record Management and Advisory Group on Data Policy and Architecture) are formed to provide high-level advice on issues that span across the different levels of courts and operations; and
 - (iii) ***Policy and Legislative Group and Operational Groups.*** In connection with Stage 1 implementation (see para. 1.7(a)), the Policy and Legislative Group, which is led by a Judge of the Court

Note 6: *Members are another Permanent Judge of the Court of Final Appeal, the Chief Judge of the High Court, two Justices of Appeal of the Court of Appeal of the High Court, the Registrar of the High Court, a Judge of the Court of First Instance of the High Court, the Chief District Judge, a District Judge, the Chief Magistrate, the Registrar of the District Court and the Judiciary Administrator.*

of First Instance of the High Court and reports to the Working Group on iCMS, has been in operation since May 2017 to lead discussions on detailed policy and legislative issues for the District Court and the Summons Courts of the Magistrates' Courts. Two Operational Groups, respectively for the District Court and the Summons Courts of the Magistrates' Courts (led by the relevant court leaders (i.e. the Chief District Judge and the Chief Magistrate)), have been in operation since May 2017 to provide steer on operational matters (Note 7); and

(b) ***Group led by Judiciary Administrator.*** The group led by the Judiciary Administrator is responsible for the more detailed aspects, including planning, monitoring and financial controls of ITSP implementation. It mainly includes the following:

(i) ***Information Technology Strategy Plan Steering Committee (hereinafter referred to as the Steering Committee).*** It is a dedicated administrative committee set up to oversee the detailed implementation of ITSP and ensure that ITSP aligns with the Judiciary's long-term strategy. It is chaired by the Judiciary Administrator and comprises the Government Chief Information Officer and four other members (Note 8). In view of the multitude of activities, studies and projects involved in ITSP, the Steering Committee has been supported by the Information Technology Strategy Plan Delivery and Assurance Team (hereinafter referred to

Note 7: *According to the Judiciary Administration, prior to May 2017, the project studies relating to legislative study, the District Court and the Summons Courts of the Magistrates' Courts were carried out by project study teams under the Project Studies Steering Group (led by the senior management of the Judiciary Administration) and steered by the relevant advisory committees (led by JJOs). To streamline the operation in project studies, the relevant project study teams under the Project Studies Steering Group and the relevant advisory committees were replaced by the Policy and Legislative Group and the two Operational Groups in May 2017.*

Note 8: *The four other members are the Deputy Judiciary Administrator (Development), the Deputy Judiciary Administrator (Operations), the Assistant Judiciary Administrator (Quality and Information Technology) and the Chief Systems Manager (Information Technology).*

Introduction

as ITSP Delivery and Assurance Team) and the Programme Management Office since February 2014;

- (ii) ***ITSP Delivery and Assurance Team.*** It provides steer and oversees the progress and quality assurance areas of key delivery work under ITSP (Note 9); and
- (iii) ***Programme Management Office.*** A Programme Management Office, which reports to the Steering Committee, was established in February 2014 to support the day-to-day management of ITSP.

Apart from the two governance groups in (a) and (b) above which have been established specifically for the implementation of ITSP, the Judiciary Administration has also established an internal monitoring mechanism, which currently comprises the monthly ITSP Core Group meetings for more frequent and in-depth discussions of strategic issues that are more administrative in nature, and the Quarterly Meetings on IT Projects for facilitating the overall management and control of ITSP implementation (Note 10). The governance structure for the implementation of ITSP as at 30 June 2019 is at Appendix C.

1.11 ***Role of OGCIO.*** OGCIO plays a proactive and visible role in monitoring and advising on large-scale, complex and high-risk projects (Note 11). OGCIO

Note 9: *Prior to February 2014, the Steering Committee was supported by three project steering committees responsible for similar subjects of the three Working Groups under CIT (i.e. (a) iCMS and associated projects; (b) data-related projects; and (c) infrastructure project). The project steering committees were supported by the respective project assurance teams to oversee project progress. To simplify the governance structure, the three project steering committees and their respective project assurance teams were grouped under a single team, i.e. ITSP Delivery and Assurance Team in February 2014.*

Note 10: *According to the Judiciary Administration, ITSP Core Group meetings commenced in May 2018. The Quarterly Meetings on IT Projects, which commenced in January 2019, replaced a similar monthly meeting namely the Internal Monitoring Meeting. Both ITSP Core Group meetings and the Quarterly Meetings on IT Projects are chaired by the Judiciary Administrator.*

Note 11: *According to the Judiciary Administration, though the Judiciary is not a bureau/department, OGCIO provides the same level of advice and support to the Judiciary in this regard.*

Circular No. 2/2011 specifies the involvement of OGCI0 in the project governance mechanism. The implementation of ITSP is a Tier 1 project (i.e. project costing over \$100 million). According to the Circular, the Government Chief Information Officer participates in the project steering committee (i.e. the Steering Committee — see para. 1.10(b)(i)) as the Government’s IT advisor to review the project organisation, progress against major milestones, and provide professional and management advice where applicable on the technical and industrial aspects.

1.12 ***Progress reports.*** In line with OGCI0 Circular No. 2/2011, the Judiciary Administration is required to submit progress reports in a prescribed format for OGCI0 to monitor the health status of the projects under ITSP and to provide timely advice where necessary. OGCI0 is also required to consolidate an annual progress report on the implementation of major computer projects from bureaux and departments (B/Ds) for submission to LegCo (Note 12).

1.13 ***Stakeholder consultations.*** The Judiciary Administration has conducted consultations with stakeholders at different stages of ITSP project implementation:

- (a) before submitting the funding application for ITSP, a consultation document was issued to 57 relevant stakeholder organisations in May 2012, including the legal professional bodies, government B/Ds, agencies and organisations, to invite their comments on the preliminary proposals of ITSP. In the event, 26 organisations provided comments which in general were supportive and encouraging;
- (b) in 2014 and 2015, the Judiciary Administration conducted consultations with external stakeholders including the Department of Justice (DoJ), legal professionals and related government departments before the issuance of the Policy Statements on the implementation of ITSP in October 2014 and April 2015 (Note 13);

Note 12: *At the FC meeting held in November 1992, the Government undertook to provide LegCo Members with an annual progress report on the implementation of major computer projects funded under Head 710 of the Capital Works Reserve Fund, which cost over \$10 million each.*

Note 13: *Having taken into consideration the inputs and suggestions from the stakeholders, endorsed Policy Statement documents (covering policy issues including time sensitivity, identity authentication, document authentication, payment options, handling of documents for use in litigation process) were issued.*

Introduction

- (c) in 2016 and 2017, the Judiciary Administration conducted engagement briefings with organisations which were relevant for Stage 1 implementation (see para. 1.7(a)) including about 40 prosecuting departments and agencies currently using the Case and Summons Management System (CASEMAN — Note 14) in the Summons Courts of the Magistrates' Courts (Note 15). The use of CASEMAN for the types of cases covered by the Summons Courts of the Magistrates' Courts would become obsolete after a sunset period of three years from the date of the rolling out of iCMS to the Summons Courts of all seven Magistrates' Courts. To prepare for the implementation, the prosecuting departments and agencies are encouraged to make any necessary arrangements (such as developing a system interface with iCMS). The sunset period is to allow sufficient time for the prosecuting departments and agencies to make the arrangements; and
- (d) in 2018 and 2019, the Judiciary Administration consulted the relevant stakeholders, including the prosecuting departments and agencies and the legal professional bodies, on the proposed legislation, Practice Directions and administrative arrangements relating to the implementation of Stage 1 of ITSP. An on-going engagement with the stakeholders on issues including operational and technical ones is in progress.

1.14 ***Legislative amendments.*** At present, while the Electronic Transactions Ordinance (Cap. 553) is generally applicable in Hong Kong, court proceedings are excluded from the operation of its material provisions. On the other hand, the legislation relating to court procedures, dispersed over a number of ordinances/rules, does not fully envisage the possibility of electronic mode of handling. Legislative amendments are therefore needed for implementing ITSP. In April 2019, the

Note 14: *CASEMAN is a case management system used in the seven Magistrates' Courts. It supports summons applications by the prosecuting departments and agencies and other related processes. The prosecuting departments and agencies may use CASEMAN to commence processing with the Judiciary by making summons applications, check case allocation results and check hearing results upon conclusion of the summons cases.*

Note 15: *The Summons Courts of the Magistrates' Courts handle case types including driving offence points summons, fixed penalty summons and departmental summons.*

Judiciary Administration briefed the LegCo Panel on Administration of Justice and Legal Services, among others, that:

- (a) a new bill would be introduced to provide for an overall legislative framework for the electronic mode of handling court-related documents eventually covering all court levels; and
- (b) subject to the enactment of the legislative amendments (including the new bill and some court rules), e-services would be launched as an additional option for court users to interface with courts.

Audit review

1.15 In 2011, Audit Commission (Audit) completed a review of “Administrative and court support work of the Judiciary Administration”, the results of which were reported in Chapter 2 of the Director of Audit’s Report No. 56 of March 2011. In May 2019, Audit commenced a review to examine the Judiciary Administration’s work in implementing projects under ITSP and other related issues, focusing on:

- (a) progress in project implementation and problems encountered (PART 2);
- (b) project governance (PART 3); and
- (c) other related issues (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Judiciary

1.16 The Judiciary Administrator generally agrees with the audit recommendations.

Acknowledgement

1.17 Audit would like to acknowledge with gratitude the full cooperation of the staff of the Judiciary Administration during the course of the audit review.

PART 2: PROGRESS IN PROJECT IMPLEMENTATION AND PROBLEMS ENCOUNTERED

2.1 This PART examines the implementation of projects under ITSP, focusing on the following areas:

- (a) progress in project implementation (paras. 2.4 to 2.7); and
- (b) problems encountered during project implementation (paras. 2.8 to 2.24).

Implementation schedule of ITSP Phase 1

2.2 Having regard to the recommendations of ISSS, under ITSP, iCMS would be implemented in two phases (i.e. Phases 1 and 2) to streamline and standardise the electronic court processes across different levels of courts. A number of non-court systems would also be put in place to meet the operational requirements of the Judiciary. Phase 1 is further broken down into two stages under the six-year action plan for better management (see para. 1.7). The implementation plan of Phase 1 stated in the 2013 FC paper (see para. 1.8) is shown in Table 1.

Table 1

**Implementation plan of Phase 1 of ITSP
(May 2013)**

Activity	Commencement date	Completion date	Duration (No. of months)
(A) Technical studies	July 2013	June 2014	12
(B) Implementation of IT infrastructure and Stage 1 court systems	July 2013	June 2016	36
(C) Implementation of non-court systems	July 2015	June 2019	48
(D) Implementation of Stage 2 court systems	July 2016	December 2019	42

Source: Audit analysis of Judiciary Administration records

Projects and activities under ITSP Phase 1

2.3 While ITSP Phase 1 is generally divided into four activities (i.e. Activities A to D) in the implementation plan (see Table 1 in para. 2.2), there are 57 individual projects/activities to be implemented under the six-year action plan. For the purpose of financial monitoring, the Judiciary Administration has grouped the individual projects/activities under the following nine project bundles:

- (a) ***Implement iCMS bundle 1.*** It includes the development and implementation of eight application modules of iCMS (see Table 4 in para. 2.6(a)) for the District Court, the Summons Courts of the Magistrates' Courts and the related court offices;
- (b) ***Implement iCMS bundle 2.*** It includes the development and implementation of various application modules of iCMS for the courts, tribunals and court offices under Phase 1 not covered in (a);
- (c) ***Develop non-court related applications.*** It includes the development and implementation of a number of non-court related applications such as resource scheduling tools and contract management tools (see item (i) of Table 5 in para. 2.6(b));
- (d) ***Revamp Judiciary websites and implement web portals.*** It includes revamping the Judiciary websites to increase their user-friendliness and enriching their content, as well as developing new web portals as a platform for future e-services;
- (e) ***Implement Human Resources Management System.*** It includes the development and implementation of a new system to replace the existing human resources systems to improve and extend IT coverage on human resources management services for both JJOs and non-judicial staff;
- (f) ***Implement Integrated Fund Management System.*** It includes the development and implementation of a new fund management system to replace the existing Judiciary Suitors' Funds Accounting System to improve the Judiciary's internal accounting functions. The new system will be integrated with iCMS so that all funds associated with a particular court case are traceable;

Progress in project implementation and problems encountered

- (g) ***Implement Electronic Information Management System.*** It includes the development and implementation of an electronic information management system to enable the smooth and consistent use of electronic information by internal users of the Judiciary;
- (h) ***Upgrade network and infrastructure.*** It includes the upgrade of the existing IT infrastructure and network to support the implementation of various projects under ITSP; and
- (i) ***Enhance courtroom technologies.*** It includes the provision of computers in courtrooms for JJOs and clerks to access iCMS during hearings, and facilitate JJOs to view e-bundles and conduct simple trial related actions. It also includes the upgrade of video conferencing, projectors and other visual equipment (such as additional and larger monitors).

As at 30 June 2019, \$362 million (53%) of the approved funding of \$682.4 million (see para. 1.8) had been spent. The estimated and actual expenditures of project bundles are shown at Table 2.

Progress in project implementation and problems encountered

Table 2

**Estimated and actual expenditures of project bundles
under ITSP Phase 1
(30 June 2019)**

Project bundle	Estimated expenditure (\$ million)	Actual expenditure (\$ million)
(1) Implement iCMS bundle 1	138.3	126.4
(2) Implement iCMS bundle 2	120.9	13.7
(3) Develop non-court related applications	2.8	1.0
(4) Revamp Judiciary websites and implement web portals	1.8	0.8
(5) Implement Human Resources Management System	4.8	4.1
(6) Implement Integrated Fund Management System	2.1	1.0
(7) Implement Electronic Information Management System	14.0	8.0
(8) Upgrade network and infrastructure	221.4	182.4
(9) Enhance courtroom technologies	99.8	24.6
Contingency and reserve	76.5	—
Total	682.4	362.0

Source: Judiciary Administration records

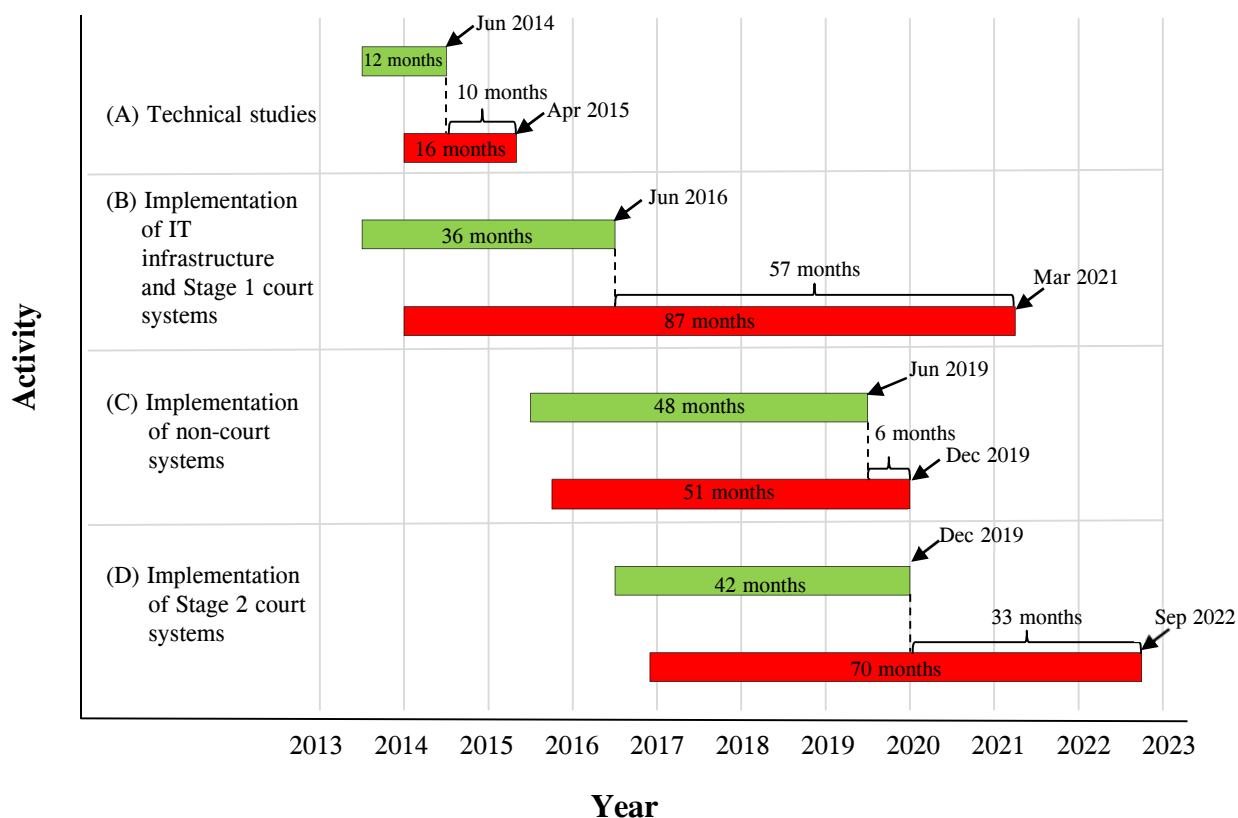
Progress in project implementation

Delays in completion of projects under ITSP Phase 1

2.4 **Implementation progress by activity.** Audit analysed the actual/revised target completion dates of all four activities of ITSP Phase 1 as reported in the progress report submitted by the Judiciary Administration to OGCI0 (see para. 1.12) as at 30 June 2019 against the completion dates stated in the 2013 FC paper. The analysis revealed that there were slippages (ranging from 6 to 57 months) in all four activities of ITSP Phase 1 (see Figure 1).

Figure 1

Implementation progress of ITSP Phase 1 (30 June 2019)



Legend: Implementation schedule per 2013 FC paper
 Actual implementation timeframe/revised implementation schedule

Source: *Audit analysis of Judiciary Administration records*

Progress in project implementation and problems encountered

2.5 **Percentage of completion by project bundle.** The technical studies under Activity A were completed in April 2015. As at 30 June 2019, the Judiciary Administration continued to implement the other projects under ITSP Phase 1, which were categorised into nine project bundles under Activities B to D. On a monthly basis, the Judiciary Administration monitors the percentage of cumulative expenditure against the percentage of completion for each project bundle (Note 16) under ITSP Phase 1. As at 30 June 2019, the percentage of completion of the work (not expenditure) relating to the nine project bundles ranged from 4% to 89% (see Table 3).

Table 3
Percentage of completion of projects
under ITSP Phase 1 by project bundle
(30 June 2019)

Project bundle		Percentage of completion
(a) Bundles implemented under Activity B “Implementation of IT infrastructure and Stage 1 court systems”		
(i)	Implement iCMS bundle 1	89%
(ii)	Revamp Judiciary websites and implement web portals	33%
(b) Bundles implemented under Activity C “Implementation of non-court systems”		
(i)	Develop non-court related applications	36%
(ii)	Implement Human Resources Management System	72%
(iii)	Implement Integrated Fund Management System	34%
(iv)	Implement Electronic Information Management System	50%
(c) Bundle implemented under Activity D “Implementation of Stage 2 court systems”		
(i)	Implement iCMS bundle 2	4%
(d) Bundles implemented across multiple Activities (Note)		
(i)	Upgrade network and infrastructure	82%
(ii)	Enhance courtroom technologies	26%

Source: *Audit analysis of Judiciary Administration records*

Note: *The two project bundles were scheduled to be implemented throughout Activity B “Implementation of IT infrastructure and Stage 1 court systems” and Activity D “Implementation of Stage 2 court systems”.*

Note 16: *According to the Judiciary Administration, the percentage of completion refers to the extent of completion in terms of the implementation progress of individual project bundles.*

Progress in project implementation and problems encountered

2.6 *Audit analysis on latest implementation progress.* As compared with the original implementation plan in the 2013 FC paper (see Table 1 in para. 2.2), there was a 10-month slippage on completion of the technical studies under Activity A in April 2015. Audit further analysed the implementation progress of the other Activities from June to September 2019 and found the following:

- (a) *Activity B “Implementation of IT infrastructure and Stage 1 court systems”.* Most of the outstanding application modules of Stage 1 court systems were expected to be rolled out progressively from October 2019, except for the e-filing services, which were scheduled to be rolled out by December 2020 subject to the enactment of the relevant legislation and readiness of the key stakeholders (see Table 4). The target rollout dates were generally in line with the revised completion date of March 2021 (Note 17) for Activity B “Implementation of IT infrastructure and Stage 1 court systems” (see Figure 1 in para. 2.4);

Note 17: *According to the Judiciary Administration, the revised target completion date was March 2021 (instead of December 2020) because three months had been planned for introducing enhancements to Stage 1 court systems, if any, after the enactment of the relevant legislation.*

Progress in project implementation and problems encountered

Table 4

Implementation progress of Stage 1 court systems by application module (30 September 2019)

Application module (Note 1)	Actual/target rollout date for		
	District Court	Summons Courts of the Magistrates' Courts	Bailiff Section
(i) Court diary functions	Jun 2019	Oct 2019 * (Note 2)	N/A
(ii) Listing and filing related modules	Jun 2019	Oct 2019 * (Note 2)	N/A
(iii) Hearing modules	Jun 2019	Oct 2019 * (Note 2)	N/A
(iv) Mobile application for bailiff	N/A	N/A	Jun 2019
(v) Bailiff related modules	Jun 2019	Oct 2019 * (Note 2)	Jun & Oct 2019 *
(vi) Summons specific modules	N/A	Oct 2019 * (Note 2)	N/A
(vii) E-filing services	Dec 2020 * (Note 3)	Dec 2020 * (Note 3)	N/A
(viii) Payment collection modules	Dec 2016	Jan 2018	N/A

Legend: * Target rollout date

Source: *Audit analysis of Judiciary Administration records*

Note 1: The eight application modules of iCMS support the courts' end-to-end processes, including: (a) filing (e.g. case initiation and processing of incoming documents); (b) listing (e.g. generation of various court schedules and rosters); (c) hearing (e.g. party registration, display of court documents and announcement of judgments with generation of payment notices); and (d) post-hearing (e.g. enforcement and execution).

Note 2: The relevant application modules were scheduled to be rolled out to the Kowloon City Magistrates' Courts in October 2019 and would be extended incrementally to the remaining six Magistrates' Courts shortly thereafter.

Note 3: The relevant application module was scheduled to be rolled out after the enactment of the relevant legislation (see para. 1.14).

Progress in project implementation and problems encountered

- (b) *Activity C “Implementation of non-court systems”*. As the percentage of completion as of June 2019 for the four relevant project bundles only ranged from 34% to 72% (see item (b) of Table 3 in para. 2.5), it was unlikely that Activity C “Implementation of non-court systems” could be completed by December 2019 (see Figure 1 in para. 2.4). Based on information as of September 2019 provided by the Judiciary Administration, apart from the Transport Service Utilisation Reporting application which was rolled out in February 2018, and the Electronic Records Management System and the Collaborative Workspace solutions which were rolled out to five pilot sections of the Judiciary Administration in November 2018, other non-court related applications/systems would be progressively rolled out from December 2019 to September 2021 (see Table 5); and

Progress in project implementation and problems encountered

Table 5

Implementation progress of non-court related applications/systems (30 September 2019)

Non-court related application/system	Actual/target rollout date
(i) Non-court related applications:	
(1) Transport Service Utilisation Reporting	Feb 2018
(2) Conference Room Booking	Dec 2019
(3) Asset Management	Dec 2019
(4) Working Stores and Distilled Water Ordering	Dec 2019
(5) Contract Management	Dec 2019
(6) E-Apostille Service	Jun 2020
(ii) Human Resources Management System	Dec 2019
(iii) Integrated Fund Management System	Jun 2020
(iv) Electronic Information Management System:	
(1) Electronic Records Management System and Collaborative Workspace solutions (to five pilot sections of the Judiciary Administration)	Nov 2018
(2) Knowledge Management System and wider rollout of Electronic Records Management System and Collaborative Workspace solutions	Sep 2021

Source: Audit analysis of Judiciary Administration records

- (c) **Activity D “Implementation of Stage 2 court systems”.** Up to June 2019, Activity D “Implementation of Stage 2 court systems” was only at a preliminary stage (i.e. the percentage of completion for the relevant project bundle was only 4% — see item (c) of Table 3 in para. 2.5). Moreover, given the slippage of earlier Activities B and C (i.e. “Implementation of IT infrastructure and Stage 1 court systems” and “Implementation of non-court systems”) which would only be completed by December 2020 and September 2021 respectively, there might be knock-on effects on Activity D.

Progress in project implementation and problems encountered

2.7 The Judiciary anticipated that the implementation of ITSP would bring about improvement in access to justice, workflow automation, operational efficiency, and improve services to court users and the community as a whole (see para. 1.6). However, based on the progress report submitted by the Judiciary Administration to OGCIIO as at 30 June 2019, there would be a slippage of at least 33 months in completing the projects technically under ITSP Phase 1 in September 2022 (Note 18) (see Figure 1 in para. 2.4) as compared with the target completion date of December 2019 stated in the 2013 FC paper. In Audit's view, there is a need for the Judiciary Administration to step up monitoring of the implementation of all projects under ITSP Phase 1 and expedite actions where possible to complete the outstanding projects with a view to reaping the full benefits as early as practicable. The Judiciary Administration also needs to draw lessons from the problems encountered in project implementation as detailed in paragraphs 2.8 to 2.24.

Problems encountered during project implementation

2.8 In light of the project slippage (see paras. 2.4 to 2.7), Audit examined the Judiciary Administration's project management records of ITSP to ascertain the reasons for the delays and identify lessons to be learnt. Audit noted that in the course of implementing projects under ITSP Phase 1, the Judiciary Administration encountered the following key problems:

- (a) change of delivery mode and manpower shortage (paras. 2.9 to 2.15);
- (b) long lead time in procurement of IT infrastructure (paras. 2.16 and 2.17);
- (c) long time taken in developing Stage 1 court systems (paras. 2.18 to 2.21); and
- (d) engagement of prosecuting departments and agencies to prepare for the rollout of iCMS (paras. 2.22 to 2.24).

Note 18: *According to the Judiciary Administration, the estimated completion date for ITSP Phase 1 in September 2022 only reflected the technical aspects of the project. As of September 2019, the Judiciary Administration had just started the detailed planning work for Stage 2 of ITSP implementation. It would take into account all relevant aspects, including legislative and policy formulation work, development of operational details, financial considerations and technical aspects before formulating a practicable timetable ahead.*

Change of delivery mode and manpower shortage

2.9 *Change of delivery mode.* According to the Judiciary Administration, pursuant to ISSS, ITSP project portfolio and procurement strategy for projects under the six-year action plan (see para. 1.7) had all along been planned on the premise that most of the required services for system design together with implementation would be acquired through outsourcing and that the design and implementation of the core application (i.e. the total solution of implementing iCMS) would be acquired through open tenders. The outsourcing approach was endorsed by the Steering Committee (see para. 1.10(b)(i)) at its first meeting in June 2013. However, at the second meeting of the Steering Committee held in August 2013, OGCIO commented that:

- (a) it would be very risky to pursue outsourcing for a total solution for the iCMS, which would include system analysis and design (SA&D), programming, implementation and system integration;
- (b) it was most likely that a successful tenderer could not be identified or there would be serious risks that the project might not be able to be completed satisfactorily within budget; and
- (c) to reduce the project risk, the Judiciary Administration was recommended to critically consider conducting SA&D of iCMS with in-house resources, i.e. civil service staff supplemented by staff engaged under term contracts centrally administered by OGCIO (commonly known as T-contract staff — Note 19).

2.10 On the advice of OGCIO, the Judiciary Administration in September 2013 concluded that, to reduce the project risks:

- (a) the total outsourcing approach should be changed to a hybrid one, i.e. outsourcing plus in-house efforts;

Note 19: *According to OGCIO Circular No. 4/2010 on management of IT professional resources in B/Ds, as a supplement, B/Ds may consider employing additional contract IT professionals to meet their ad-hoc and short-term service needs. OGCIO administers centrally-arranged contracts for the provision of IT contract staff services to the Government.*

Progress in project implementation and problems encountered

- (b) for SA&D, system integration and system maintenance, they should best be conducted mainly by in-house efforts; and
- (c) as regards implementation and programming tasks, they should be taken forward by outsourcing plus in-house efforts.

According to the Judiciary Administration, time and efforts had to be naturally spent to discuss and plan for the change of delivery mode, including the implications on manpower resource requirements (see para. 2.11) and changes in procurement plans. As a result, the commencement of ITSP implementation was deferred from mid-2013 to early 2014. Specifically, the Judiciary Administration reported to the Steering Committee the implications of the changed delivery mode and the revised procurement plans in February and May 2014 respectively.

2.11 ***Additional manpower resource requirements.*** At the fourth meeting of the Steering Committee held in February 2014, an assessment of the implications in manpower resource requirements arising from the change of delivery mode (see para. 2.10) was submitted to the Steering Committee for endorsement, as follows:

- (a) ***Civil servants.*** There was an urgent need to enhance the IT technical team to ensure that the team would be equipped with sufficient in-house staff to carry out the intended work (Note 20); and
- (b) ***T-contract staff.*** To supplement the civil service manpower resources, it was necessary to engage T-contract staff. According to a T-contract staff engagement plan for the implementation of ITSP, 20 to 70 T-contract staff would be engaged per year in the six-year period from 2013-14 to 2018-19 (see Table 6).

Note 20: *According to the Judiciary Administration's records, 14 dedicated time-limited posts were created in 2013-14 and the number of posts gradually increased to 28 in 2017-18 and 2018-19. Besides, 13 permanent posts were created from 2013-14 to 2018-19 to perform work relating to, but not limited to, Phase 1 of ITSP.*

Table 6

**Engagement plan of T-contract staff
for the implementation of ITSP
(2013-14 to 2018-19)**

Year	Rank			Total planned number of T-contract staff (Note) (d) = (a) + (b) + (c)
	Project Manager (a) (Number)	Systems Analyst (b) (Number)	Analyst/ Programmer (c) (Number)	
2013-14	5	12	3	20
2014-15	5	20	20	45
2015-16	5	20	45	70
2016-17	5	20	45	70
2017-18	5	20	30	55
2018-19	5	20	25	50

Source: Judiciary Administration records

Note: According to the Judiciary Administration, the number of T-contract staff engaged would reach the peak during the programming stage as more Analyst/Programmer rank staff would be deployed in carrying out programming work.

2.12 **Shortage of T-contract staff at Analyst/Programmer rank.** According to the Judiciary Administration, probably because of the market conditions at the relevant times, there were difficulties over the years in recruiting sufficient T-contract staff at the rank of Analyst/Programmer for the implementation of projects under ITSP, especially for the programming work of Stage 1 court systems. The planned and actual numbers of T-contract staff at the rank of Analyst/Programmer engaged in the six years from 2013-14 to 2018-19 are shown in Table 7.

Progress in project implementation and problems encountered

Table 7

**Planned and actual numbers of T-contract staff
at the rank of Analyst/Programmer
for the implementation of ITSP
(2013-14 to 2018-19)**

Year	Planned number of T-contract staff (a)	Actual number of T-contract staff (Note) (b)	Shortage	
			Number (c) = (a) - (b)	Percentage (d) = (c) ÷ (a) × 100%
2013-14	3	0	3	100 %
2014-15	20	3	17	85 %
2015-16	45	6	39	87 %
2016-17	45	8	37	82 %
2017-18	30	5	25	83 %
2018-19	25	10	15	60 %

Source: Audit analysis of Judiciary Administration records

Note: The number of T-contract staff deployed varied from time to time. For the purpose of this analysis, the number of T-contract staff who were engaged as at 15 March of each year (i.e. the cut-off date for arranging payment in each financial year) was counted as the number of T-contract staff deployed in the year.

2.13 **Actions taken to address Analyst/Programmer manpower shortage.** In view of the difficulties in recruiting T-contract staff at the rank of Analyst/Programmer for programming work of Stage 1 court systems, which was originally planned to be rolled out by end June 2016, the Judiciary Administration implemented the following measures to address the manpower shortage issue:

- (a) **Outsourcing.** The mix of outsourcing and in-house development was adjusted in a way that more programming work would be done by outsourcing contractors. In the event, a modular and progressive approach was adopted in the implementation and rollout of Stage 1 court systems,

and four outsourcing contractors were engaged to perform the programming and system development work of Stage 1 court systems (Note 21) by modules. According to the Judiciary Administration, the modular and progressive approach apparently also had an impact on the extra time and efforts required; and

- (b) ***Engagement of Systems Analysts to perform programming and system integration work.*** While the Judiciary Administration encountered difficulties in engaging T-contract staff at the rank of Analyst/Programmer, it was able to engage T-contract staff at a higher rank, namely Systems Analyst. Audit noted that according to the engagement plan for T-contract staff (see Table 6 in para. 2.11), 20 staff at the rank of Systems Analyst were planned to be engaged from 2014-15 to 2018-19. In the event, the number of T-contract staff at the rank of Systems Analyst engaged gradually increased from 15 in March 2014 to 33 in March 2017, and further increased to 43 in March 2018 before reducing to 33 in March 2019. According to the Judiciary Administration, since 2016, having consulted OGCIO, the Judiciary Administration had started to engage more junior Systems Analysts to perform both system design and programming work of Stage 1 court systems. Moreover, as iCMS modules were developed individually by four different outsourcing contractors, more in-house efforts, including experienced T-contract staff at the rank of Senior Systems Analyst, were engaged to handle the modules' version control and system integration work.

Regarding (a), Audit noted that the Judiciary Administration took a longer time than expected to complete the hiring of contractors. While the hiring process should be in parallel with the SA&D work so that the programming work could start immediately upon completion of SA&D, Audit noted that the hiring of the last outsourcing contractor was only completed in September 2016, which was four months after the completion of SA&D in May 2016 (see para. 2.19). Regarding (b), upon enquiry, the Judiciary Administration in September 2019 informed Audit that even with the engagement of those junior Systems Analysts, with part of their time spent on programming work, there had still been a significant shortage of manpower at the rank of Analyst/Programmer, ranging from 2 to 32 staff (i.e. an average of 14 staff

Note 21: *According to the Judiciary Administration's records, the ratio of outsourcing and in-house development for the programming work for Stage 1 court systems was about 50:50.*

Progress in project implementation and problems encountered

per annum) during the period from 2013-14 to 2018-19. In Audit's view, the Judiciary Administration needs to improve its planning on hiring outsourcing contractors to shorten the lengthy hiring process, and continue to explore ways to address the manpower shortage at the rank of Analyst/Programmer for supporting the implementation of the remaining projects under ITSP Phase 1, as well as the planned projects under Phase 2.

2.14 ***High T-contract staff turnover rate.*** According to OGCI Circular No. 4/2010, too much reliance on contract staff, in particular with a high turnover rate of contract staff, will not be conducive to maintaining the stability, effectiveness and continuity of IT services, as well as retaining knowledge and experience they obtained in the course of their engagement. Audit examination of the Judiciary Administration's records on engagement of T-contract staff involved in the implementation of ITSP revealed that the turnover rates (Note 22) for the period from 2014-15 to 2018-19 were considerable (see Table 8). There is a need for the Judiciary Administration to explore ways to lower the turnover rate with a view to retaining the core IT skills built up in previous projects under ITSP Phase 1 for supporting the implementation of the remaining projects under ITSP Phase 1, as well as the planned projects under Phase 2.

Note 22: *Turnover rate refers to the proportion of T-contract staff involved in the implementation of ITSP who left the Judiciary Administration (excluding internal movements) during the year. The turnover rate is calculated as:*

[Number of staff who left during the year/(Number of staff as at 16 March of the year + Number of staff as at 15 March of the following year) ÷ 2] × 100%.

Table 8**Turnover rate of T-contract staff involved
in the implementation of ITSP
(2014-15 to 2018-19)**

Year	Turnover rate
2014-15	6.8%
2015-16	33.7%
2016-17	16.3%
2017-18	24.0%
2018-19	24.2%

Source: Audit analysis of Judiciary Administration records

2.15 In connection with the observations on the shortage and high turnover rate of T-contract staff as mentioned in paragraphs 2.12 to 2.14, Audit also noted that the Judiciary Administration solely relied on T-contract staff to supplement its civil service IT team. Audit considers that the Judiciary Administration may consider engaging Non-Civil Service Contract (NCSC — Note 23) staff if T-contract staff at the appropriate rank was unavailable. In this connection, OGCIO also remarked at the meeting of the Steering Committee held in September 2013 that the Judiciary Administration might consider engaging NCSC staff in addition to T-contract staff to supplement the required resources and expertise.

Long lead time in procurement of IT infrastructure

2.16 ***Procurement of IT infrastructure.*** Under ITSP, the IT infrastructure would be incrementally upgraded for supporting the progressive implementation of application systems, including the core application system of iCMS. One of the major upgrades of the IT infrastructure was to upgrade the central IT facilities (i.e. IT

Note 23: *According to OGCIO Circular No. 4/2010, NCSC Staff Scheme is to provide B/Ds with the necessary flexibility in meeting their operational needs in different situations. Briefly, NCSC staff are mainly engaged for meeting service needs which are time-limited, seasonal in nature or which require staff to work less than conditioned hours or which require tapping the latest market expertise, etc.*

Progress in project implementation and problems encountered

network system, IT security system, and server and storage system). With an estimated contract value of about \$195 million, it was planned that the required hardware, software and services for upgrading the central IT facilities were to be procured through an open tender exercise. In accordance with the Stores and Procurement Regulations, other B/Ds such as the Government Logistics Department and DoJ would be involved in the tendering process (e.g. preparation of tender documents, issue of tender invitations, tender evaluation and award of contract).

2.17 Over-optimistic work schedule for tendering work involving other B/Ds. According to the Judiciary Administration, the tender invitation for procurement of IT infrastructure under Activity B of ITSP was targeted to be issued in April 2015. The contract was targeted to be awarded in October 2015 and the IT infrastructure would be completed by March 2017. However, the tender invitation was only issued in November 2015 (i.e. a delay of 7 months). The contract was only awarded in November 2016 (i.e. a delay of 13 months). The IT infrastructure was eventually completed in February 2018. Audit found that the delays were caused by the fact that the Judiciary Administration had formulated an over-optimistic work schedule for the necessary tendering work involving other B/Ds, as follows:

- (a) **Clearance of tender documents.** The Judiciary Administration sought advice from DoJ on the draft tender documents in mid-February 2015 (i.e. only about 40 days before the target tender issue date by mid-April 2015). DoJ considered that the timetable was rather aggressive given the large volume of the documents to be reviewed. After several rounds of clarifications from the Judiciary Administration and advices by DoJ on various drafts of the tender documents, DoJ cleared the tender documents in July 2015; and
- (b) **Tendering activities.** The Judiciary Administration contacted the Government Logistics Department in early June 2015 to discuss the tender arrangement and proposed to issue the tender invitation in July 2015 and award the contract in December 2015 (i.e. in 5-month time). In response, the Government Logistics Department commented that the proposed schedules to issue the tender invitation and arrange other major tendering activities (e.g. tender evaluation, vetting of tender recommendation and clearance of tender report) were not realistic because about 8 to 14 months were required from the issue of tender to the award of contract. After several rounds of vetting and clarifications, the tender invitation was issued in November 2015. After the tender was closed in January 2016, the

Judiciary Administration and the Government Logistics Department took around 10 months for arranging the major tendering activities and awarded the contract in November 2016, which was in line with the estimation of 8 to 14 months by the Government Logistics Department.

In Audit's view, the Judiciary Administration needs to draw lessons from the incidents to improve the planning of tendering work involving other B/Ds in undertaking similar procurement activities in future, especially for those remaining projects under ITSP Phase 1 and planned projects under Phase 2.

Long time taken in developing Stage 1 court systems

2.18 The development of Stage 1 court systems under Activity B before rollout generally involved the following stages:

- (a) ***Collection of user requirements.*** In this stage, user requirements would be collected to formulate the user requirement documents. Screen prototypes would also be produced to seek users' comments;
- (b) ***SA&D.*** In this stage, the current system environment and the user requirements would be studied with a view to defining problem areas and/or improvement opportunities. Based on the information collected, design and specification documents would be produced and a final report, namely SA&D Report would be produced for users' comments before seeking the Steering Committee's endorsement; and
- (c) ***Implementation and user acceptance tests (UATs).*** In this stage, the system would be designed and programmes would be developed. Upon completion of system testing, the system would be passed to users for UATs. Upon successful completion of all necessary tests, endorsement from the Steering Committee would be sought to signify the end of this stage.

2.19 ***Additional time taken to collect user requirements and complete SA&D.*** According to the project schedule as of April 2014, the collection of user requirements and SA&D were targeted to be completed in September 2014 and June 2015 respectively. However, the work on collecting user requirements and SA&D was only completed in March 2015 and May 2016 respectively, representing an overall

Progress in project implementation and problems encountered

delay of 11 months. According to the Judiciary Administration, major reasons for the additional time incurred include:

- (a) the work on defining user requirements for the iCMS had incurred more time and efforts than planned. A total of 117 sets of user requirement documents were produced, 172% more than the estimated planned number of 43 sets;
- (b) the user requirements covered a much wider scope of business operations than that covered by the existing case management systems;
- (c) the clarifications on the process automation to be enabled in the workflow of iCMS and formulation of user requirement documents were resource-intensive and took longer than expected to complete. To pave way for a smooth start of SA&D, about 130 half-day clarification sessions among the end-user representatives and the Information Technology Office were scheduled; and
- (d) due to competing priorities, users had difficulties in meeting the deadlines for comments and required more time to firm up their requirements, which might have delayed SA&D work.

2.20 ***Prolonged extension of UATs.*** As noted at the meeting of the Steering Committee held in March 2016, it was anticipated that UATs for Stage 1 court systems would be completed by March 2017. According to the Judiciary Administration's records as of December 2017, there were about 1,400 change requests raised during the UATs. In the event, such UATs were only substantially completed (Note 24) in early 2019, representing a delay of about two years. Audit examined the Judiciary Administration's records and found that the primary cause of the delay was that a substantial number of change requests were raised during UATs (see Case 1 for an illustration).

Note 24: *According to the Judiciary Administration's records, another round of UATs was scheduled to be conducted from September to November 2020 for those legislative amendment dependent functions in iCMS because it was expected that programme enhancements would need to be made subsequent to the legislative amendments.*

Case 1

Prolonged extension of UATs of iCMS at the District Court

1. UATs of core functions of iCMS at the District Court commenced in January 2017 and were targeted to be completed in six rounds by September 2017. In September 2017, end-users of the District Court (e.g. court support staff) decided to, as part of UAT process, conduct an end-to-end test on all major workflows for different case types such as civil actions and criminal cases. This was done in parallel to the then planned last (i.e. the sixth) round of UATs.

2. The end-to-end tests were completed in February 2018 and a substantive number of requirement changes were raised as essential features to be included for production rollout. In response to the requirement changes, programme enhancements were made from February to June 2018. Another (i.e. the seventh) round of UATs (including another end-to-end test) commenced in July 2018. Eventually, UATs were completed in December 2018, representing a delay of 15 months.

Audit comments

3. While Audit noted that the requirement changes raised during UATs were for enhancing operational efficiency of the iCMS, it would be more desirable if such requirement changes could have been identified in earlier stages, given that additional time had been spent on collecting user requirements and SA&D (see para. 2.19). As a result of the revisions to user requirements and extension of UATs, the Judiciary Administration estimated that an additional sum of about \$23 million would have to be incurred.

Source: Audit analysis of Judiciary Administration records

2.21 Audit noted that the Judiciary Administration would, with reference to the experiences gained and problems encountered in implementing the Stage 1 court systems, introduce improvement measures (such as setting up a project team on the user side and using templates in the form of end-to-end operational steps to facilitate users in stating detailed business requirements) to facilitate the future implementation of projects under ITSP. While noting that proactive actions have been taken by the Judiciary Administration to improve the process in collecting user requirements, Audit considers that the Judiciary Administration should also review and improve the process of making key requirement changes during UATs (e.g. setting a definite time for sign-off of UATs and processing change requests as enhancements after system rollout as appropriate).

Engagement of prosecuting departments and agencies to prepare for the rollout of iCMS

2.22 ***Migration to iCMS for summons applications.*** Under ITSP, iCMS would be introduced by phases across all court levels so that court users, including the prosecuting departments and agencies, would be given an option to handle court documents and payments with the court electronically. At Stage 1 of ITSP Phase 1, iCMS would be implemented in the Summons Courts of the Magistrates' Courts. Departmental summons and fixed penalty cases (Note 25) would be the key types of court cases to be affected. Instead of using CASEMAN (see para. 1.13(c)), the Judiciary's existing electronic platform for submitting cases handled by the Summons Courts, the relevant prosecuting departments and agencies for all these cases are expected to migrate to iCMS (i.e. by either inputting applications via the web portal of iCMS or setting up a system interface with iCMS for transmission of applications) within a period of three years after the rolling out of iCMS in all the Magistrates' Courts. CASEMAN is then expected to cease handling these cases.

2.23 ***Judiciary Administration's coordination work with the prosecuting departments and agencies.*** In 2015, the Judiciary Administration started studying the interfaces of iCMS with the systems of the prosecuting departments and agencies and initiated early discussions with key prosecuting departments and agencies such as the Hong Kong Police Force. From June 2016 to August 2017, the Judiciary Administration held engagement briefings and meetings with about 40 prosecuting departments and agencies, among others, to introduce the changes arising from the introduction of iCMS. In September 2017, the Judiciary Administration issued to the prosecuting departments and agencies the technical and operational details about the implementation of iCMS at the Summons Courts of the Magistrates' Courts to facilitate their planning for migration to iCMS. In September 2018 and February 2019, the Judiciary Administration started two consultations with the external stakeholders (including the prosecuting departments and agencies and legal

Note 25: *Examples of departmental summons and fixed penalty cases include traffic-related offence cases initiated by the Hong Kong Police Force and the Transport Department, offence cases related to public cleanliness initiated by the Food and Environmental Hygiene Department and tax-related offence cases initiated by the Inland Revenue Department.*

professional bodies — Note 26) on the proposed administrative arrangements and legislation respectively.

2.24 *Areas for improvement and challenges ahead.* Audit examined the Judiciary Administration's efforts in coordinating with the prosecuting departments and agencies to prepare for the rollout of iCMS and noted the following areas for improvement and challenges ahead:

- (a) *Notes of some meetings not prepared.* From June 2016 to August 2017, the Judiciary Administration held 19 engagement meetings with the prosecuting departments and agencies on the rollout of iCMS. However, Audit found that internal notes of meeting were only prepared for 4 meetings. In response to Audit's enquiry, the Judiciary Administration in August 2019 said that:
 - (i) the engagement meetings were held mainly for briefing the prosecuting departments and agencies on the overall timeline and proposed arrangements so that they might make any necessary corresponding preparations;
 - (ii) the issues raised at the meetings were mostly operational and/or technical in nature and it was considered not necessary to prepare any formal notes of meetings; and
 - (iii) if any specific issues raised at the meetings required follow-up actions, the relevant follow-up e-mails would be filed.

While noting the Judiciary Administration's explanations, Audit found that the contents discussed at the four meetings with internal notes of meetings prepared were similar to those discussed at the other 15 meetings without complete notes of meetings. Besides, while internal notes of meetings were prepared for the four meetings attended by some 30 prosecuting departments and agencies which were involved in a smaller caseload of summons, complete notes of meetings were not prepared for the other

Note 26: *The consultations covered the proposed administrative arrangements (commenced in September 2018) and the proposed legislation and Practice Directions (commenced in February 2019).*

Progress in project implementation and problems encountered

15 meetings which were attended by 10 key prosecuting departments and agencies with the highest caseload of summons. In Audit's view, to enhance accountability, the Judiciary Administration needs to keep proper and complete meeting records as far as practicable;

- (b) ***Briefings on the design and use of web portal not yet organised.*** According to the notes of the meetings with some 30 prosecuting departments and agencies held in early 2017, another briefing to some 40 prosecuting departments and agencies would be held on the design and usage of the web portal in mid-2017. Audit examination of the Judiciary Administration's records however revealed that such briefings (i.e. involving the demonstration of the workflow using the web portal) were only provided to two key prosecuting departments in January and August 2018 respectively. To ensure that the prosecuting departments and agencies are familiar with the design and use of web portal, the Judiciary Administration needs to organise briefings to all the prosecuting departments and agencies as soon as practicable; and
- (c) ***Unresolved issues between government departments over system interface with iCMS.*** Audit noted that in the course of coordinating the prosecuting departments and agencies in preparing for the system interface with iCMS, there were a few unresolved issues between government departments on the setting up of system interface with iCMS. For example, there have been on-going discussions between the Hong Kong Police Force and the Transport Department since 2016 on the system interface of summons applications relating to traffic-related offences (Note 27). While some progress was made in 2018 with the facilitation of DoJ, there were still some unresolved issues (e.g. system workflow for plead-not-guilty cases) up to July 2019. The Judiciary Administration needs to closely liaise with the prosecuting departments and agencies and take appropriate actions (e.g. escalating to the high-level officers in the executive authorities) in case the inter-departmental issues remain unresolved.

Note 27: *In gist, the discussions are related to how the data related to summons of traffic-related offences from the Hong Kong Police Force and the Transport Department would be merged before submitting the summons applications to iCMS.*

Audit recommendations

2.25 **Audit has *recommended* that the Judiciary Administrator should:**

- (a) step up monitoring of the implementation of all projects under ITSP Phase 1 and expedite actions where possible to complete the outstanding projects as early as practicable;**
- (b) taking into account lessons drawn from the problems encountered during project implementation, enhance the planning and implementation of future IT projects, including:**
 - (i) improving the planning on hiring outsourcing contractors to shorten the lengthy hiring process;**
 - (ii) exploring ways to address manpower shortage issues, including shortage of manpower at the rank of Analyst/Programmer and high turnover rate of T-contract staff (e.g. considering engaging NCSC staff to supplement the required resources and expertise);**
 - (iii) improving the planning of tendering work involving other B/Ds in undertaking similar procurement activities in future, especially for those remaining projects under ITSP Phase 1 and planned projects under Phase 2; and**
 - (iv) reviewing and improving the process of making key requirement changes during UATs; and**
- (c) improve the engagement work with the prosecuting departments and agencies in preparing for the rollout of iCMS, including:**
 - (i) keeping proper and complete meeting records as far as practicable;**
 - (ii) organising briefings to all prosecuting departments and agencies on the design and usage of web portal as soon as practicable; and**

- (iii) **closely liaising with the prosecuting departments and agencies and taking appropriate actions in response to any unresolved issues among them over the system interface with iCMS.**

Response from the Judiciary and the Government

2.26 The Judiciary Administrator agrees with the audit recommendations. She has said that:

- (a) the Judiciary Administration is in the process of consolidating and refining the governance structure for not only Phase 1 Stage 1 projects, but also Phase 1 Stage 2 projects in order to meet the challenges ahead. With the refined governance structure, the Judiciary Administration should be able to better monitor ITSP implementation and expedite actions where possible to complete the outstanding projects as early as practicable;
- (b) the Judiciary Administration will adopt the measures stipulated in the recent guidelines/circular memorandum issued by OGCIO and the Financial Services and the Treasury Bureau in February 2016 and December 2017 respectively in planning and arranging future procurement exercises so as to shorten the related tendering process;
- (c) to address the manpower shortage issues, the Judiciary Administration will continue to closely monitor the manpower situation and explore all possible means, including considering the engagement of NCSC staff, to recruit and retain technical staff with suitable skill sets;
- (d) the Judiciary Administration will review and refine the control procedures for handling key change requests in accordance with the Programme Management Plan (PMP — see para. 3.2) so as to better manage key users' requirement changes at UAT stage and ensure timely submissions to the relevant authorities for consideration and approval where appropriate;
- (e) with regard to briefings to all prosecuting departments and agencies on the design and usage of iCMS web portal, the Judiciary Administration has planned to conduct such briefings at a suitable juncture; and

Progress in project implementation and problems encountered

- (f) the Judiciary Administration has been taking all necessary actions with the relevant parties to resolve the outstanding issues among the prosecuting departments and agencies relating to the system interface with iCMS. The Judiciary Administration will continue to explore and take additional appropriate actions as necessary.

2.27 The Secretary for Justice has said that DoJ notes the audit recommendations in paragraph 2.25 and will continue to work closely with the Judiciary to facilitate the implementation of ITSP.

2.28 The Commissioner for Transport has said that while noting that there are unresolved issues between government departments on the setting up of system interface with iCMS, the Transport Department will continue to liaise closely with the Judiciary and other prosecuting departments with a view to resolving differences in views and ensuring smooth interfaces between the Transport Department's system and other prosecuting departments' systems and with iCMS.

PART 3: PROJECT GOVERNANCE

3.1 This PART examines issues relating to project governance under ITSP, focusing on:

- (a) change of governance structure (paras. 3.3 to 3.6);
- (b) project monitoring (paras. 3.7 to 3.13); and
- (c) reporting of project progress (paras. 3.14 to 3.18).

Governance structure of ITSP

3.2 **Project governance.** According to OGCIO's guidelines on project management, a proper project organisation is essential for the effective management of a project. The Judiciary has established a governance structure for the implementation of projects under ITSP with reference to OGCIO's guidelines. The governance structure is headed by CIT and supported by the Steering Committee (see para. 1.10(a)(i) and (b)(i), and Appendix C). The terms of reference of CIT and the key roles and responsibilities of the Steering Committee, as defined in PMP (Note 28) of ITSP, are as follows:

- (a) **CIT.** CIT is tasked to: (i) oversee the ongoing development of ITSP; (ii) explore the feasibility and benefits of and consider proposals on potential applications of IT to the practice, procedure and operation of the courts at all levels, and to make recommendations as to any applications which should be adopted; and (iii) oversee the implementation of ITSP and other adopted IT applications; and

Note 28: *PMP is a key management deliverable of ITSP. The purpose of PMP is to describe the overall management approach for work to be performed for ITSP throughout its implementation life cycle. The PMP: (a) provides an overview of ITSP's motivation, objectives, success criteria, major deliverables, assumptions and constraints; and (b) highlights the management structure, activities, processes and/or procedures to be followed by all project stakeholders in the management of ITSP.*

- (b) *Steering Committee.* The Steering Committee is accountable to CIT and responsible for, among other duties: (i) committing project resources; (ii) endorsing the project budget; (iii) endorsing major deliverables of projects that meet acceptance criteria at each project phase; (iv) reviewing performance, providing overall direction to implementation of ITSP, and addressing areas of improvement on a regular basis; (v) recommending future actions on the project if any project tolerance is exceeded (e.g. significant cost overrun or project slippage), and escalating to CIT where appropriate; and (vi) endorsing progress update reports and project closure.

Change of governance structure

Change of governance structure not endorsed by appropriate authority

3.3 *Original governance structure.* In April 2013, CIT endorsed the proposed governance structure of ITSP. According to the endorsed governance structure, in view of the multitude of activities, studies and projects involved in ITSP:

- (a) the Steering Committee would be supported by three project steering committees responsible for different projects (i.e. (i) iCMS and associated projects; (ii) data-related projects; and (iii) infrastructure projects);
- (b) while the Steering Committee would monitor the implementation of ITSP at a strategic level, project management responsibilities such as committing project resources, and endorsing acceptance of project plans and deliverables were delegated to the project steering committees;
- (c) regarding membership of the three project steering committees, while the committee on iCMS and associated projects was chaired by the Judiciary Administrator and comprised senior staff as members, the other two committees were chaired by a Chief Systems Manager and comprised mainly technical and mid-level management staff as members. The three project steering committees were supported by three project assurance teams on quality assurance work of the projects such as approving change requests; and
- (d) the three Working Groups under CIT (see para. 1.10(a)(ii)) would be supported by nine advisory committees led by JJOs set up to deliberate on

issues in greater details in various specific areas (e.g. the provision of e-services at different court levels). A Project Studies Steering Group would be formed under the Steering Committee to oversee project study teams which largely mirrored the work of the nine advisory committees (Note 29).

3.4 Grouping of project steering committees under ITSP Delivery and Assurance Team. In February 2014, PMP was submitted to the Steering Committee for endorsement. According to the endorsed PMP, the three project steering committees and their respective project assurance teams were grouped collectively under ITSP Delivery and Assurance Team (see para. 1.10(b)(ii)). According to the Judiciary Administration, the roles and responsibilities of the three project steering committees and their respective project assurance teams were taken up by ITSP Delivery and Assurance Team. However, Audit examination of the Judiciary Administration's records found the following issues:

- (a) **Lack of endorsement by CIT.** No record was available showing that the grouping of the three project steering committees and their respective project assurance teams under ITSP Delivery and Assurance Team had been endorsed by CIT, which approved the original governance structure in April 2013 (see para. 3.3);
- (b) **Change of membership.** While the original project steering committee on iCMS and associated projects was planned to be chaired by the Judiciary Administrator and comprised senior staff as members, the membership of ITSP Delivery and Assurance Team had been revised with a Chief Systems Manager as the Chairman and mid-level management staff as members; and
- (c) **Responsibilities of the Steering Committee not delegated.** According to PMP, certain project management responsibilities rested on the Steering Committee, but not ITSP Delivery and Assurance Team. For example, it was stated in PMP that the responsibilities of the Steering Committee

Note 29: *According to the Judiciary Administration, the Project Studies Steering Group was led by the senior management of the Judiciary Administration to deliberate on relevant issues in greater details and provide steer and advice to project study teams, ensure that the objectives of the project studies align with ITSP, align priorities and proposals among project studies, monitor the progress of the respective project studies and report their progress and performance to the Steering Committee.*

included convening meetings to approve risk mitigation plans, project changes, issue resolutions and resource allocation, and endorse major project deliverables. As the project management responsibilities had not been delegated to ITSP Delivery and Assurance Team as planned due to the change in membership (see (b)), the Steering Committee might need to arrange more frequent meetings (see paras. 3.8 and 3.9) to discharge its project management responsibilities as defined in PMP.

3.5 *Need to review the governance structure of ITSP.* Upon enquiry, the Judiciary Administration informed Audit in September 2019 that:

- (a) with reference to OGCIO's guidelines, the Steering Committee was the authority to endorse the governance structure within its purview as defined in PMP. Therefore, seeking CIT's approval of the grouping of the three project steering committees and their respective project assurance teams under ITSP Delivery and Assurance Team for the purpose of streamlining the governance structure was considered unnecessary; and
- (b) the grouping resulted in no change in substance to the responsibilities of the Steering Committee as a whole on the project management and accountability level necessitating CIT's fresh approval of the Steering Committee's structure.

While noting the Judiciary Administration's explanations, Audit considers that there is still merit in reviewing the current governance structure of ITSP as defined in PMP (e.g. reviewing the need for delegating some of the project management responsibilities to ITSP Delivery and Assurance Team to avoid overloading the Steering Committee) and seek the endorsement of the appropriate authority for any revisions where appropriate.

3.6 *Consolidation of project study teams and advisory committees.* According to the Judiciary Administration, as the implementation of ITSP progressed, the ways and mechanism in overseeing its implementation might need to be adjusted to cater for its operational needs, particularly in light of experience and having regard to the nature of work required at different stages of the projects. In this regard, the relevant project study teams under the Project Studies Steering Group and the relevant advisory committees (see para. 3.3(d)) for the implementation of Stage 1 court systems have been replaced by the Policy and Legislative Group and the two Operational Groups

Project governance

for the District Court and the Summons Courts of the Magistrates' Courts since May 2017 (see Note 7 to para. 1.10(a)(iii)). Audit however found that such changes had not been reflected in the latest version of PMP endorsed by the Steering Committee in July 2018. In Audit's view, there is a need to ensure that any revisions to the governance structure of ITSP are properly endorsed by the appropriate authority.

Project monitoring

Monitoring mechanism

3.7 *Meetings and project deliverables.* According to PMP, a formal communication framework should be put in place to monitor the progress of projects under ITSP, which includes the following:

- (a) *Meetings of the Steering Committee.* They should be held during project kick-off, at end of stage and on a need basis (Note 30). The objectives of holding meetings are to present project status, gather members' comments, and seek approval on risk mitigation plans, project changes, issue resolutions and resource allocation;
- (b) *Progress update to CIT.* Unlike the meetings of the Steering Committee, PMP does not specify any requirement on holding CIT meetings. However, it is stated in PMP that members of the Steering Committee are responsible for briefing and advising CIT on critical matters concerning ITSP implementation. For example, if there is an issue having a significant impact on the scope, schedule, cost and quality of the projects under ITSP (e.g. overall project slippage of over 20% or more than six months), such issue should be escalated to CIT for advice; and
- (c) *Overall programme highlight.* The Programme Management Office (see para. 1.10(b)(iii)) should submit a monthly highlight report in a prescribed format via e-mail to the Steering Committee and ITSP Delivery and Assurance Team providing updated information of the overall progress of

Note 30: *According to the minutes of meeting of the Steering Committee held in June 2013, the Committee's meetings had been scheduled to be held on a monthly basis but if there were no substantive issues for discussion, the meeting could be cancelled.*

ITSP and key milestones ahead. The monthly highlight report should also include any risks and issues identified, and information on change requests raised in the previous month.

Areas for improvement

3.8 ***Less frequent meetings of the Steering Committee.*** Since the commencement of project implementation under ITSP Phase 1 in May 2013 and up to June 2019, 15 Steering Committee meetings had been held. Audit analysed the meeting dates and noted that fewer meetings had been held since 2016 and the intervals between meetings had become longer (see Table 9).

Table 9

**Analysis of Steering Committee meeting dates
(May 2013 to June 2019)**

Year	Number of meetings	Average number of days between meetings
2013 (From May)	3	53
2014	3	120
2015	3	142
2016	2	196
2017	1	182
2018	2	255
2019 (Up to June)	1	198

Source: Audit analysis of Judiciary Administration records

3.9 As highlighted in paragraphs 3.2(b) and 3.7(a), the Steering Committee is responsible for making decisions in respect of the implementation of projects under ITSP, such as endorsing major project deliverables, and granting approvals on project changes and resource allocation. Therefore, it is important for the Steering

Project governance

Committee to arrange timely meetings to discuss project issues and make decisions. In this connection, Audit noted that in the case of conducting UATs of iCMS at the District Court (see Case 1 in para. 2.20), while the completion date of UATs was substantially deferred by 15 months from September 2017 to December 2018, only two Steering Committee meetings were held during the period (i.e. in January and November 2018), at which the Steering Committee was informed of the longer time taken in conducting UATs. In Audit's view, more frequent meetings should have been held during the period to enable the Steering Committee to closely monitor UAT work progress and provide timely advice (especially the expert view of the Government Chief Information Officer who was a member of the Steering Committee — see para. 1.10(b)(i)) on resolving the issue. Upon enquiry, the Judiciary Administration informed Audit in September 2019 that:

- (a) to complement the Steering Committee's meetings, 53 Internal Monitoring Meetings and 14 ITSP Core Group meetings (see Note 10 to para. 1.10) which were chaired by the Judiciary Administrator and comprised all directorate officers involved in ITSP were held during the period from April 2013 to June 2019; and
- (b) practically speaking, high-level internal meetings were held roughly on a monthly basis.

While noting the Judiciary Administration's explanations on convening meetings under its internal monitoring mechanism, given that the roles and responsibilities of the Steering Committee have been clearly defined in the formal communication framework of PMP (see para. 3.7(a)) and taking into consideration that the expert advice of the Government Chief Information Officer could be sought during the Steering Committee's meetings, Audit considers that there is a need to convene meetings of the Steering Committee in a timely manner for discussing and resolving project issues at a strategic level, and making project decisions in accordance with PMP.

3.10 ***Fewer progress updates to CIT.*** According to its terms of reference, CIT oversees the ongoing development and implementation of ITSP at a strategic level and provides steer on ITSP as and when appropriate (see para. 3.2(a)). While CIT meetings were less frequent than those of the Steering Committee, the Judiciary Administration would provide CIT members with ITSP progress updates between meetings through circulation of papers. Audit's analysis revealed a decreasing trend

on the numbers of CIT meetings held and ITSP-related papers issued to CIT members from April 2013 to June 2019 (see Table 10).

Table 10

**Analysis of CIT meetings and ITSP-related
papers issued to CIT members
(April 2013 to June 2019)**

Year	Number of meetings	Number of ITSP-related papers issued to CIT members
2013 (From April)	2	13
2014	2	12
2015	2	7
2016	1	6
2017	1	4
2018	0	0
2019 (Up to June)	0	0

Source: Audit analysis of Judiciary Administration records

3.11 Upon enquiry, the Judiciary Administration informed Audit in September 2019 that:

- (a) during the period between May 2017 and June 2019, intensive work (54 meetings were held) had been done under the Policy and Legislative Group for the District Court and the Summons Courts of the Magistrates' Courts, which was set up under the Working Group on iCMS under CIT (see para. 1.10(a)(iii));
- (b) practically speaking, nearly two meetings were held on a monthly basis; and

- (c) discussions with the Chairman of the Working Group on iCMS and other relevant senior JJOs outside the Policy and Legislative Group had been held for key policy and legislative issues.

While noting the Judiciary Administration's explanations, Audit considers it imperative that CIT should be provided with more timely updates on the implementation of projects under ITSP because the Policy and Legislative Group is only one of the advisory groups under CIT focusing on providing detailed steer and monitoring in relation to the implementation of Stage 1 court systems, while CIT is tasked to oversee the implementation of ITSP at a strategic level. Moreover, it has been stated in PMP that CIT should be briefed and advised on critical matters concerning ITSP implementation and any issues that have a significant impact on the scope, schedule, cost and quality of the projects under ITSP should be escalated to CIT for advice.

3.12 ***Inadequacies of monthly highlight reports.*** The monthly highlight reports prepared by the Programme Management Office provide the Steering Committee and ITSP Delivery and Assurance Team with information on the overall progress of ITSP and any project risks, issues and change requests on a monthly basis (see para. 3.7(c)). Audit examination of the 65 monthly highlight reports from March 2014 (i.e. the first month after the endorsement of PMP by the Steering Committee in February 2014 — see para. 3.4) to July 2019 found the following issues:

- (a) ***Monthly highlight reports not timely submitted.*** Of the 65 monthly highlight reports, 46 (71%) were not timely submitted in the following month, contrary to the requirement of PMP (see para. 3.7(c)). In particular, 17 monthly highlight reports for February 2018 to June 2019 were only submitted in one go in August 2019;
- (b) ***Over-optimistic project status ratings.*** The overall project progress was presented in the monthly highlight reports using a three-colour rating system (i.e. red, yellow and green — Note 31) to provide an easy-to-read

Note 31: *A three-colour rating system is adopted to indicate the project status. The project status is red if milestones are missed and significant risks or issues are foreseen. The project status is yellow if milestones are hit but significant risks or issues are foreseen, or milestones are missed but there is no serious risk of delay to achieving significant later milestones. The project status is green if milestones are hit and no major risks or issues are foreseen.*

assessment on the status of the projects quickly. In the 65 monthly highlight reports, the overall project progress was rated as green 50 times and as yellow 15 times. Given that there were slippages in all the four activities under ITSP Phase 1 (see para. 2.4), the ratings seemed to be over-optimistic. For example, in the monthly highlight report for October 2017, in view of the delays in completing the end-to-end test for the implementation of Stage 1 court systems in the District Court and that the impact on the original rollout date had yet to be ascertained (see Case 1 in para. 2.20), the overall project status was still rated as green, and hence the Steering Committee or ITSP Delivery and Assurance Team might be misled accordingly; and

- (c) *Status of project issues and change requests not reported.* According to OGCIO's guidelines on project management, it is a good practice to report the status of project risks and issues regularly via the monthly highlight reports. Audit however found that, although there had been significant project slippages and a substantial number of change requests received (see para. 2.20), such project issues and change requests were not reported in all the 65 monthly highlight reports.

There is a need for the Judiciary Administration to improve the timeliness of submission and quality of the monthly highlight reports to facilitate the effective monitoring of the project progress by the Steering Committee and ITSP Delivery and Assurance Team.

3.13 *Need to maintain proper records on the Steering Committee's approvals of revisions of completion dates of project activities.* According to PMP, one of the objectives of the Steering Committee's meetings is to seek approval on project changes. Revision of completion dates of project activities is one type of project changes that should be approved at the Steering Committee's meetings. After approvals of the Steering Committee have been sought, such revised completion dates should be reported in the monthly progress reports to OGCIO for monitoring purpose (see para. 1.12). However, Audit examination of the papers and minutes of all the 15 Steering Committee meetings from May 2013 to June 2019 (see para. 3.8) found that:

- (a) approvals for revision of completion dates of project activities were not explicitly sought during the Steering Committee's meetings;

Project governance

- (b) in practice, information papers on ITSP progress update (which contained narratives describing progress of different projects under ITSP, issues and difficulties arising from their implementation and revised detailed work plans as and when required) were issued to members of the Steering Committee before meetings; and
- (c) members of the Steering Committee were invited to take note of the progress of the implementation during the meetings.

Upon enquiry, the Judiciary Administration informed Audit in September 2019 that any revisions to the project schedule would be reflected in PMP after discussion at the Steering Committees' meetings, and any updated PMP would be circulated to members of the Steering Committee for comments with the fair and confirmed version issued to members for retention. Audit examination of the PMPs however found that not all the revised/actual completion dates of the four activities under ITSP Phase 1 had been reflected in PMPs. In Audit's view, as the completion dates of project activities are a key measurement on the timeliness of project delivery, the Judiciary Administration needs to maintain proper records on approving revisions of completion dates of project activities by the Steering Committee.

Reporting of project progress

Reporting requirements

3.14 *Annual progress reports to FC.* According to Financial Circular No. 2/2017 on Guides for Controlling Officers on management of non-works projects funded by the Government, Controlling Officers should consider whether it is necessary to regularly brief LegCo about the progress of the projects, in order to enhance transparency and public accountability. In this connection, the Government has undertaken to provide FC Members with an annual progress report on the implementation of major computer projects (see para. 1.12).

3.15 *Progress reports to OGCIO.* According to OGCIO Circular No. 2/2011 on strengthening the governance of IT projects, project owners are required to submit progress reports on status updates to OGCIO on a monthly basis for Tier 1 projects (see para. 1.11) to enable OGCIO to monitor the health status of all projects and provide timely advice when necessary. In practice, OGCIO has put in place a computer system to automatically call for periodic reports to update project progress.

There are two types of progress reports, namely the Project Progress Update Form (submitted on a monthly basis) and the Quarterly Project Progress Review Form. Both types of progress reports are in a prescribed format and OGCIO has issued a set of guidance notes to assist project owners in completing the progress reports.

Areas for improvement

3.16 ***Annual progress reports to FC.*** Since 2014 and up to 2018, the Government had submitted to FC five annual progress reports comprising progress updates on implementation of projects under ITSP of the Judiciary. Audit examined all the five reports and noted the following areas for improvement in respect of reporting the implementation progress of projects under ITSP of the Judiciary:

- (a) ***Scheduled/revised completion dates not reported by stages.*** As mentioned in paragraph 1.7, the implementation of ITSP Phase 1 was divided into two stages. In other words, there were two scheduled completion dates for ITSP Phase 1 Stages 1 and 2. However, in all the five annual progress reports, only the overall project completion date of ITSP projects (i.e. completion date of Stage 2 court systems) and narrative updates on the latest project status and achievements of key milestones were reported. In Audit's view, for large-scale IT projects such as implementation of ITSP of the Judiciary, in order to present a complete picture of the project progress, it is more desirable to report the scheduled/revised completion dates by stages. In this connection, Audit noted that for some IT projects of other project owners (e.g. IT projects of the Immigration Department and the Inland Revenue Department), in addition to the overall project completion dates, the scheduled/revised completion dates by stages were also reported in the same annual progress reports; and
- (b) ***Target completion date not up-to-date.*** According to the information papers on ITSP progress update issued to members of the Steering Committee (see para. 3.13(b)), the overall completion date (i.e. the completion date of Stage 2 court systems) was deferred from December 2019 to November 2020 in June 2017, and further to June 2021 in January 2018. However, the overall completion date had not been updated in the annual progress report submitted to FC in October 2018 showing the position as of March 2018. Audit noted that the failure to update the completion date in the annual progress report could possibly be due to the delays in reporting the revised completion dates in the monthly

Project governance

progress reports by the Judiciary Administration to OGCIO (see para. 3.18(a)(iii)).

3.17 *Progress reports to OGCIO.* The following requirements are set out in OGCIO guidance notes on completing the progress reports:

- (a) for both the Project Progress Update Form and Quarterly Project Progress Review Form, in reporting a revision to the completion date of a project milestone, the project owner is required to:
 - (i) seek prior approval from appropriate authority (i.e. the Steering Committee in the case of the Judiciary’s implementation of ITSP — see also para. 3.13); and
 - (ii) indicate on the progress report that approval for such change has been obtained; and
- (b) for the Quarterly Project Progress Review Form, if the project experiences slippage, the project owner must complete the analysis on project slippage by providing the problem/cause/responsible party and the milestones affected.

3.18 *Inadequacies in preparing progress reports.* Audit examined the progress reports submitted by the Judiciary Administration to OGCIO from June 2013 to June 2019 (comprising 55 Project Progress Update Forms and 25 Quarterly Project Progress Review Forms) and noted the following inadequacies:

- (a) ***Omissions and delays in reporting revised/actual completion dates.*** There were cases of omissions and delays in reporting revised/actual completion dates in the progress reports. Details are as follows:
 - (i) Activity A “Technical studies” was completed in April 2015. The actual completion date was neither reported in the Project Progress Update Form for April 2015 nor the Quarterly Project Progress Review Form for the quarter ended June 2015. In the event, the actual completion date was only reported in the Quarterly Project

Progress Review Report for the quarter ended March 2018 (i.e. a delay of around three years);

- (ii) regarding Activity B “Implementation of IT infrastructure and Stage 1 court systems”, the completion date was deferred three times after the Steering Committee’s meetings held in December 2016, January 2018 and May 2019. However, for the first two deferrals, the relevant revised completion dates were only reported in March 2017 and April 2018 (i.e. a delay of three months each); and
 - (iii) regarding Activity D “Implementation of Stage 2 court systems”, the completion date was deferred after the Steering Committee’s meeting held in June 2017. However, the revised completion date had not been reported in any progress reports submitted to OGCIO. Subsequently, the completion date was further deferred three times after the Steering Committee’s meetings held in January 2018, November 2018 and May 2019. For the first two deferrals, the relevant revised completion dates were only reported in July 2018 and January 2019 (i.e. a delay of six and two months respectively);
- (b) ***Approval for changes not included in progress reports.*** In three of the seven progress reports with revised completion dates reported, the Judiciary Administration did not mention that approvals for revising the completion dates had been obtained, contrary to the requirement in OGCIO’s guidance note (see para. 3.17(a)(ii));
- (c) ***Analysis on project slippage not documented.*** There were occasions where the analysis on project slippage in Quarterly Project Progress Review Forms (see para. 3.17(b)) had not been completed. For example, while the Judiciary Administration had reported in the progress reports for March 2017, April 2018 and May 2019 that the completion date for Activity B “Implementation of IT infrastructure and Stage 1 court systems” would be deferred (see (a)(ii) above) from December 2016 to February 2018 (i.e. a slippage of 14 months) and further to January 2019 (i.e. a slippage of 11 months) and March 2021 (i.e. a slippage of 26 months), the Judiciary Administration had not documented the analysis on project slippage in the corresponding Quarterly Project Progress Review Forms (i.e. March 2017, June 2018 and June 2019) submitted to OGCIO; and

- (d) ***Inaccurate completion date reported.*** On two occasions, the reported revised completion dates were inaccurate:
- (i) the Judiciary Administration reported in April 2018 that the completion date for Activity B “Implementation of IT infrastructure and Stage 1 court systems” would be deferred from February 2018 to January 2019 after the Steering Committee’s meeting held in January 2018 (see (c) above). Audit examination of the information paper on ITSP progress update issued to members of the Steering Committee in January 2018 however revealed that only the core functions of the Stage 1 court systems would be rolled out to the District Court and the Kowloon City Magistrates’ Courts by January 2019 and extended to the remaining six Magistrates’ Courts by April 2019; and
 - (ii) the Judiciary Administration reported in May 2019 that the completion date for Activity C “Implementation of non-court systems” would be deferred from June 2019 to December 2019 after the Steering Committee’s meeting held in May 2019. However, Audit found that 3 of the 9 non-court systems would not be ready for rollout by December 2019 (see Table 5 in para. 2.6(b)).

In Audit’s view, it may be misleading to indicate January 2019 as the revised completion date in (d)(i) above and December 2019 in (d)(ii) above considering that some of the functions and systems would be unlikely to be put into live run by that time. In light of the audit findings in paragraphs 3.16 to 3.18, the Judiciary Administration needs to improve the reporting of ITSP project progress with a view to enhancing the monitoring, transparency and accountability of ITSP project implementation.

Audit recommendations

3.19 **Audit has recommended that the Judiciary Administrator should:**

- (a) **consider reviewing the current governance structure of ITSP and ensure that any revisions to the governance structure of ITSP are properly endorsed by the appropriate authority where appropriate;**

- (b) take measures to improve the project governance under ITSP, including:**
 - (i) convening timely meetings for the Steering Committee to discuss and resolve project issues at a strategic level, and to make project decisions in accordance with PMP;**
 - (ii) providing more timely project progress updates to CIT;**
 - (iii) improving the timeliness of submission and quality of the monthly highlight reports to facilitate the effective monitoring of the project progress by the Steering Committee and ITSP Delivery and Assurance Team; and**
 - (iv) maintaining proper records on approving revisions of completion dates of project activities by the Steering Committee; and**
- (c) improve the reporting of ITSP project progress with a view to enhancing the monitoring, transparency and accountability of ITSP project implementation, including:**
 - (i) reporting the progress and scheduled/revised completion dates of the projects under ITSP by stages in future annual progress reports submitted to FC;**
 - (ii) ensuring that any revisions to the completion dates are timely updated in the annual progress reports submitted to FC; and**
 - (iii) ensuring the timely and accurate reporting of revised/actual completion dates of project activities with proper documentation of explanations on project slippages and approvals of revised completion dates in the periodic progress reports submitted by the Judiciary Administration to OGCIO.**

Response from the Judiciary

3.20 The Judiciary Administrator agrees with the audit recommendations. She has said that:

- (a) on the basis of the changes in the overall governance structure described in paragraphs 3.9 and 3.11 over the past few years, the Judiciary Administration is in the process of further consolidating and refining the governance structure for monitoring the implementation of the projects under ITSP Phase 1 Stages 1 and 2, and will submit the revised structure to CIT for endorsement;
- (b) the Judiciary Administration has started to take actions to improve the project governance under ITSP as suggested by Audit in paragraph 3.19(b); and
- (c) the Judiciary Administration has started to take actions to enhance the monitoring, transparency and accountability of ITSP project implementation as suggested by Audit in paragraph 3.19(c).

PART 4: OTHER RELATED ISSUES

4.1 This PART examines other issues relating to the implementation of ITSP, focusing on:

- (a) provision of e-services (paras. 4.2 to 4.14);
- (b) enhancement of audio-visual presentation equipment in courtrooms (paras. 4.15 to 4.25); and
- (c) promotion of the use of e-bundles (paras. 4.26 to 4.35).

Provision of e-services

4.2 ***Judiciary's website.*** The Judiciary's website is one of the most frequently used channels through which the Judiciary communicates with the community. The website provides access to a wealth of information about the Judiciary, its services for court users, and its latest news and developments. In 2018, the Judiciary's website recorded around 80 million page views. Among the webpages, the online Legal Reference System and the e-services (e.g. e-hearing date enquiry services) had the highest patronage.

4.3 ***Website revamp project under ITSP.*** Under ITSP, the Judiciary's website would undergo a two-stage revamp to enhance its user-friendliness, enrich the dissemination of information, and help website visitors access the future e-services to be introduced progressively (see para. 2.3(d)). The first-stage revamp, which mainly covered a website facelift exercise, was completed in October 2018. The second-stage revamp, which had a larger scale in terms of both user interfaces and content organisation (Note 32), was still in progress (position up to June 2019). The Judiciary Administration planned to roll out more new functions and e-services in the

Note 32: *For example, in addition to the Judiciary's homepage, web contents disseminated through satellite sites, such as the Civil Justice Reform website and the Mediation website, would also be reorganised.*

Judiciary's website and the external web portal (Note 33) along with the full rollout of the Stage 1 court systems for external users in early 2021 (see para. 2.6(a)).

4.4 ***Accessibility requirements and best practices of website design.*** OGCI0 has developed a set of guidelines on accessibility requirements and best practices for the design of government websites and e-services (Note 34). The guidelines stipulate that, B/Ds' websites should provide relevant and up-to-date information in an efficient and effective manner, and in a format that encourages access by the local and international communities. According to the Judiciary Administration, as the Judiciary's website is not a Government website, it may make reference to, but not adopt on a mandatory basis, these guidelines.

Need to improve dissemination of information on court hearings

4.5 Members of the public and court users could obtain information about schedules of court hearings (e.g. date, parties, judge and court of hearings) and related matters mainly via the following channels:

- (a) ***Daily Cause Lists and e-hearing date enquiry services.*** Daily Cause Lists provide the public with information on the court hearings scheduled on the next working day and are posted on the Judiciary's website by 6:30 p.m. on the working day preceding the hearing day. A search function is also provided for enquiry of the Daily Cause Lists by case number or by party name. For searching of court cases further away, court users (normally parties to court proceedings) may use the e-hearing date enquiry services to enquire the hearing date by case number (Note 35); and

Note 33: *The external web portal, accessible through the Judiciary's website, will be developed to act as a platform to disseminate information to the public, and serve as the gateway for users to conduct e-services (e.g. e-filing and e-payment).*

Note 34: *OGCIO's guidelines on accessibility requirements and best practices include Guidelines on Dissemination of Information through Government Websites, Technical Notes on Website Development and Maintenance, and Common Look and Feel Guidelines and Design Specifications.*

Note 35: *According to the Judiciary Administration, the Daily Cause Lists are released by the courts for the purpose of facilitating people intending to observe court proceedings (such as media and members of the public) whereas the use of e-hearing date enquiry services is enabled by the courts for the purpose of assisting parties to court proceedings in keeping track of the progress of hearing dates.*

- (b) ***Pending Lists and Warned Lists.*** Pursuant to the Practice Directions of the Judiciary, civil actions with an estimated length of trial of three days or less are generally assigned to the Running List (Note 36). On the last day of each month, the Judiciary publishes a Pending List (i.e. a list of cases on the Running List which are expected to be tried during the next succeeding month) on the notice boards in the Court of First Instance and the District Court. Each Wednesday, those cases on the Pending List which are expected to be tried during the next succeeding week are put on another list, i.e. the Warned List (Note 37), which is published on the Judiciary's website.

4.6 ***Areas for improvement.*** Audit examination has revealed the following areas for improvement which should be taken into account, where appropriate, in implementing the second stage of the website revamp project under ITSP (see para. 4.3):

- (a) ***Need to consider improving the dissemination of future hearing information.*** While the Daily Cause Lists provide a more user-friendly enquiry function (i.e. a search could be conducted by party name in addition to case number) than the e-hearing date enquiry services, the information provided is for hearings on the next working day only. Users who wish to enquire information about future hearings could only conduct a search via the e-hearing date enquiry services provided that the case number is known. In this connection, Audit notes that in some other jurisdictions (e.g. New Zealand and Singapore), a monthly or bi-weekly list of upcoming hearings is published in addition to the daily lists (Note 38);

Note 36: *In general, civil actions to be tried in the Court of First Instance and the District Court are assigned either to the Running List (for cases with an estimated length of trial of 3 days or less) or the Fixture List of the respective courts. For cases in the Fixture List, parties shall attend before the Listing Officer on a scheduled date for fixing the trial date.*

Note 37: *Two Warned Lists are published each for the Court of First Instance of the High Court as well as the District Court: one for the current week which is updated daily, and another for the next week which is updated weekly.*

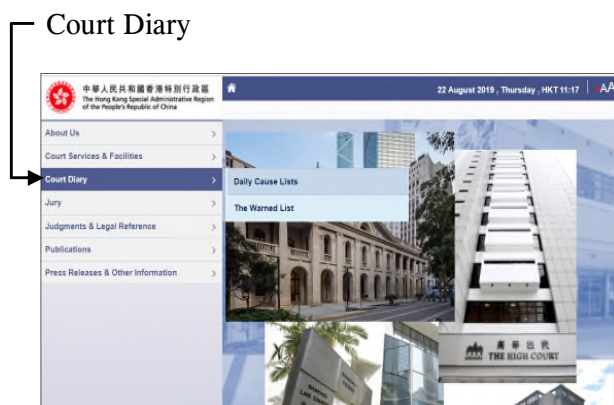
Note 38: *In the Courts of New Zealand's website, in addition to daily lists, the Court of Appeal and the Supreme Court publish a monthly list of upcoming hearings whereas the Supreme Court publishes all upcoming hearings. In Singapore, the websites of the Supreme Court and State Court publish bi-weekly lists of upcoming hearings.*

- (b) *Need to facilitate access of information on court hearings under same webpage.* While the types of information provided under the Daily Cause Lists and the e-hearing date enquiry services are basically the same, the two are placed under different headers on the Judiciary's website, i.e. the Daily Cause Lists are placed under "Court Diary" whereas the e-hearing date enquiry services are found in the "e-services" section under the header "Court Services & Facilities" (see Figures 2(a) and (b)). With reference to OGCIO's guidelines, contents of government webpages should be categorised in such a way that users can generally locate the required information with ease (see para. 4.4). The Judiciary Administration should consider making reference to the OGCIO's guidelines as there is merit in consolidating the two e-services, e.g. by placing them under the same header or showing the two sets of information on the same webpage;

Figures 2(a) and (b)

Locations for retrieving court hearings information on Judiciary's website

(a) Daily Cause Lists



(b) E-hearing date enquiry services



Source: Judiciary website as at 22 August 2019

- (c) *Need to facilitate multiple selection of Daily Cause Lists.* A total of 29 types of Daily Cause Lists (mainly by level and location of courts) can be viewed on the Judiciary's website. To view the hearing schedules in the Daily Cause Lists, a person needs to select the court (or court list) in which the hearing concerned is listed. The website, however, does not allow selection of multiple courts or court lists. Hence, a person may find it

difficult to obtain the information he needs if he does not know what level of court the case is heard or which court list the case belongs to; and

- (d) ***Pending Lists not available online.*** Unlike the Daily Cause Lists and the Warned Lists which can be found on the Judiciary's website, the Pending Lists (see para. 4.5(b)) can only be viewed at the notice boards at the High Court and the District Court. As shown in the Judiciary's website, it is the responsibility of the parties concerned to check the Pending Lists on the last day of each month to see whether their cases have been included. To provide information in a format that facilitates access by users of the information, the Judiciary Administration should consider the merits of publishing the Pending Lists on the Judiciary's website.

Need to improve provision of information on judgments and legal reference

4.7 ***Legal Reference System.*** The online Legal Reference System is the most visited webpage within the Judiciary's website, accounting for about 73% of the total number of visits. It contains information such as judgments of various levels of courts and the Judiciary's Practice Directions. The list of judgments is sorted by court level, case type and then by the year in which the case was filed. Two search functions, namely quick search (by case number or Neutral Citation Number) and advanced search (by up to four search parameters), are available for users to look up the judgments concerned.

4.8 ***Need to consider enhancing search functions of Legal Reference System.*** Audit visited websites providing similar information in Hong Kong (e.g. the website of the Hong Kong Legal Information Institute) and in other jurisdictions (e.g. the websites of Federal Court of Australia and Courts of New Zealand) and noted that their search functions were more user-friendly. In particular, they allowed more search parameters to be used in a conjunctive manner (up to 16 parameters as against four in the Judiciary's website) and longer date range for search by date of judgment (no limit as against one particular day in the Judiciary's website), and offered more options for sorting the list of judgments (e.g. sorting by case title and citation frequency).

4.9 ***Integration with iCMS.*** Audit noted that integration of the Legal Reference System with iCMS would be implemented in Stage 2 of the six-year action plan under Phase 1 of ITSP (see para. 1.7) which was expected to commence in early 2020. In view of the high usage rate of the online Legal Reference System, Audit considers that it is an opportune time (upon completion of most of the application modules of the Stage 1 court systems by end of 2019 — see Table 4 in para. 2.6(a)) for the Judiciary Administration to explore possible enhancements to the Legal Reference System by making reference to similar websites as appropriate with a view to facilitating retrieval of relevant information by the public.

Need to ensure accuracy of information uploaded onto the Judiciary's website

4.10 ***Inaccurate information on the Judiciary's website.*** With reference to OGCIO's guidelines, it is the responsibility of B/Ds to ensure that information uploaded onto the Internet is up-to-date (see para. 4.4). In conducting a review on the Judiciary's website as of August 2019, Audit noted a few discrepancies. For example, in the online Legal Reference System, a judgment which was handed down in 2019 was incorrectly recorded as handed down in 2016. As a result, the judgment could not be located using the search function by judgment date in the Legal Reference System. In another example, while it was stated in the Daily Cause Lists webpage that the information in the Daily Cause Lists would be updated by 6:30 p.m. daily (see para. 4.5(a)), it was incorrectly stated in the webpage of e-hearing date enquiry services that the update time of the Daily Cause Lists was by 6:00 p.m. Audit considers that the Judiciary Administration should refine its internal guidelines to remind its staff to ensure the accuracy and consistency of information before uploading onto the website. In the long run, the Judiciary Administration should explore ways to monitor the updating of information and regularly assess the overall effectiveness of the website with reference to OGCIO's guidelines (see para. 4.4).

Need to improve utilisation and user-friendliness of e-services

4.11 ***Low utilisation of online evaluation questionnaires on voluntary mediation.*** Apart from the dissemination of information on court hearings and legal reference, the Judiciary also provides a number of e-services through its website, such

as appointment services at the Labour Tribunal and the Probate Registry (Note 39), and submission of online evaluation questionnaires on voluntary mediation. In this connection, Audit noted that no online evaluation questionnaire on voluntary mediation (Note 40) had been submitted from 2014 to 2018. In light of the low utilisation, a review on the use of such online service to solicit users' views on the effectiveness of voluntary mediation might be warranted.

4.12 *Mobile-friendliness of some e-services.* With reference to OGCIO's guidelines, in view of a major trend for public users to access government websites through mobile devices (such as tablets and smartphones), it is imperative to implement a "mobile-friendly design" (Note 41) to provide a good user experience for website access by various electronic devices. While the Judiciary's website had undergone a revamp in October 2018 (see para. 4.3) to adopt a mobile-friendly design in general, Audit found that some e-services (e.g. evaluation questionnaires for voluntary mediation, appointment service of the Probate Registry and apostille verification service) had not been enhanced. There is a need to revamp the relevant e-services by adopting a mobile-friendly design to facilitate public access through mobile devices as soon as practicable.

Audit recommendations

4.13 *Audit has recommended that the Judiciary Administrator should:*

Note 39: *The Probate Registry of the High Court helps process applications for the issue of grant (a court order authorising one or more persons to administer the deceased's estate). The e-services of the Probate Registry allow applicants to book, enquire or cancel an appointment with the Probate Registry as well as to update their contact information.*

Note 40: *In accordance with the Judiciary's Practice Directions, for the purpose of evaluating the effectiveness of mediation for construction cases and cases involving disputes between shareholders, the parties or their representatives are requested to report to the relevant Clerk to the Judge the results of the use of mediation.*

Note 41: *Mobile-friendly design refers to website contents that are automatically adjusted to fit into different screen sizes, resolutions and orientation, so that users will be provided with optimal viewing and interaction experiences, enhanced readability and navigation of contents with best viewing effects. In particular, horizontal scrolling will not be required when viewing website contents, and size and spacing of contents (e.g. text, graphics) can also be automatically adjusted to fit into the screen for best viewing experience.*

Other related issues

- (a) **consider improving the dissemination of court hearing information through the Judiciary’s website, taking into account areas for improvement mentioned in paragraph 4.6;**
- (b) **explore possible enhancements to the online Legal Reference System by making reference to similar websites in Hong Kong and other jurisdictions as appropriate;**
- (c) **refine the internal guidelines to remind the Judiciary Administration’s staff to ensure the accuracy and consistency of information before uploading onto the Judiciary’s website;**
- (d) **consider ways to monitor the updating of information and regularly assess the overall effectiveness of the Judiciary’s website with reference to OGCIO’s guidelines;**
- (e) **consider the need to review the use of online evaluation questionnaires on voluntary mediation; and**
- (f) **enhance the e-services mentioned in paragraph 4.12 by adopting a “mobile-friendly design” to facilitate public access through mobile devices as soon as practicable.**

Response from the Judiciary

4.14 The Judiciary Administrator agrees with the audit recommendations. She has said that:

- (a) the Judiciary Administration will consider and explore practicable measures to enhance the user-friendliness in disseminating court hearing information through the Judiciary’s website, having regard to the intended purposes of the respective functions. If necessary, the Judiciary Administration will seek steer from the relevant committees and/or working groups chaired by JJOs;
- (b) the Judiciary Administration will explore possible enhancements to the online Legal Reference System;

- (c) to ensure the accuracy and consistency of information published through the Judiciary’s website, the Judiciary Administration will review and enhance the relevant internal guidelines for webpage owners as suggested by Audit in paragraph 4.13(c) and (d);
- (d) the Judiciary Administration will consult the relevant JJOs on the need to review the use of online evaluation questionnaires on voluntary mediation; and
- (e) the Judiciary Administration has planned to enhance the e-services mentioned in paragraph 4.12 by adopting a “mobile-friendly design” as soon as practicable.

Enhancement of audio-visual presentation equipment in courtrooms

4.15 *Courtroom audio-visual (A/V) presentation equipment.* Apart from IT systems which cover computers and their peripherals, various types of A/V equipment have been installed in courtrooms. According to the Judiciary Administration, there are ten major types of courtroom A/V systems (Note 42). As of January 2019, among others, there were audio-visual presentation systems (AVPS) installed in 102 (49%) of 208 courtrooms for the playback of evidence in different formats through computers and media players, and the broadcasting of electronic documents of the e-bundles (see para. 4.28) to the public during hearings.

4.16 *Implementation of courtroom technologies under ITSP.* Courtroom technologies would be implemented under ITSP to facilitate JJOs and clerks in accessing online case information in iCMS during hearings, and facilitate JJOs in viewing e-bundles and conducting simple trial-related actions. Video conferencing (where appropriate), projectors, and other visual equipment upgrades such as

Note 42: *The ten types of courtroom A/V systems are: (a) digital audio recording and transcription services system; (b) audio-visual presentation system; (c) public address and sound reinforcement; (d) induction loop system; (e) information display system; (f) courtroom extension and broadcasting system; (g) vulnerable witness system; (h) video conferencing system; (i) simultaneous interpretation system; and (j) real-time court reporting and transcription facilities.*

additional and larger monitors will also be included (Note 43). In the course of implementing ITSP, in June 2015, after consultation with external stakeholders, the Judiciary Administration came up with a checklist of service/facilities available in the court premises (the 2015 Checklist) which would be introduced in a progressive manner (Note 44). According to the consultation paper/2015 Checklist:

- (a) facilities for purposive use, such as multi-media presentations with A/V facilities and display facilities for electronic documents might be installed and fixed in some courtrooms whilst others might have the equipment-on-rack delivered to that courtroom for use when such need arises;
- (b) installation of such facilities should tie in with the fitting-out/renovation plans of the court premises to avoid causing disruption to the court proceedings; and
- (c) as some A/V facilities were installed some time ago, the Judiciary Administration would review the current settings of the A/V facilities inside courtrooms and replace the aged equipment to cope with the actual need by phases.

Need to expedite the replacement of outdated/obsolete A/V equipment

4.17 ***Review of courtroom A/V systems.*** In 2016, the Judiciary Administration conducted a review on the A/V systems in courtrooms of the Judiciary and found that:

Note 43: *According to the Judiciary Administration, the scale of upgrade of A/V facilities to be implemented under ITSP was rather limited, which included: (a) enabling the use of iCMS in courtrooms as far as IT infrastructure was concerned; (b) making ready the infrastructure to facilitate the provision of video conferencing support in court hearings; and (c) providing a certain number of fixed and mobile video conferencing equipment in the courtrooms.*

Note 44: *According to the Judiciary Administration, after a subsequent strategic and comprehensive review on courtroom technologies as a whole (see para. 4.17), more A/V facilities would be upgraded or made available. Thus, some facilities included in the 2015 Checklist would be implemented under ITSP and some outside ITSP.*

- (a) about 47% of AVPS had been installed for over 10 years with outdated/obsolete devices. For example, AVPS in 12 courtrooms of the District Court were equipped with small size monitors (ranging from 6.4 to 12 inches — see Photographs 1(a) and (b)) and connected through analog signal cables;

Photographs 1(a) and (b)

Small size monitors of an AVPS in the District Court

(a) Monitor on parties' bench



(b) Monitor for Judge



Source: Judiciary Administration records

- (b) the outdated/obsolete AVPS did not support signals inputted from notebook computers or portable equipment brought in by court users and their display resolution was far behind the current A/V technology. During court proceedings, relevant court exhibits might have to be reformatted or downgraded to lower resolution for display using the outdated/obsolete AVPS. In this connection, Audit noted that the Judiciary Administration had received complaints from JJOs and court users in 2015 and 2016 about the poor display quality of the A/V facilities which affected the viewing of some video footages as evidence during trials. There was a need to replace the outdated/obsolete AVPS in the courtrooms as far as practicable; and
- (c) opportunities should be sought to see whether fitting-out works for the courtrooms identified for replacement of outdated/obsolete A/V equipment could be carried out together with any upcoming projects with renovation requirements (e.g. fitting-out works for the implementation of iCMS in the District Court and the Summons Courts of the Magistrates' Courts) in one

go with a view to minimising disturbance to the court services and speeding up the enhancement process.

4.18 ***Outdated/obsolete AVPS not yet replaced.*** While the courtroom improvement works for the implementation of iCMS in the District Court and the Summons Courts of the Magistrates' Courts commenced in July 2016 and completed in December 2017, Audit found that opportunities had not been taken to replace all the outdated/obsolete AVPS in one go. For example, according to the Judiciary Administration's A/V equipment list as of March 2019, 11 of the 12 courtrooms of the District Court (see para. 4.17(a)) were still using outdated/obsolete AVPS. In June 2019, Audit conducted a site visit to one of the 11 courtrooms in the District Court and found that the outdated/obsolete AVPS had not been replaced.

Required display facilities not installed in the District Court

4.19 ***Required display facilities not installed.*** According to the 2015 Checklist, display facilities for electronic documents may be installed and fixed in some courtrooms (see para. 4.16(a)). According to the Judiciary Administration, the courtroom systems specifications for the respective level of court would be drawn up with reference to the 2015 Checklist in conjunction with the implementation of iCMS in that level of court. Audit examined the courtroom systems specifications prepared for the District Court and found that the following display facilities would be installed:

- (a) large display units for some courtrooms (namely the Plea Court and Masters' Courts); and
- (b) display units on the counsel's bench for viewing e-bundles.

Audit examination of the Judiciary Administration's A/V equipment list as of March 2019 however found that 16 (41%) of 39 courtrooms in the District Court were not equipped with AVPS. For the remaining 23 (59%) courtrooms, the outdated/obsolete AVPS in 11 courtrooms had not been replaced or enhanced (see para. 4.18) during the fitting-out works for the implementation of iCMS between 2016 and 2017. In short, the display facilities specified in (a) and (b) above were not installed/upgraded in 27 courtrooms. For the remaining 12 (i.e. 39 – 16 – 11) courtrooms, Audit noted that a projection screen was installed in each of the 12 courtrooms, but no display unit was installed on the counsel's bench in accordance with the courtroom systems specifications.

4.20 Upon enquiry on the issues in paragraphs 4.17 to 4.19, the Judiciary Administration in September 2019 informed Audit that:

- (a) in taking forward the replacement work mentioned in paragraph 4.17(c), the Judiciary Administration considered that:
 - (i) technically, simply replacing the display units alone might not be able to resolve the display quality issues encountered. As an ultimate solution, replacement/upgrading of the whole AVPS would be required in order to improve the overall A/V support in courtrooms (e.g. it would be necessary to switch the related A/V equipment from an analogue-based one to a digital-based one);
 - (ii) replacing/upgrading individual A/V systems might not be a viable approach in view of the fast technology advancement in consideration of the interoperability, compatibility and sustainability of the different A/V systems; and
 - (iii) a more holistic enhancement approach was essential to address the needs and requirements of the courtroom operations in the longer run;
- (b) in 2018-19, the Judiciary Administration conducted a more detailed technical review on the use of A/V and IT in the courts. According to the review:
 - (i) a new building level and courtroom level architecture for enabling future A/V and IT implementation and integration had been endorsed;
 - (ii) a list of projects had been identified, based on which revamping of the existing AVPS in the District Court had commenced. The Judiciary Administration was making necessary arrangements to take forward the other projects progressively; and
 - (iii) the outdated/obsolete AVPS in the District Court mentioned in paragraph 4.18 would be replaced progressively from 2020 to 2022; and

- (c) arising from the more comprehensive review of the A/V and IT facilities in courtrooms in recent years and the decision not to undertake replacement of outdated/obsolete A/V equipment in a piecemeal manner (see (a) and (b) above), the Judiciary Administration had acquired portable e-presentation systems (see para. 4.22) as an interim measure to meet the day-to-day operational needs of the District Court and Magistrates' Courts.

4.21 *Need to ensure enhanced/up-to-date A/V facilities are provided.* While noting the Judiciary Administration's efforts in recent years in improving the A/V facilities in courtrooms, as well as the decision not to replace outdated/obsolete A/V equipment in a piecemeal manner, in light of the common use of mobile phones as video recorders nowadays, it is anticipated that the presentation of video footages in courts will become more frequent. In Audit's view, the Judiciary Administration needs to take measures to ensure that enhanced/up-to-date AVPS and display facilities required for viewing e-bundles (see para. 4.28) are provided in courtrooms to support court proceedings (e.g. expediting the replacement of outdated/obsolete AVPS in the District Court and provision of more portable e-presentation systems, where appropriate).

Need to monitor utilisation of e-presentation systems

4.22 *E-presentation systems.* Audit noted that according to the 2016 review, in view of the unsatisfactory display quality of the outdated/obsolete AVPS (see para. 4.17(b)), the Judiciary Administration, as a short-term initiative, sourced a portable solution, i.e. to use notebook computers for displaying evidence in courtrooms (namely e-presentation systems — see Photograph 2). Given that the e-presentation systems provide better display quality, since December 2016, the Judiciary Administration has progressively acquired 20 sets of e-presentation systems as A/V presentation facilities in the courtrooms for shared use in the Magistrates' Courts, the District Court and the High Court.

Photograph 2

Use of e-presentation systems in a courtroom



Source: *Judiciary Administration records*

4.23 ***Actual utilisation not fully monitored.*** In January 2018, the Steering Committee was informed of the introduction of the e-presentation systems and that the usage of the e-presentation systems would be monitored. In response to Audit's request for the utilisation statistics, the Judiciary Administration provided Audit with the number of requests for technical support forwarded to the Information Technology Office for setting up the e-presentation systems in courtrooms as an indicator for utilisation. According to the Judiciary Administration, such figures were kept and were considered to largely represent the statistics relating to the use of the e-presentation systems as court support staff would normally request technical support from the Information Technology Office prior to the actual use of the e-presentation systems. In this connection, Audit noted that the number of occasions where court support staff set up the e-presentation systems without seeking technical support from the Information Technology Office was not recorded. In Audit's view, the Judiciary Administration needs to improve its existing mechanism for keeping utilisation records of the e-presentation systems and monitor their utilisation, with a view to collecting statistics for management review and future planning, and provision of such facilities for court use.

Audit recommendations

- 4.24 **Audit has *recommended* that the Judiciary Administrator should:**
- (a) **take measures to ensure that enhanced/up-to-date AVPS and required display facilities for viewing e-bundles are provided in courtrooms to support court proceedings; and**
 - (b) **improve the existing mechanism for keeping utilisation records of the e-presentation systems and monitor their utilisation, with a view to collecting statistics for management review and future planning and provision of such facilities for court use.**

Response from the Judiciary

4.25 The Judiciary Administrator agrees with the audit recommendations. She has said that:

- (a) the Judiciary Administration will continue to make available appropriate A/V and IT facilities in courtrooms to support court proceedings, having regard to the strategies adopted after the more comprehensive review of the A/V and IT facilities mentioned in paragraph 4.20(b); and
- (b) the Judiciary Administration is taking measures to improve the existing mechanism for keeping utilisation records of the e-presentation systems.

Promotion of the use of e-bundles

4.26 ***Use of paper bundles.*** As a legislative requirement, court users and parties to a litigation are required to submit case bundles (documents to be placed before the trial Judge) in paper form to the Judiciary. Hence, paper is predominantly being used in court operations.

4.27 ***Need to reduce the use of paper.*** In May 2017, a LegCo Member commented that as paper was predominantly used in various aspects of court procedures and litigation landscape, it was environmentally unfriendly given the large

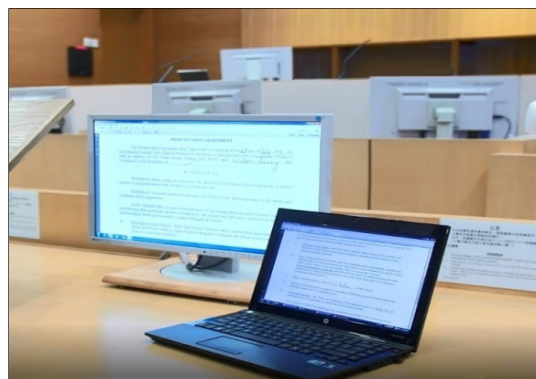
quantity of paper consumed annually and that there was a need for the Judiciary to reduce the use of paper. The Judiciary Administration responded in October 2018 that the use of e-bundles and the pilot scheme on e-submissions in the District Court (see para. 4.28) were among the Judiciary's various initiatives to reduce the use of paper.

Use of e-bundles

4.28 ***Electronic bundles in portable document format (EBPDF).*** To facilitate court proceedings, in 2011, the Judiciary made available the use of EBPDF at the High Court to replace the Electronic Bundle System (Note 45) where paper bundles were scanned into portable document format for uploading to IT devices for JJOs and counsels to view and make notes during pre-hearing readings and court hearings, and to conduct hearings with the use of EBPDF (see Photograph 3 for an illustration). Since 2016, as part of a pilot scheme in the District Court, users of the District Court have been able to submit hearing bundles via an e-submission platform (see para. 4.27). In 2017, a revised Practice Direction on the procedures of handling civil appeals at the Court of Appeal of the High Court was issued, requiring legally represented parties to submit an electronic copy of bundles on top of the hard copy, unless the court orders otherwise.

Photograph 3

Demonstration on the use of EBPDF



Source: Judiciary Administration records

Note 45: *The Electronic Bundle System had been used in the High Court since 2006 as a document retrieval system, enabling storing and indexing of large volume of documents, and retrieving and displaying of the bundle documents on multiple computer monitors and projector screens during the course of trial. Owing to various reasons (e.g. the Electronic Bundle System was designed for complex trial cases), the use of the system was infrequent (i.e. only 4 cases from 2006 to 2011).*

Other related issues

4.29 ***Benefits of using EBPfD.*** According to the Judiciary Administration, the use of EBPfD is anticipated to bring about benefits to ensure economical and efficient disposal of cases, including:

- (a) reduction in the use of court time for retrieval and referral of bundle documents; and
- (b) ensuring environmental friendliness and achieving savings in legal and administrative costs for producing copies of paper bundle documents.

Need to expedite legislative amendments and consider promoting wider use of EBPfD

4.30 ***Use of e-bundles in other jurisdictions.*** In 2015, the Judiciary Administration conducted a research and found that a number of jurisdictions had adopted e-bundles in hearings (see Table 11). As shown by the research result, the use of e-bundles has become mandatory in a number of jurisdictions.

Table 11

Use of e-bundles in other jurisdictions (2015)

Jurisdiction	Use of e-bundles
Singapore	E-bundles are mandatory in the Supreme Court.
United Kingdom	For appeals in the Supreme Court, parties are required to file e-bundles in addition to filing hard copies.
United States	Most Federal Courts require legal profession to file documents electronically unless counsel is granted an exemption.
New Zealand	Parties are encouraged to use e-bundles.

Source: Audit analysis of Judiciary Administration records

4.31 **Low usage of EBPDF.** Despite that the use of EBPDF has been made available for more than eight years, Audit found that the utilisation of EBPDF in the High Court and the District Court remained very low (see Table 12).

Table 12

**Utilisation of EBPDF in the High Court and the District Court
(2011 to 2018)**

Year	High Court			District Court		
	No. of cases filed (Note 1)	No. of cases using EBPDF		No. of cases filed (Note 1)	No. of cases using EBPDF	
		Pre-hearing reading	Hearing		Pre-hearing reading	Hearing
2011	34,611	1	—	46,779	Not applicable (Note 2)	
2012	35,835	16	—	45,728		
2013	37,980	8	1	45,218		
2014	39,674	43	1	44,134		
2015	41,415	17	—	43,298		
2016	40,085	12	—	45,414	2	—
2017	40,861	1	—	45,340	3	—
2018	42,837	85	2	45,986	4	—

Source: Judiciary Administration records

Note 1: According to the Judiciary Administration, only a small percentage of cases filed to the court will eventually reach the stage of hearings.

Note 2: Use of EBPDF in the District Court started in 2016 (see para. 4.28).

4.32 Upon enquiry, the Judiciary Administration in September 2019 informed Audit that:

Other related issues

- (a) the adoption of the use of e-bundles at hearings had been voluntary. Whether a JJO considered it appropriate to use e-bundles for a particular case depended on a wide range of factors, including the volume of papers involved, complexity of cases, readiness of the parties, and the related costs and benefits for the court and parties concerned;
- (b) given the existing legal restrictions, parties submitting e-bundles were also required to submit the paper bundles to the court. Hence, the adoption of e-bundles might incur additional costs, time and efforts both on the court and the parties concerned. Such hindrance would be removed after the enactment of the legislative amendments, when it would generally be more cost-effective to use e-bundles. However, since the use of e-bundles might be more suitable for certain types of cases, it was expected that the actual adoption of e-bundles at court hearings would still depend on the various factors mentioned above; and
- (c) the Judiciary Administration recently considered that upon the enactment of the legislative amendments and with the likely synergy between e-filing and the use of e-bundles, it might be an opportune time for the Judiciary to consider promoting the wider use of EBPDP in the coming few years. In particular, the Judiciary might first accumulate more experience in the actual use of EBPDP and consider whether and, if so, how best to encourage greater use of EBPDP at various court levels having regard to all relevant factors such as the overall priorities and possible resource constraints of the Judiciary.

4.33 ***Interim and long-term actions for promoting the wider use of EBPDP.*** In Audit's view, for improving operational efficiency and achieving environmental friendliness, there is merit in encouraging wider use of EBPDP at all levels of courts in the long run. In the interim, the Judiciary Administration needs to expedite actions to complete the legislative amendments to remove the existing legal restrictions on paper bundles (see para. 4.32(b)). The Judiciary Administration also needs to consider the best ways to accumulate the necessary experience (e.g. encouraging early switch from paper bundles to EBPDP in certain court levels by those legal practitioners and prosecuting departments and agencies which may be more willing and ready to use EBPDP). The Judiciary Administration should then, in consultation with the relevant external stakeholders (such as the legal professional bodies), consider whether and, if so, how best to promote the wider use of EBPDP at various court levels.

Audit recommendations

- 4.34 **Audit has *recommended* that the Judiciary Administrator should:**
- (a) **expedite actions to complete the legislative amendments for using the electronic mode of handling court-related documents and consider the best ways to accumulate the necessary experience in the use of EBPDF; and**
 - (b) **in consultation with the relevant external stakeholders (such as the legal professional bodies), consider whether and, if so, how best to promote the wider use of EBPDF at various court levels in the long run.**

Response from the Judiciary

- 4.35 The Judiciary Administrator agrees with the audit recommendations. She has said that:
- (a) the relevant legislative amendments needed to enable the submission of electronic bundles without the need for hard copy have been incorporated into the legislative amendment exercise stated in paragraph 1.14. Subject to the legislative process, the Judiciary hopes to bring the amendments into effect by end 2020; and
 - (b) the Judiciary Administration will engage the relevant stakeholders at suitable junctures on the promotion of the wider use of EBPDF in the longer run.

**Courts and tribunals in Hong Kong
(30 June 2019)**

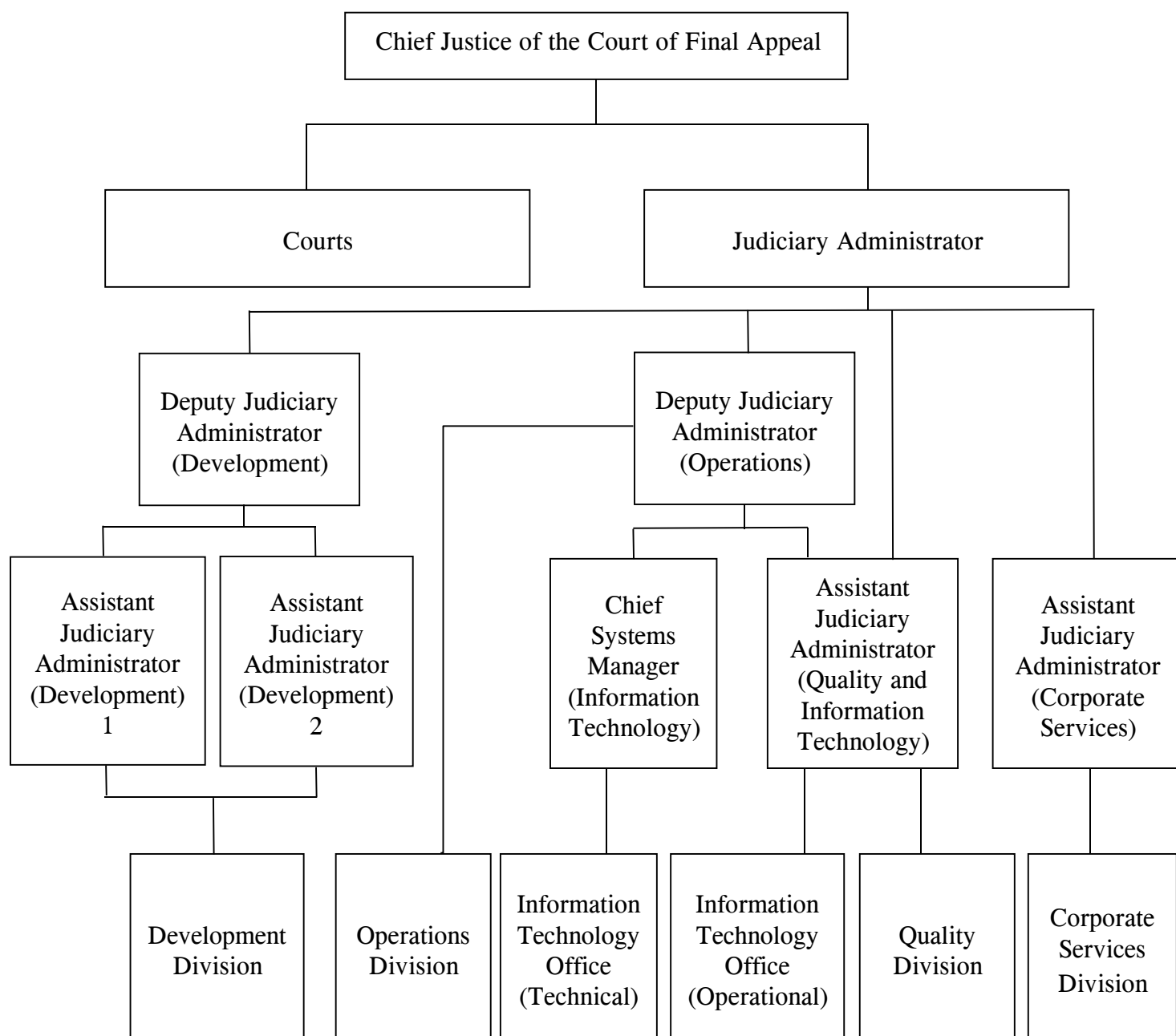
Court/tribunal	Jurisdiction
Court of Final Appeal	It is the highest appellate court in Hong Kong. It hears appeals on civil and criminal matters from the Court of Appeal and the Court of First Instance of the High Court.
Court of Appeal of the High Court	It hears appeals on civil and criminal matters from the Court of First Instance of the High Court and the District Court, as well as appeals from the Competition Tribunal and the Lands Tribunal.
Court of First Instance of the High Court	It has unlimited jurisdiction in both civil and criminal matters. It also hears appeals from the Magistrates' Courts and the Labour Tribunal, the Small Claims Tribunal and the Obscene Articles Tribunal.
Competition Tribunal	It has primary jurisdiction to hear and adjudicate competition-related cases.
District Court	It has civil jurisdiction to hear monetary claims of over \$75,000 up to \$3 million or, where the claims are for recovery of land, the annual rent or rateable value does not exceed \$320,000. In its criminal jurisdiction, it may hear more serious offences, except murder, manslaughter and rape. The maximum term of imprisonment that it may impose is seven years.
Family Court	It hears applications pertaining to divorce and separation as well as other related family and/or matrimonial matters.
Lands Tribunal	It deals with rating, valuation and tenancy disputes, and cases relating to building management and compensations for land resumption.
Magistrates' Courts	They exercise criminal jurisdiction over a wide range of offences, and are empowered to impose sentences up to three years' imprisonment and fines of up to \$5 million.
Juvenile Court	It has jurisdiction to hear charges against children (aged under 14) and young persons (aged between 14 and 16) for any offence other than homicide. It also deals with care and protection cases involving young people up to the age of 18.

Appendix A
(Cont'd)
(para. 1.2 refers)

Court/tribunal	Jurisdiction
Coroner's Court	It investigates sudden, unnatural or suspicious deaths occurring in Hong Kong. It holds inquests into deaths if necessary.
Labour Tribunal	It deals with claims arising from a breach of a contract of employment and the relevant provisions of the Employment Ordinance (Cap. 57), Minimum Wage Ordinance (Cap. 608) or the Apprenticeship Ordinance (Cap. 47). Hearings are informal and legal representation is not allowed.
Small Claims Tribunal	It deals with monetary claims arising from contract or tort, involving amounts not exceeding \$75,000. Legal representation is not allowed.
Obscene Articles Tribunal	It is responsible for the classification of articles and has exclusive jurisdiction to determine the question of obscenity or indecency when this issue arises in any civil or criminal proceedings in any court.

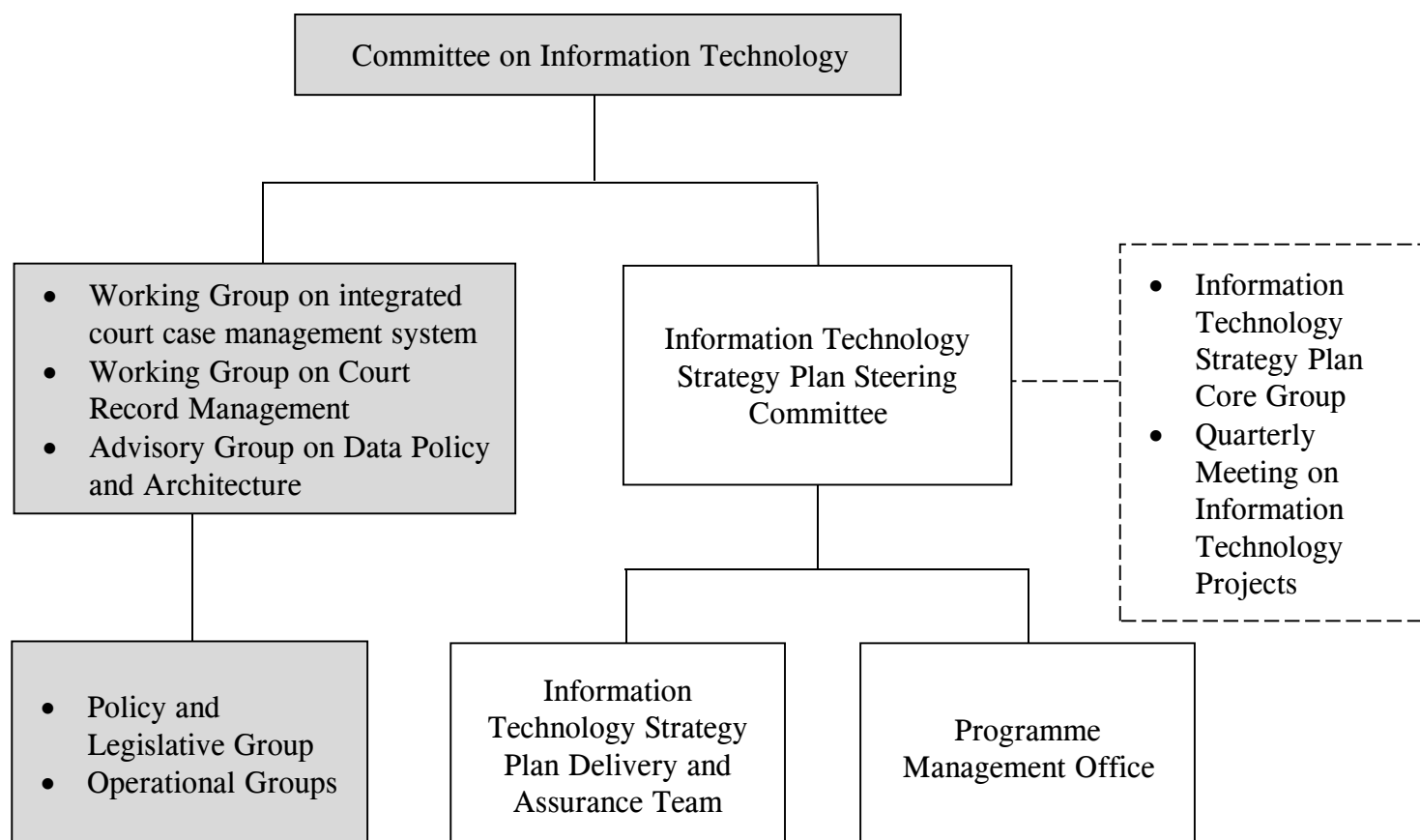
Source: Judiciary Administration records

**Judiciary:
Organisation chart (extract)
(30 June 2019)**



Source: Judiciary Administration records

**Governance structure for implementation
of Information Technology Strategy Plan
(30 June 2019)**



Legend: Group led by judges and judicial officers
 Group led by the Judiciary Administrator
 Internal monitoring mechanism established under the Judiciary Administration

Source: *Judiciary Administration records*

Acronyms and abbreviations

Audit	Audit Commission
A/V	Audio-visual
AVPS	Audio-visual presentation systems
B/Ds	Bureaux and departments
CASEMAN	Case and Summons Management System
CIT	Committee on Information Technology
DoJ	Department of Justice
EBPDF	Electronic bundles in portable document format
FC	Finance Committee
iCMS	Integrated court case management system
ISSS	Information System Strategy Study
IT	Information technology
ITSP	Information Technology Strategy Plan
JJOs	Judges and judicial officers
LegCo	Legislative Council
NCSC	Non-Civil Service Contract
OGCIO	Office of the Government Chief Information Officer
PMP	Programme Management Plan
SA&D	System analysis and design
UAT	User acceptance test

CHAPTER 7

Financial Services and the Treasury Bureau Census and Statistics Department

**Statistical services provided by
the Census and Statistics Department**

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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STATISTICAL SERVICES PROVIDED BY THE CENSUS AND STATISTICS DEPARTMENT

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.17
Audit review	1.18
General response from the Government	1.19 – 1.20
Acknowledgement	1.21
PART 2: STATISTICAL SURVEYS	2.1
General Household Survey	2.2 – 2.16
Audit recommendations	2.17
Response from the Government	2.18
Sub-divided Unit Survey	2.19 – 2.35
Audit recommendations	2.36
Response from the Government	2.37
Monthly Retail Price Survey	2.38 – 2.44
Audit recommendations	2.45
Response from the Government	2.46

	Paragraph
Implementation of a department-wide computerised time-log system	2.47 – 2.49
Audit recommendations	2.50
Response from the Government	2.51
 PART 3: POPULATION CENSUSES AND BY-CENSUSES	 3.1
Control of salary payments to temporary field workers	3.2 – 3.5
Audit recommendations	3.6
Response from the Government	3.7
Provision of office accommodation and disposal of furniture	3.8 – 3.15
Audit recommendations	3.16
Response from the Government	3.17 – 3.18
Use of mobile tablets and power banks	3.19 – 3.27
Audit recommendations	3.28
Response from the Government	3.29
 PART 4: IMPLEMENTATION OF INFORMATION SYSTEMS STRATEGY	 4.1 – 4.2
Implementation of 2004 Information Systems Strategy	4.3 – 4.12
Audit recommendations	4.13
Response from the Government	4.14

Appendices	Page
A : Census and Statistics Department: Organisation chart (1 April 2019)	75
B : Recommendations of consultant’s comprehensive review of fieldwork management system (May 2014)	76 – 77
C : Findings of Audit’s sample check of salary payments to temporary field workers (2016 By-census) (2017)	78 – 79
D : List of 16 IT projects recommended by 2004 Information Systems Strategy	80 – 81
E : Acronyms and abbreviations	82 – 83

STATISTICAL SERVICES PROVIDED BY THE CENSUS AND STATISTICS DEPARTMENT

Executive Summary

1. Government statistical services are provided by the Census and Statistics Department (C&SD) and the statistical units established in various government bureaux and departments. Under the Census and Statistics Ordinance (Cap. 316), C&SD conducts statistical surveys which provide an important basis for the formulation of government policies. The surveys are either mandatory (e.g. population census conducted every ten years and by-census conducted in the middle of intercensal period) or voluntary (e.g. General Household Survey (GHS) conducted on a monthly basis and Household Expenditure Survey (HES) conducted every five years). In carrying out its activities, C&SD follows international standards and practices, such as the Special Data Dissemination Standard of the International Monetary Fund (IMF). In 2018-19, the total expenditure of C&SD was \$666 million. The Audit Commission (Audit) has recently conducted a review to examine the statistical services provided by C&SD.

Statistical surveys

General Household Survey

2. GHS is one of the household surveys relating to the demographic and socio-economic characteristics of the population. To have more precise estimation of changes over time, half of the sampled households in each month will be sampled again three months later. The first round of enumeration is conducted by means of online questionnaire or field visit, while the second one could be conducted by online questionnaire, telephone interview or field visit, subject to the respondent's preference. C&SD conducts in-depth quality checks (QCs), which comprise two stages of independent checking, to ensure the quality of GHS data collection process. In Stage 1, cases are selected by field pool supervisors according to a purely random mechanism. In Stage 2, cases are selected by GHS Central Field Team based on a target-based mechanism. The errors identified in the in-depth QCs of GHS questionnaires are classified into "major errors" and "minor errors". "Major errors"

Executive Summary

are related to misclassification of economic activity status of respondents and “minor errors” are errors identified in other parts of the questionnaires which have no or minimal impact on the labour force statistics (paras. 1.7(b), 2.5 and 2.6). Audit examination has revealed the following issues:

- (a) ***Small number of error cases identified by field pool supervisors and the majority of error cases identified were “minor error cases”.*** The in-depth QCs conducted on enumerated cases from April 2018 to March 2019 covered 11,606 GHS questionnaires. Of the 899 error cases found: (i) only 48 were identified by the field pool supervisors with an error rate of 0.8% while 851 were found by GHS Central Field Team with an error rate of 15.23%; and (ii) the bulk of the error cases were “minor error cases”. The overall “major error” rate was 0.54%, and the overall “minor error” rate was 7.2%. Of the 836 “minor error cases” found, only 43 (5%) were identified by field pool supervisors while 793 (95%) were found by GHS Central Field Team (para. 2.8(a) and (b));
- (b) ***Inadequate follow-up of non-contact cases due to wrong/no telephone numbers.*** QC checkers are required to attempt to call respondents at least three times (including one night-call between 6:30 pm and 10 pm) for any in-depth QC cases to be regarded as non-contact cases. In Stage 1 in-depth QCs, another case will be selected for checking if a case sampled for in-depth QCs is found to have a wrong/no telephone number. These wrong/no telephone number cases are then not checked in Stage 1 in-depth QCs. While such cases are subject to selection for checking in Stage 2 in-depth QCs, only a certain number of them identified in Stage 2 in-depth QCs will be selected for follow-up actions by GHS Central Field Team by field visits. As cases involving wrong/no telephone numbers pose a higher risk of falsification, C&SD needs to step up actions in following up these cases (paras. 2.8(c) and 2.9); and
- (c) ***Monitoring of Assistant Census and Survey Officers (ACSOs) involved in GHS work.*** C&SD maintained a Monitoring List to identify ACSOs involved in GHS work with completion rates consistently lower than the benchmark by more than 5 percentage points for over six months during the past twelve months. These ACSOs were required to be closely monitored and coached by their supervisors case by case. Audit noted that in April 2019, there were five ACSOs on the Monitoring List covering the period from January to December 2018 but apart from records on

Executive Summary

supervisory field visits made, there was no other documentation on the monitoring and coaching given to them (paras. 2.12 and 2.13).

Sub-divided Unit Survey

3. At the request of the Transport and Housing Bureau, C&SD conducted a Thematic Household Survey (THS) on sub-divided units (SDUs) from June to November 2014 (first THS on SDUs). According to C&SD, the major objective of THS on SDUs in 2014 was to estimate the total number of SDUs in private domestic/composite buildings (excluding village houses) aged 25 or above in Hong Kong. The estimated number of SDUs identified in the survey was 86,400. The second THS on SDUs in private domestic/composite buildings (excluding village houses) aged 25 or above in Hong Kong was conducted from May to September 2015. The results showed that the estimated number of SDUs was 88,800. The long-term housing demand from households living in SDUs was projected based on the relevant results of the second THS on SDUs for the annual update of the Long Term Housing Strategy in 2015. In the 2016 By-census (16BC — see para. 6), a new data topic on SDU was included. In January 2018, C&SD published the report entitled “Thematic Report: Persons Living in Sub-divided Units” (16BC Thematic Report on SDUs). According to the report, there were some 27,100 quarters with SDUs in Hong Kong and the total number of SDUs in these quarters was estimated to be 92,656 (paras. 2.19 to 2.21 and 2.26). Audit examination has revealed the following areas for improvement:

- (a) ***Need to closely monitor the progress of the Frame of Quarters (FoQ) updating exercise on SDUs.*** FoQ refers to a database (containing a list of addresses in land areas to be sampled) maintained by C&SD. C&SD conducted a special frame updating exercise to identify quarters with SDUs in FoQ before 16BC to help devise an appropriate sample design for enumerating SDUs and facilitate the effective allocation of fieldwork assignments of 16BC. According to C&SD, a complete FoQ (i.e. covering all quarters in Hong Kong) was necessary to ensure full coverage of the target population to be sampled. Audit noted that, as of March 2019, there were only about 46,500 (i.e. about 50% of the 92,656 SDUs reported in the 16BC Thematic Report on SDUs) known SDUs recorded in FoQ. As an FoQ updating exercise on SDUs, C&SD has planned to visit all private residential buildings aged 40 years or more in built-up areas (covering 22,000 buildings and 410,000 quarters) before the conduct of 2021 Population Census (21C). Given the substantial amount of work (i.e.

Executive Summary

visiting 22,000 buildings and 410,000 quarters), C&SD needs to closely monitor the progress of the FoQ updating exercise on SDUs and take appropriate actions to bring the SDU data in the sampling frame up-to-date to facilitate sample selection in the coming 21C (paras. 2.22, 2.26, 2.27 and 2.32); and

- (b) *Need to take measures to improve the success rate of SDU enumeration.* According to C&SD, of the 299,300 sampled quarters in 16BC, 5,440 SDUs were identified through successful enumeration. Of the 92,656 estimated number of SDUs reported in the 16BC Thematic Report on SDUs, only 50,623 (54.6%) were derived from successfully-enumerated cases (i.e. the 5,440 cases). For the remaining 42,033 (45.4% of 92,656) SDUs, 12,849 (13.9% of 92,656) were based on imputation by macro-editing using auxiliary data of 16BC or other sources, and 29,184 (31.5% of 92,656) were based on imputation using SDU data in FoQ directly. While successfully-enumerated SDU cases could provide the most reliable and up-to-date data for estimating the number of SDUs, Audit noted that there was a heavy reliance on imputation on estimating the SDU figures in 16BC because of the relatively low success rate of SDU enumeration. In Audit's view, paying more visits to non-contact quarters suspected to be SDUs as observed in field visits during the enumeration period, preferably by a variety of means on different dates and at different times, should improve the success rate of SDU enumeration. Given the short data collection period (about 5 weeks), to collect more reliable and up-to-date data on SDUs, C&SD needs to take measures to improve the success rate of SDU enumeration under population censuses/by-censuses as far as practicable (paras. 2.33 and 2.35).

Monthly Retail Price Survey

4. The main purpose of conducting the Monthly Retail Price Survey is to regularly collect price data and related information of a fixed basket of consumer goods and services commonly purchased by general households from local retail outlets (e.g. market stalls) and service providers (e.g. tour companies) for the compilation of the Consumer Price Index (CPI). According to C&SD, compilation of CPI in Hong Kong follows closely the international standards. Hong Kong's CPI is a base-weighted type of price index compiled to reflect changes in the price level of consumer goods and services generally purchased by households. Changes in CPI are widely used as an indicator of the inflation or deflation affecting consumers. The

Executive Summary

Government also uses CPI as an indicator or analytical tool to formulate and monitor its policies (paras. 2.38 and 2.39).

5. ***Compilation of CPI.*** CPI shows the relative change over time in the overall cost of a specified and fixed (in terms of quality and quantity) basket of consumer goods and services, therefore reflecting pure price change. The consumer goods and services covered in CPI basket (CPI items) are based on the expenditure patterns of households on different CPI items purchased through different types of retail outlets in the base period, which form the expenditure weights for compiling the index series. The expenditure weights are updated every five years with reference to the latest expenditure patterns of households primarily obtained through HES. A new series of CPI will be compiled based on the updated expenditure weights, with historical figures retrospectively computed to maintain comparability of the index series. This process is called CPI rebasing (para. 2.40). Audit examination has revealed the following issues:

- (a) ***Need to continue to keep in view the latest international developments in the CPI compilation standards.*** At present, price quotations are collected from local stores/online retailers but not from non-domestic stores/online retailers. According to C&SD, IMF issued a consultation draft in July 2018 which suggested, among others, the inclusion of expenditures made on goods and services purchased via the Internet from Internet-based outlets based/registered abroad as a “special consideration” in compiling CPI for the local economy. To prepare for the possible changes in the next CPI rebasing cycle, C&SD has already enhanced the questionnaires for the current round of HES being conducted in 2019/20 to collect more comprehensive information on online purchases from the households. With the growing popularity of online purchases from Internet-based outlets, C&SD needs to continue to keep in view the latest international developments on whether to include online purchases from non-domestic retailers in CPI compilation (paras. 2.41 and 2.42); and
- (b) ***Need to continue to take into account changes in expenditure patterns in next CPI rebasing exercise.*** According to C&SD, individual retail outlets and service providers are selected for collecting price quotations having regard to the popularity of the outlets (e.g. whether the location is in main streets/shopping arcades and frequently patronised by many consumers). Audit noted that there had been changes in mode of purchases since the last CPI rebasing exercise in 2014/15. In particular, more purchases were made

Executive Summary

online in addition to retail shops and in recent years, there were also new physical stores operated by local online retailers. Besides, among the 984 CPI items in the prevailing CPI basket, eight CPI items might have become unpopular as of June 2019 (i.e. with over 60% of the price quotations without updated price data in the past 12 months). In this connection, C&SD needs to continue with the existing CPI rebasing mechanism to take into account the changes in expenditure patterns and popularity of goods and services in the upcoming 2019/20 CPI rebasing exercise (paras. 2.43 and 2.44).

Population censuses and by-censuses

6. Population censuses have been conducted in Hong Kong at 10-year intervals since 1961, with by-censuses being carried out in the middle of the intercensal period. The aims of conducting population censuses and by-censuses are to obtain up-to-date benchmark information on the socio-economic characteristics of the population and on its geographical distribution. They provide benchmark data for studying the direction and trend of population changes, which are key inputs for making projections concerning population, household and labour force. Population censuses involve a complete headcount of the population, while by-censuses enquire about the detailed characteristics of the population on the basis of a large sample. The last by-census was conducted in 2016 (i.e. 16BC) and the next population census will be conducted in 2021 (i.e. 21C) (para. 1.12). Audit examination of the conduct of 16BC has revealed the following areas for improvement:

- (a) ***Need to strengthen control over salary payments to temporary field workers (TFWs).*** In 2017, during the audit of the financial statements of the Government's General Revenue Account for the year ended 31 March 2017, Audit sample checked the largest single payment of 16BC (i.e. \$74 million of salary payments to TFWs) and found that there were some inaccurate payments, missing supporting documents, improper certification on summary records for payments and mis-classification of expenses, which were not in compliance with the relevant government regulations (i.e. Standing Accounting Instructions and Financial and Accounting Regulations) and C&SD's payment procedures. In light of the inadequacies identified in 2017, in August 2019, Audit conducted an extended checking of the same salary payments and found that of the 1,442 attendance records verified and certified, 884 (involving 4,730 TFWs) or 61% were verified and/or certified before the end of the

Executive Summary

wage period, verified/certified without dates, or without sign-off to prove proper verification/certification. C&SD needs to strengthen its control over salary payments to TFWs for implementation in 21C (paras. 3.2, 3.3 and 3.5);

- (b) ***Need to continue exploring feasibility of developing a joint-user specialist and departmental building (SDB).*** Owing to the temporary and periodic nature of office accommodation for previous population censuses/by-censuses, there was a need to carry out fitting out/reinstatement works and procure furniture and equipment for every population census/by-census. In Chapter 8 of the Director of Audit's Report No. 69 entitled "Provision of government office accommodation and utilisation of government sites" issued in October 2017, Audit recommended that the Registration and Electoral Office (REO) and C&SD, in consultation with the Government Property Agency (GPA), should explore the feasibility of developing a joint-user SDB to meet their periodic accommodation requirements. In the Government Minute in response to the Report of the Public Accounts Committee No. 71 of February 2019, it was reported that REO and C&SD had taken positive steps to follow up the recommendation. C&SD needs to, in consultation with GPA, continue liaising with REO with a view to exploring the feasibility of developing a joint-user SDB to cater for the periodic accommodation requirements of REO and C&SD (paras. 3.11 and 3.13);
- (c) ***Need to improve furniture disposal process after completion of population census/by-census.*** Upon closure of the offices and field centres in 16BC, there was surplus furniture requiring disposal. Such surplus furniture was disposed of through auctions organised by the Government Logistics Department (GLD). In April 2018, C&SD staff found that the successful bidder had posted photographs showing the furniture with logo and name of C&SD onto the Internet to invite buyers. As GLD's prior approval had not been obtained, the arrangement was in breach of GLD's Terms and Conditions of sales. Subsequently, the successful bidder re-sold the concerned furniture items and arranged for picking-up inside government premises. To prevent recurrence of similar incidents, C&SD needs to be vigilant in ensuring that its furniture disposal process after completion of a population census/by-census is properly carried out (paras. 3.14 and 3.15); and

Executive Summary

- (d) ***Need to ensure proper implementation of security measures in 21C.*** For 16BC, C&SD procured mobile tablets to facilitate TFWs to collect information during their face-to-face interviews with selected households. Audit noted that there were two incidents of loss of mobile tablets during the 16BC face-to-face interview period and remote data wiping could not be effected on one of the two tablets. C&SD considered that there was a very low risk of data leakage because the data had been encrypted in the tablet and various data protection measures were in place. While C&SD has in its latest plan considered putting in place additional measures in 21C, to prevent recurrence of incidents of loss of mobile tablets, C&SD needs to ensure proper implementation of the additional security measures planned for 21C (paras. 3.19 to 3.22).

Implementation of information systems strategy

7. In order to make effective use of information technology (IT) in statistical services, in May 2003, C&SD commenced an information systems strategy (ISS) study to formulate an ISS plan for implementation in five years from 2004 to 2009. The study proposed a strategic IT programme of implementing 16 IT projects at a total estimated cost of \$106.1 million to bring about significant benefits and transformation in the operation/service approach to C&SD, survey respondents and statistics users. After assessing the benefits and resources available, C&SD selected 9 priority projects which were scheduled for commencement from April 2005 to September 2007 and planned to be completed fully or partially from December 2005 to December 2008 (paras. 4.3 and 4.4). Audit examination has revealed the following issues:

- (a) ***Long time taken in implementing two departmental data capturing projects.*** Audit noted that of the 9 priority projects, 7 projects had taken more time for implementation/completion as compared with the planned implementation dates (delays ranging from 1 to 7.8 years, averaging 2.6 years). In particular, C&SD's departmental data capturing system, namely Project T7 (i.e. the departmental Computer-Assisted Telephone Interview (CATI) System), took the longest time for completion (i.e. 7.8 years after the planned completion date). Audit examination found that: (i) in implementing CATI System, while a request for inviting tenders was sent to GLD in May 2008, it took more than two years to commence inviting tenders in September 2010. According to C&SD and GLD, the long time taken was attributed to the need to review and revise the user

Executive Summary

requirements and tender documents to include additional functions on audio recording and voice logging; (ii) the tender for Project T7 was cancelled in 2011 and a price negotiation was conducted with the tenderer in 2013 during the re-tender exercise; and (iii) since C&SD intended to implement Projects T6 (i.e. the departmental data capturing system using imaging technology (subsequently replaced by the Online Questionnaire System in 2012)) and T7 concurrently, Project T6 had been put on hold until Project T7 was ready to be put to tender (paras. 4.6 and 4.9); and

- (b) ***Need to enhance system integration for Projects T6 and T7.*** According to the 2019 ISS Report, the two systems under Projects T6 and T7 (i.e. Online Questionnaire System and CATI System), which were intended to be applied together to collect data for some statistical surveys, did not allow real-time data integration and whenever there was a change in the questionnaire design, the changes had to be made to the supporting system for each data collection mode separately. To streamline the workflow and reduce duplicate efforts, C&SD needs to take measures to enhance the integration between the two departmental data collection systems, taking into consideration technical feasibility and business needs (para. 4.10).

8. ***Deficiencies of End-User Computing (EUC) systems/applications.*** Other than departmental systems, individual sections of C&SD had developed over 80 EUC systems/applications to manage and store raw data and statistics collected by different surveys (para. 4.11). Audit examination has revealed the following deficiencies in the EUC systems/applications:

- (a) ***Lack of common data standards across EUC systems/applications.*** As each C&SD branch/section had its own way of managing and storing data, the format and definitions of same data elements varied across EUC systems/applications. To standardise the practices of managing and storing data across EUC systems/applications, C&SD needs to establish a common data model (para. 4.11(a)); and
- (b) ***Slow progress in migrating EUC systems/applications running on an obsolete programming language.*** As of August 2019, 37 EUC systems/applications developed in 2007 or before were running on an obsolete programming language, which had already reached its end-of-support since January 2015. While C&SD had taken actions to migrate its EUC systems/applications from the obsolete programming

Executive Summary

language to other updated programming languages since April 2008, as at the end of August 2019, the migration of 31 EUC systems/applications was still outstanding. C&SD needs to formulate a strategy to complete the migration of these EUC systems/applications in a more timely manner (para. 4.11(b)).

Audit recommendations

9. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Commissioner for Census and Statistics should:**

Statistical surveys

- (a) **take measures to improve in-depth QCs of GHS and keep proper documentation on the monitoring and coaching of ACSOs on the Monitoring List (para. 2.17(a) and (b));**
- (b) **take appropriate actions to bring the SDU data in the sampling frame (i.e. FoQ) up-to-date to facilitate sample selection in the coming 21C and improve the success rate of SDU enumeration under population censuses/by-censuses as far as practicable (para. 2.36(a) and (b));**
- (c) **continue to keep in view the latest international developments on whether to include online purchases from non-domestic retailers in CPI compilation and continue with the existing CPI rebasing mechanism to take into account the changes in expenditure patterns and popularity of goods and services in the upcoming 2019/20 CPI rebasing exercise (para. 2.45(a) and (b));**

Population censuses and by-censuses

- (d) **strengthen the control over salary payments to TFWs for implementation in 21C (para. 3.6(a));**
- (e) **in consultation with GPA, continue to liaise with REO with a view to exploring the feasibility of developing a joint-user SDB to cater for the**

Executive Summary

periodic accommodation requirements of REO and C&SD (para. 3.16(a));

- (f) be vigilant in ensuring that the furniture disposal process after completion of a population census/by-census is properly carried out (para. 3.16(b));**
- (g) ensure proper implementation of the additional security measures planned for 21C to protect personal data stored in the mobile tablets (para. 3.28(a));**

Implementation of information systems strategy

- (h) in implementing future IT projects, ascertain the user requirements before seeking funding approval as far as practicable (para. 4.13(a));**
- (i) take measures to enhance the integration between CATI System and the Online Questionnaire System, taking into consideration technical feasibility and business needs (para. 4.13(b)); and**
- (j) establish a common data model to standardise the practices of managing and storing data across EUC systems/applications and formulate a strategy to complete the migration of EUC systems/applications running on the obsolete programming language in a more timely manner (para. 4.13(c) and(d)).**

Response from the Government

10. The Commissioner for Census and Statistics generally agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 Government statistical services are provided by the Census and Statistics Department (C&SD) and the statistical units established in various government bureaux and departments (B/Ds — Note 1). The policy bureau of C&SD is the Financial Services and the Treasury Bureau. C&SD's vision is to provide high-quality statistical services, contributing to the social and economic developments of Hong Kong. Its missions are to:

- (a) provide adequate, relevant, reliable and timely statistics to facilitate research, discussion, planning and decision making within the Government and in the community;
- (b) ensure that the compilation and dissemination of statistics are in accordance with scientific principles, professional ethics and international standards; and
- (c) promote a user-based culture, ensuring that users can obtain effective and convenient services.

1.3 Under the Census and Statistics Ordinance (Cap. 316), C&SD conducts statistical surveys which provide an important basis for the formulation of government policies. The surveys are either mandatory or voluntary. Mandatory surveys

Note 1: *While C&SD is responsible for most general-purpose statistics, including the collection, compilation and publication of statistical information concerning Hong Kong, the statistical units in various B/Ds are responsible for statistics for dedicated use in their respective areas of work.*

Introduction

specified under the Census and Statistics Orders (Note 2) include population census which is conducted every ten years and by-census which is conducted in the middle of intercensal period. The respondents in these surveys are required to provide information on a mandatory basis. For voluntary statistical surveys such as the General Household Survey (GHS) conducted on a monthly basis and the Household Expenditure Survey (HES) conducted every five years, the respondents are not required to provide information on a mandatory basis (Note 3). Advance notifications of surveys are gazetted. Both mandatory and voluntary surveys are subject to the same provision for confidentiality of information concerning individuals or companies. The key results of the statistical surveys are published through press releases and on C&SD website. In carrying out its activities, C&SD follows international standards and practices, such as the Special Data Dissemination Standard of the International Monetary Fund (IMF — Note 4). In addition, to ensure that the needs of various sectors of the community can be suitably taken into account in the development of government statistical activities, a Statistics Advisory Board (Note 5) was established by the Government in 1972 to advise C&SD on matters pertaining to government statistical work.

1.4 Headed by the Commissioner for Census and Statistics, C&SD is organised into five divisions, as follows:

Note 2: *The Census and Statistics Orders announced in the gazette the purpose of survey, survey period, target interviewees, specified survey matters (or schedules to be completed), and deadline for destroying completed schedules.*

Note 3: *Of the 30 regular statistical surveys conducted in 2018, 18 were voluntary (e.g. GHS) and 12 were mandatory (e.g. Annual Survey of Imports and Exports of Services specified in the Census and Statistics (Annual Survey of Imports and Exports of Services) Order under Cap. 316L).*

Note 4: *IMF has accepted Hong Kong's subscription to the Special Data Dissemination Standard, which shows that the quality of Hong Kong's economic and financial statistics has met the international standards regarding the coverage, periodicity, timeliness, integrity and accessibility of disseminated data.*

Note 5: *The Board is a non-statutory advisory body chaired by the Commissioner for Census and Statistics. It comprises 11 non-official members (including professionals from the business sector, the academia and the community) and 3 official members including the Director of Planning (or his representative), Government Economist (or his representative) and a representative from the Financial Services and the Treasury Bureau.*

- (a) ***Economic Statistics Division (1).*** It deals with external merchandise trade statistics, price statistics and household and income statistics;
- (b) ***Economic Statistics Division (2).*** It deals with sectoral economic statistics, statistics on science and technology, and statistics on companies in Hong Kong with parent companies located outside Hong Kong. It also handles publication matters and organises human resources development activities for statistical grade staff;
- (c) ***Economic Statistics Division (3).*** It deals with national income statistics and Balance of Payments statistics (see para. 1.5(c)). It also provides support in applications of information technology (IT) and handles data dissemination matters for the department;
- (d) ***Social Statistics Division.*** It deals with demographic and other social statistics, plans and executes population censuses and by-censuses and conducts social surveys; and
- (e) ***Labour Statistics Division.*** It deals with labour statistics and undertakes surveys of employment, labour force, payroll, wages and hours of work.

In addition to the five divisions, there are three supporting branches, namely the Technical Secretariat, Development Branch and Administration Branch responsible for technical, development and administrative matters respectively. The organisation chart of C&SD as at 1 April 2019 is at Appendix A. As at 1 April 2019, C&SD had an establishment of 1,281 permanent staff (Note 6). In addition, there were 247 statistical posts in 34 B/Ds.

1.5 According to its Controlling Officer's Report, C&SD has six programmes, as follows:

Note 6: They included 7 Directorate posts, 83 posts in the Statistician grade, 735 posts in the Statistical Officer/Census and Survey Officer/Statistics Supervisor grades and 456 posts from other grades (e.g. Executive Officer grade, Analyst/Programmer grade and Clerical & Secretarial grades etc.).

Introduction

- (a) ***Trade statistics.*** The aim is to process import/export declarations and cargo manifests, to safeguard the Government's revenue from import/export declaration charges, and to produce and analyse trade statistics;
- (b) ***Social statistics.*** The aim is to produce and analyse demographic, labour force and social statistics, and to maintain a register of quarters as a sampling frame for conducting household surveys;
- (c) ***National accounts and Balance of Payments statistics.*** The aim is to produce and analyse Gross Domestic Product, Gross National Income, Balance of Payments statistics (Note 7) and related statistics in a timely and accurate manner, and to assist in the preparation of the Government's forecasts of various economic aggregates;
- (d) ***General statistical services.*** The aim is to provide statistical consultancy services and to maintain quality standards in statistical work;
- (e) ***Price/Industry/Service statistics.*** The aim is to produce and analyse price, industry and service statistics; and
- (f) ***Labour statistics.*** The aim is to produce and analyse statistics on employment, vacancies, wage, labour earnings and hours of work, and to maintain a Central Register of Establishments as a sampling frame for conducting establishment surveys.

Statistical surveys

1.6 C&SD strives to provide quality statistical services, contributing to the social and economic developments of Hong Kong. In 2018, C&SD handled

Note 7: *The Balance of Payments records economic transactions between Hong Kong and the rest of the world. It represents a comprehensive set of statistics, covering trade in goods and services, investment and income. These statistics on cross-border transactions are useful for monitoring financial flows between Hong Kong and other economies.*

40 surveys/projects (Note 8) and produced 56 reports under the six programmes of Controlling Officer's Report (see Table 1).

Table 1

**Number of surveys/projects handled and reports produced by C&SD
(2018)**

Programme under C&SD's Controlling Officer's Report (Note)	Number of surveys/projects handled	Number of reports produced
Trade statistics	6	8
Social statistics	3	11
National accounts and Balance of Payments statistics	1	4
General statistical services	10	5
Price/Industry/Service statistics	15	23
Labour statistics	5	5
Total	40	56

Source: C&SD records

Note: The social statistical work and labour statistical work are shared among the Social Statistics Division, the Labour Statistics Division and the Economic Statistics Division (1). The remaining statistical work of other nature is shared among the three Economic Statistics Divisions (see para. 1.4(a) to (c)).

1.7 According to C&SD, there are two categories of surveys, namely establishment surveys and household surveys:

- (a) ***Establishment surveys.*** These are surveys on economic activities (e.g. Annual Survey of Economic Activities on Import/Export, Wholesale and Retail Trades, and Accommodation and Food Services Sectors) undertaken by individual survey sections. In a typical establishment survey, questionnaires are mailed to a selected sample of respondents who are

Note 8: These refer to surveys undertaken by C&SD and projects owned by other B/Ds in which C&SD provided professional assistance.

required to return the completed questionnaires by post/fax/email or complete the questionnaires online. Where necessary (e.g. in the case of non-delivery or no response), a sampled case will be followed up by telephone interview or field visit, as appropriate; and

- (b) ***Household surveys.*** These are surveys relating to the demographic and socio-economic characteristics of the population (e.g. GHS and HES — see Note 35 to para. 2.40(b)). For GHS, the fieldwork is distributed among all frontline field officers. To have more precise estimation of changes over time, half of the sampled households in each month will be sampled again three months later. The first round of enumeration is conducted by means of online questionnaire or field visit, while the second one could be conducted by online questionnaire, telephone interview or field visit, subject to the respondent's preference.

1.8 ***Thematic Household Surveys (THSs).*** In addition to the above surveys conducted in-house, in order to meet the demand for statistical data on selected social issues by B/Ds, C&SD has been conducting various THSs since 1999. THSs are contracted out to private research firms under the coordination and management of C&SD. Examples of THS topics included “Housing Conditions of Sub-divided Units in Hong Kong”, reports of which were published in 2015 and 2016, and “Education and Employment Trajectories of Young and Middle-aged Persons”, a report of which was published in 2019.

1.9 ***Review of statistical data quality.*** In response to media reports about the data quality of surveys concerning GHS, the Labour Earnings Survey and the Annual Earnings and Hours Survey, in January 2013, the Government set up an Investigation Task Force on Statistical Data Quality Assurance (hereinafter referred to as the Task Force — Note 9) to examine the authenticity of statistical data and the existing data quality assurance mechanism. In March 2013, the Task Force completed the review and reported that:

Note 9: *The chairperson of the Task Force was the Commissioner for Census and Statistics. Other members comprised a renowned academic in statistics and an experienced senior management executive, as well as an expert in compiling financial indices, and a Principal Economist representing the Government Economist.*

- (a) based on the findings of the verification checks and other related parameters and arguments provided by C&SD, there was not sufficient evidence showing the existence of systematic data fabrication in GHS, the Labour Earnings Survey, and the Annual Earnings and Hours Survey;
- (b) there was not sufficient evidence to query the overall authenticity of the data collected in the above three surveys, and the quality of data collected from the three surveys was sufficiently sound to provide basic inputs for the compilation of the relevant statistical figures;
- (c) in view of the data inconsistencies noted in the verification checks and the increasing challenges faced by C&SD field officers in data collection work, the possibility that individual field officers had not strictly followed the fieldwork guidelines, such as misapplying personal judgement to handle some of the questions in the questionnaire based on their knowledge/experience, or skipping some instructions in the guidelines could not be ruled out;
- (d) while in general the necessary processes were in place to control data quality, C&SD should introduce measures to strengthen and reinforce the existing data quality assurance system in various dimensions; and
- (e) the fieldwork management system encompassed a host of historical, complex and deep-seated issues which would need to be addressed in an integrated and coherent manner in a separate review.

1.10 The Task Force made six recommendations for improving the data quality assurance process and fieldwork management system:

- (a) identification of data categories vulnerable to mis-classification/error and data fabrication for close monitoring of data quality;
- (b) setting up a Departmental Committee on quality assurance of GHS;
- (c) fostering a sense of ownership in the mindset of all stakeholders involved in conducting GHS;

Introduction

- (d) conducting research studies to assess the impact of the declining response rate and the increasing rate of proxy reporting on GHS results;
- (e) introducing appropriate measures to raise public awareness of GHS and C&SD's work; and
- (f) conducting a comprehensive review of the existing fieldwork management system.

1.11 Regarding the recommendation in paragraph 1.10(f), in July 2013, C&SD commissioned a consultant to comprehensively review the fieldwork management system. In May 2014, the consultant made 23 recommendations (see Appendix B) covering four areas:

- (a) workload and work pressure;
- (b) arrangement of GHS fieldwork (including the development and communication of policy on how to deal with sub-divided units (SDUs) in GHS samples);
- (c) communications; and
- (d) a computerised time-log system.

Up to June 2019, C&SD had implemented recommendations on all improvement areas, except for the implementation of a computerised time-log system under (d) above.

Population censuses and by-censuses

1.12 **Sampling basis.** In line with the established practice, population censuses have been conducted in Hong Kong at 10-year intervals since 1961, with by-censuses being carried out in the middle of the intercensal period. The aims of conducting population censuses and by-censuses are to obtain up-to-date benchmark information on the socio-economic characteristics of the population and on its geographical distribution. They provide benchmark data for studying the direction and trend of population changes, which are key inputs for making projections concerning

population, household and labour force. Population censuses involve a complete headcount of the population (Note 10), while by-censuses enquire about the detailed characteristics of the population on the basis of a large sample (Note 11). Population censuses and by-censuses differ from other general sample household surveys in their sizeable scale. This makes them feasible to provide statistics of high precision for population sub-groups and small geographical areas. The last by-census was conducted in 2016 (16BC) and the next population census will be conducted in 2021 (21C).

1.13 ***Mode of data collection.*** Before 2011, data was collected basically by postal questionnaires and face-to-face interviews in population censuses and by-censuses, where enumerators visited households to interview persons therein one by one. C&SD introduced two data collection modes, namely self-enumerations through the Internet (online questionnaires) in 2011 and telephone interviews in 2016. In 21C, C&SD will continue adopting a multi-modal data collection approach, including online questionnaires, postal questionnaires, telephone interviews and face-to-face interviews.

1.14 ***Costs of 16BC and 21C.*** For 16BC, C&SD incurred departmental expenses of \$267 million, of which \$87 million were spent on hiring 7,120 temporary field workers (TFWs) to interview selected households. It also procured IT equipment and services at a cost of \$85 million. For 21C, C&SD would make financial provision of \$746 million for departmental expenses and \$203 million for procurement of IT equipment and services. It planned to hire around 18,000 TFWs to enumerate over three million selected quarters.

Information Systems Strategy

1.15 C&SD's work primarily involves four major activities, namely pre-survey preparation, data collection, processing and analysis, and dissemination. The

Note 10: *In the population census conducted in 2011, following international practices, two types of questionnaires (the "Short Form" for the simple enumeration and the "Long Form" for the detailed sample enquiry) were used. The sampling fraction for the detailed sample enquiry ("Long Form") was set at one-tenth of the population.*

Note 11: *In the by-census conducted in 2016, a sample of about one-tenth of the quarters in Hong Kong was randomly selected for detailed enquiry.*

Introduction

application systems used by C&SD comprise infrastructure systems, administrative and management systems, statistical survey systems and a separate set of systems for population censuses and by-censuses. Overall, C&SD has over 100 departmental or survey-specific systems, platforms and applications, including more than 80 End-User Computing (EUC) systems/applications. The application systems are either maintained by the Information Technology Management Unit comprising three branches under the Economic Statistics Division (3) and the Census System Services Branch under the Social Statistics Division, or by individual user branches/sections.

1.16 In May 2003, C&SD commenced an Information Systems Strategy (ISS) study to formulate a five-year plan, with the objectives to improve the overall productivity, service quality and cost-effectiveness. In the study report issued in March 2004 (2004 ISS Report), a total of 16 projects were proposed. Having assessed the impact and complexity of the 16 proposed projects, C&SD decided to implement the projects by two phases (i.e. implementing 9 projects in Phase 1 from 2004 to 2016 and conducting a mid-term review (Note 12) in December 2017 before implementing the remaining 7 projects in Phase 2). As of 31 March 2019, \$66 million had been spent on the implementation of the 9 Phase 1 projects. A final report of the review was issued in January 2019 (2019 ISS Report). C&SD is examining the way forward based on the findings of the report.

Financial provision

1.17 The total expenditure of C&SD in 2017-18 was \$644 million, and that in 2018-19 was \$666 million. In both years, about 88% (i.e. \$564 million and \$586 million respectively) of the expenditures were related to personal emoluments or personnel related expenses.

Note 12: *A Departmental Information Technology Planning cum ISS Review was carried out to review the implementation of IT projects recommended in the 2004 ISS Report and develop a Departmental Information Technology Plan under the Government Technology and System Architectures Framework.*

Audit review

1.18 In April 2019, the Audit Commission (Audit) commenced a review to examine the statistical services provided by C&SD, focusing on:

- (a) statistical surveys (PART 2);
- (b) population censuses and by-censuses (PART 3); and
- (c) implementation of information systems strategy (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.19 The Secretary for Financial Services and the Treasury appreciates Audit's efforts in conducting the review and putting forward recommendations to help improve the operation of C&SD and agrees with the audit recommendations.

1.20 The Commissioner for Census and Statistics generally agrees with the audit recommendations.

Acknowledgement

1.21 Audit would like to acknowledge with gratitude the assistance and full cooperation of the staff of C&SD during the course of the audit review.

PART 2: STATISTICAL SURVEYS

2.1 This PART examines the conduct of statistical surveys by C&SD, focusing on:

- (a) GHS (paras. 2.2 to 2.18);
- (b) SDU Survey (paras. 2.19 to 2.37);
- (c) Monthly Retail Price Survey (MRPS) (paras. 2.38 to 2.46); and
- (d) implementation of a department-wide computerised time-log system (paras. 2.47 to 2.51).

General Household Survey

2.2 As mentioned in paragraph 1.7(b), an on-going household survey (i.e. GHS) involving around 9,000 quarters is conducted each month through online questionnaire, field visit and Computer-Assisted Telephone Interview (CATI — Note 13). Its main objective is to collect information on:

- (a) labour force, employment, unemployment and under-employment; and
- (b) demographic and socio-economic characteristics of the population.

The information collected is useful for the Government to review and formulate social and economic policies. Such information is also widely used in research conducted by academic and private sectors.

2.3 In a GHS, each enumerated household member typically answers some 20 to 40 questions, depending on his/her economic activity status (i.e. whether he/she is employed, unemployed, under-employed or economically inactive). While the

Note 13: *Some 2,000 to 3,000 cases in the repeated samples are enumerated through CATI each month.*

report of GHS is published quarterly, labour force related statistics compiled from GHS, including unemployment and under-employment statistics (for the last three months), are released on a monthly basis. Since 2003, GHS fieldwork has been shared by all frontline field officers in 10 field pools in 4 divisions within C&SD, with support provided by a central and independent team (known as GHS Central Field Team) on the field operation and the conduct of quality checks (QCs). In response to Audit's enquiry, in July 2019, C&SD provided a breakdown on the estimated number of field officers (i.e. Senior Census and Survey Officers (SCSOs), Census and Survey Officers (CSOs), Assistant Census and Survey Officers (ACSOs) and Survey Interviewers (SIs)) involved in GHS work, expressed in terms of full-time equivalent (FTE) posts (see Table 2).

Table 2

**Estimated number of field officers involved in GHS work
(31 March 2019)**

Rank (Note)	10 field pools		GHS Central Field Team		Total	
	No. of posts (a)	No. of FTE posts (b)	No. of posts (c)	No. of FTE posts (d)	No. of posts (e) = (a) + (c)	No. of FTE posts (f) = (b) + (d)
SCSO	10	1	1	1	11	2
CSO	84	12	7	7	91	19
ACSO/SI	187	66	12	12	199	78
Total	281	79	20	20	301	99

Source: C&SD records

Note: SCSO is the head of field pool. CSO and ACSO are the supervisor and frontline field officer respectively. Equivalent to permanent ACSO staff, SIs are employed on a temporary basis.

2.4 According to the Task Force Report of March 2013 (see para. 1.9):

- (a) it was alleged that some frontline field officers might circumvent:
 - (i) enumeration work on SDUs by falsifying the enumeration results of such cases as non-contact (NC) or un-occupied; and

- (ii) supervisors' review checks by falsifying the telephone number of respondents.

Nevertheless, the Task Force was of the view that there was not sufficient evidence showing the existence of systematic data fabrication in GHS nor convincing evidence to query the overall authenticity of the data collected; and

- (b) C&SD should identify data categories which were vulnerable to mis-classification/error or data fabrication. According to C&SD, these included data related to employment status (e.g. falsely stating unemployed respondents as employed in order to skip collecting data on some follow-up questions).

In June 2013, in response to the Task Force's recommendations, C&SD set up a Departmental Committee on Data Quality Assurance of GHS (DCQA-GHS — Note 14) to coordinate and strengthen the quality assurance system of GHS.

Need to improve in-depth QCs of GHS

2.5 According to C&SD, in-depth QCs are conducted to ensure the quality of GHS data collection process before all questionnaires are thoroughly edited by indoor statistical officers and validated by the GHS computer system. The in-depth QCs comprise two stages of independent checking:

- (a) *Stage 1 in-depth QCs by field pool supervisors.* Cases are selected according to a purely random mechanism, such that each successfully enumerated case has an equal chance of being selected for checking to ensure that there is no selection bias among the cases. Each CSO supervisor will select a proportion of cases completed by his/her ACSO subordinates. The results of checking can be generalised to all cases for objective assessment of the overall data quality; and

Note 14: *DCQA-GHS was chaired by the Deputy Commissioner for Census and Statistics, with representatives from different ranks and grades involved in GHS work as members.*

- (b) **Stage 2 in-depth QCs by GHS Central Field Team.** Cases are selected based on a target-based mechanism instead. Top priority of selection is accorded to the proper classification of the economic activity status of the respondents (i.e. whether they are employed, unemployed, under-employed or economically inactive). Only cases not checked (including cases selected but cannot be checked due to no/wrong telephone number) in Stage 1 will be subject to selection for checking at this stage in order to avoid over-burdening the respondents from being re-checked for the same survey. Stage 2 checking aims to minimise reporting errors in important/high risk cases with the resources available.

2.6 Field pool supervisors include SCSO and CSO rank officers, and GHS Central Field Team consists of 1 SCSO and 7 CSOs. The errors identified in the in-depth QCs of GHS questionnaires are classified into two categories, namely:

- (a) **“Major errors”.** “Major errors” are related to misclassification of economic activity status of respondents (e.g. unemployed classified as economically inactive and vice versa); and
- (b) **“Minor errors”.** “Minor errors” are errors identified in other parts of the questionnaires which have no or minimal impact on the labour force statistics, such as inadequacy in recording details of the occupation of the respondents to the finest coding level (e.g. “account clerk” or “personnel clerk” rather than just “clerk”).

2.7 In order to strengthen in-depth QCs of GHS, the percentage of in-depth QCs for high-risk data categories has increased from 10% to 15% on field cases since 2013. According to the GHS Manual on Fieldwork Control (for field pools) and the Work Manual for GHS Central Field Team, field pool CSO supervisors and GHS Central Field Team will respectively select randomly and with priority (e.g. household cases with unemployed persons) 7.5% of GHS questionnaires on successfully enumerated household cases for conducting in-depth QCs each month. QC checkers will make telephone calls to contact the respondents to verify the attendance of enumerators (i.e. ACSOs) and accuracy of key data items recorded. Audit analysis of the in-depth QCs on enumerated GHS cases from April 2018 to March 2019 is shown in Table 3.

Table 3

**Analysis of in-depth QCs on enumerated GHS cases
(April 2018 to March 2019)**

Month/Year	No. of QC cases successfully conducted (a)	Error cases (Note)					
		Major error cases		Minor error cases		Total	
		(b) No.	(c) = $\frac{(b)}{(a)} \times 100\%$ %	(d) No.	(e) = $\frac{(d)}{(a)} \times 100\%$ %	(f) = (b) + (d) No.	(g) = $\frac{(f)}{(a)} \times 100\%$ %
<i>QCs by field pool supervisors (Stage 1 checking)</i>							
4-6/2018	1,572	3	0.19%	10	0.64%	13	0.83%
7-9/2018	1,550	1	0.06%	13	0.84%	14	0.90%
10-12/2018	1,474	1	0.07%	7	0.47%	8	0.54%
1-3/2019	1,422	0	0.00%	13	0.91%	13	0.91%
Overall	6,018	5	0.08%	43	0.71%	48	0.80%
<i>QCs by GHS Central Field Team (Stage 2 checking)</i>							
4-6/2018	1,409	13	0.92%	176	12.49%	189	13.41%
7-9/2018	1,399	19	1.36%	192	13.72%	211	15.08%
10-12/2018	1,409	12	0.85%	210	14.90%	222	15.76%
1-3/2019	1,371	14	1.02%	215	15.68%	229	16.70%
Overall	5,588	58	1.04%	793	14.19%	851	15.23%
<i>Overall QCs</i>							
4-6/2018	2,981	16	0.54%	186	6.24%	202	6.78%
7-9/2018	2,949	20	0.68%	205	6.95%	225	7.63%
10-12/2018	2,883	13	0.45%	217	7.53%	230	7.98%
1-3/2019	2,793	14	0.50%	228	8.16%	242	8.66%
Overall	11,606	63	0.54%	836	7.20%	899	7.75%

Source: Audit analysis of C&SD records

Note: Each questionnaire with error in one or more data items spotted during in-depth QCs was counted as one error case. Questionnaires with both “major errors” and “minor errors” were counted as “major error cases” only.

2.8 Audit examination revealed the following findings:

- (a) ***Small number of error cases identified by field pool supervisors.*** Audit analysis of the results of the in-depth QCs covering 11,606 GHS questionnaires from April 2018 to March 2019 revealed that, of the 899 error cases found, only 48 were identified by the field pool supervisors with an error rate of 0.8% (i.e. $48 \div 6,018 \times 100\%$) while 851 were found by GHS Central Field Team with an error rate of 15.23% (i.e. $851 \div 5,588 \times 100\%$);
- (b) ***The majority of error cases identified were “minor error cases”.*** The bulk of error cases identified by in-depth QCs of GHS were “minor error cases”. From April 2018 to March 2019, the overall “major error” rate was 0.54%, and the overall “minor error” rate was 7.2%. Of the 836 “minor error cases” found, only 43 (5%) were identified by field pool supervisors while 793 (95%) were found by GHS Central Field Team; and
- (c) ***Inadequate follow-up of NC cases due to wrong/no telephone numbers and cases with duplicate telephone numbers.*** According to the GHS Manuals for field pools and GHS Central Field Team:
 - (i) QC checkers are required to attempt to call respondents at least three times (including one night-call between 6:30 pm and 10 pm) for any in-depth QC cases to be regarded as NC cases;
 - (ii) if such in-depth QC cases selected by field pools are found to have wrong/no telephone numbers, some of them would be randomly selected for checking by GHS Central Field Team (see para. 2.5(b)); and
 - (iii) for in-depth QC cases selected by GHS Central Field Team with wrong/no telephone numbers, section head or field head of GHS Central Field Team will select some of them (around 20% to 30%) for follow-up actions by field visits.

In Stage 1 in-depth QCs, another case will be randomly selected for checking if a case sampled for in-depth QCs is found to have a wrong/no telephone number so that the required 7.5% of in-depth QC rate for each field officer is met. These wrong/no telephone number cases are regarded

as cases not checked in Stage 1 in-depth QCs and are subject to selection for checking in Stage 2 in-depth QCs. In Stage 2 in-depth QCs, another case will not be selected for checking if a case sampled for in-depth QCs is found to have a wrong/no telephone number. According to C&SD, such arrangement is adopted due to time constraint as Stage 2 in-depth QCs have to be completed within one to two days under the tight monthly cycle of GHS (Note 15). Notwithstanding this, a certain number of wrong/no telephone number cases identified in Stage 2 in-depth QCs will still be selected for follow up by GHS Central Field Team by field visits. It was also noted that according to the Task Force Report, an in-house examination of GHS questionnaires for the 11-month period from February to December 2012 revealed that some questionnaires with the same telephone numbers recorded were identified. Such cases involved 61 questionnaires (including 29 pairs of questionnaires and 1 group of 3 questionnaires) which were handled by 40 field officers.

2.9 In response to Audit's enquiry, in August and September 2019, C&SD said that:

- (a) in-depth QCs conducted by GHS Central Field Team were important/vulnerable cases which were more prone to error. It was therefore natural that the error rate for major mistakes was higher for cases checked by GHS Central Field Team than those checked by field pools;
- (b) among the cases with wrong/no telephone numbers, the vast majority were no telephone number cases since some respondents preferred not to disclose their telephone numbers due to privacy concerns;
- (c) there was a monthly average of around 50 wrong/no telephone number cases identified in Stage 2 in-depth QCs in the period from January to March 2019. These cases were consolidated at the end of each month and four such cases were selected for checking by two CSOs of GHS Central Field Team on a rotational basis by field visits. No irregularities had been found so far; and

Note 15: *According to C&SD, the QC rate of Stage 2 in-depth QCs could still meet the 7.5% target even if the selected wrong/no telephone number cases were not counted. The average in-depth QC rate was 7.8% for the first quarter of 2019.*

- (d) the cases with same telephone numbers recorded as reported in the Task Force Report accounted for less than 0.1% of all enumerated cases in the period concerned.

In Audit's view, in-depth QC cases involving wrong/no telephone numbers pose a higher risk of falsification and they should be investigated thoroughly, instead of being substituted by another cases in Stage 1 in-depth QCs. As cases involving duplicate telephone numbers also pose a higher risk of falsification, they should also be monitored and followed up where necessary. In order to improve the in-depth QCs of GHS, C&SD needs to review the proportion of Stage 1 checking (i.e. those conducted by field pool supervisors on a random basis) and Stage 2 checking (i.e. those conducted by GHS Central Field Team on a target basis), and consider conducting more Stage 2 checking. C&SD also needs to step up actions in following up NC cases in Stage 1 and Stage 2 checking due to wrong/no telephone numbers and in checking enumerated cases with duplicate telephone numbers.

***Need to keep proper documentation
on monitoring of ACSOs on the Monitoring List***

2.10 As mentioned in paragraph 2.4(a), it was alleged that some ACSOs might circumvent enumeration work on SDUs by falsifying the enumeration results of such cases as NC or un-occupied. According to C&SD, the overall NC rate of GHS field visits dropped from 18.7% in the first quarter of 2016 to 13.4% in the fourth quarter of 2018 (Note 16). According to the GHS Manual on Fieldwork Control (for field pools), management statistics reports on quality indicators and their comparisons with benchmarks are provided to CSO supervisors for reference in monitoring the performance of their subordinates and for taking follow-up actions where necessary.

2.11 To further facilitate CSO supervisors to monitor the performance of their ACSO subordinates in respect of GHS work, a report "Performance Management Statistics Report" showing the trend of performance (achievement vs benchmark) in each month was prepared for each ACSO concerned and passed to the respective CSO supervisors on a quarterly basis as a reference for assessing the performance of the ACSO in respect of GHS fieldwork. Based on the Performance Management Statistics

Note 16: *According to C&SD, the reduction of NC rate was partly attributable to the implementation of online questionnaires, which provided an alternative means of data provision by some households. Otherwise, these cases would be NC cases.*

Reports prepared for the 160 ACSOs with GHS work involvement of 6 months or more in 2018 in nine field pools (excluding one field pool with 21 ACSOs responsible for enumeration work through CATI only), Audit noted that 32 ACSOs had high average NC rates of more than 25 % in 2018 (ranging from 25.1 % to 39.3 %).

2.12 According to the GHS Manual on Fieldwork Control (for field pools), a CSO supervisor should take necessary actions (e.g. requesting the ACSO concerned to provide details of visits made for those NC cases) to verify the cases if the number of NC cases reported by an ACSO is high. In September 2019, C&SD informed Audit that a Monitoring List was maintained to identify ACSOs with completion rates consistently lower than the benchmark by more than 5 percentage points for over six months during the past twelve months (Note 17). These ACSOs would be closely monitored and coached by their supervisors case by case. C&SD explained that the completion rate was used for monitoring because it was unfair to the ACSOs if analysis on their performance was simply based on NC rate. The reasons were as follows:

- (a) while the NC rate in Performance Management Statistics Report was one performance indicator, it only focused on eligible cases for GHS (i.e. domestic quarters being occupied by households), and non-eligible cases were not included in the calculations. Field officers' efforts in visiting non-eligible cases (e.g. quarters without occupiers, quarters used for non-domestic purposes, and demolished quarters) and in ascertaining the non-eligibility of these cases were not reflected; and
- (b) since the allocation of GHS assignments to individual ACSOs was based on their place of residence, some ACSOs might have consistently high NC rate (or low completion rate) due to inherent contact/response patterns of the households in the geographical locations of their assignments (e.g. assignments in West Kowloon, Mid-Levels and the Peak tended to have lower completion rates as it was generally more difficult to contact the households living in these areas) rather than performance factors.

Note 17: *According to C&SD, the benchmark was based on the performance of ACSOs in the same assignment area and housing type in the past 12 months. CSO supervisors would keep monitoring these field officers for a period of time after they had improved their performance and been removed from the Monitoring List. For those who were retained in the list, C&SD would try to understand their development needs and offer suitable support to help them improve their performance.*

2.13 Audit noted that in the DCQA-GHS meeting held on 3 April 2019, there were 5 ACSOs on the Monitoring List covering the period from January to December 2018 (compared with 14 and 10 ACSOs on the List covering the same period in 2016 and 2017). Audit requested C&SD to provide documentation on the monitoring and coaching given to the five ACSOs. However, C&SD said that while written records on supervisory field visits made were kept, no other written records on the monitoring and coaching given to those ACSOs on the Monitoring List were available since such types of work were performed by CSO supervisors as part of their routine day-to-day supervisory duties. In Audit's view, for better supervision of ACSOs with consistently low completion rates and for management review, C&SD needs to keep proper documentation on the monitoring and coaching of ACSOs on the Monitoring List.

Need to continue to closely monitor proxy reporting

2.14 According to C&SD, DCQA-GHS has been monitoring the proxy rate of GHS regularly. Audit noted that at the meeting of DCQA-GHS held in May 2016, it was pointed out that:

- (a) proxy reporting should be avoided as far as possible;
- (b) all field officers should attempt to contact the absent household members after completing field visits by asking them to call back and/or by making follow-up calls to them later; and
- (c) when it is unavoidable to obtain information by proxy, the field officer should ensure that the respondent has enough knowledge to provide reliable information about the absent members and should attempt to verify the information with the absent members afterwards if considered necessary.

The GHS Manual on Fieldwork Control (for field pools) states that the use of proxy reporting to speed up fieldwork progress is undesirable as this may affect data quality.

2.15 According to the report of the Task Force issued in March 2013, there had been an increase in the rate of proxy reporting in GHS from 52.4% in the fourth quarter of 2003 to 59% in the fourth quarter of 2012, and considered that such

increase in the rate of proxy reporting in GHS might lead to deterioration of quality of GHS data. However, Audit noted that, from 2016 to 2018, the rate of proxy reporting remained at a high level, ranging from 53.4% to 56.5%.

2.16 In response to Audit's enquiry in September 2019, C&SD said that high rate of proxy reporting was a universal phenomenon in labour force surveys across the world. For example, the rate of proxy reporting of such survey in the United States was around 50%, and that in Canada was around 65%. In practice, proxy reporting was often a preference by the respondents on which the government statistical office had no control. In Audit's view, in light of the persistently high rate of proxy reporting, C&SD needs to continue to closely monitor the rate of proxy reporting in cases completed by field officers and reinforce training for field officers in handling proxy reporting.

Audit recommendations

2.17 **Audit has *recommended* that the Commissioner for Census and Statistics should:**

- (a) **take measures to improve in-depth QCs of GHS, including:**
 - (i) **reviewing the proportion of Stage 1 and Stage 2 checking, and considering conducting more Stage 2 checking; and**
 - (ii) **stepping up actions in following up NC cases in Stage 1 and Stage 2 checking due to wrong/no telephone numbers, and in checking enumerated cases with duplicate telephone numbers;**
- (b) **keep proper documentation on the monitoring and coaching of ACSOs on the Monitoring List; and**
- (c) **continue to closely monitor the rate of proxy reporting in cases completed by field officers and reinforce training for field officers in handling proxy reporting.**

Response from the Government

2.18 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that:

- (a) apart from in-depth QCs in data collection stage, all GHS questionnaires are thoroughly edited by indoor statistical officers and validated by computer. In the light of Audit's recommendations, C&SD will review the proportion of Stage 1 and Stage 2 checking taking into account the time and resources available and the impact on respondents. C&SD will also step up the checking on NC cases due to wrong/no telephone numbers starting from January 2020. Besides, a new checking mechanism will be introduced for cases with duplicate telephone numbers with effect from January 2020;
- (b) C&SD is formulating a set of guidelines to ensure proper documentation on the day-to-day monitoring and coaching work on ACSOs on the Monitoring List; and
- (c) C&SD will continue to closely monitor the rate of proxy reporting, and will remind field officers of the proper procedures of handling proxy reporting in the coming refresher training on GHS for field officers to be organised in the first quarter of 2020.

Sub-divided Unit Survey

Thematic household surveys

2.19 ***First THS on SDUs in 2014.*** At the request of the Transport and Housing Bureau (THB), C&SD included the topic of SDU in THS conducted from June to November 2014, which was the first THS on SDUs. According to C&SD, the major objective of THS on SDUs in 2014 was to estimate the total number of SDUs in private domestic/composite buildings (excluding village houses) aged 25 or above in Hong Kong. Information relating to the housing conditions of SDUs was also collected in the survey. The estimated number of SDUs was 86,400, which was

reported in the Long Term Housing Strategy (LTHS — Note 18) Implementation Milestones (as at December 2014). Detailed results of the first THS on SDUs (2014 THS Report) were published in July 2015.

2.20 *Second THS on SDUs in 2015.* The second THS on SDUs in private domestic/composite buildings (excluding village houses) aged 25 or above in Hong Kong was conducted from May to September 2015. The results (2015 THS Report) were published in March 2016. The estimated number of SDUs was 88,800 (comprising 17,800 on Hong Kong Island, 51,900 in Kowloon and 19,100 in the New Territories). According to the 2015 THS Report, 61.6% and 36.3% of SDU households said that the reason for living in SDUs was “more affordable rent” and “convenience to go to work/school” respectively. Other reasons included “financial difficulties” (22.6%), “lack of space to live with parents/relatives” (5.7%) and “family problems” (5.1%). The long-term housing demand from households living in SDUs was projected based on the relevant results of the second THS on SDUs for the annual update of LTHS in 2015.

Enumeration on SDUs under 16BC (16BC SDU enumeration)

2.21 In August 2013, in order to estimate the number of inadequately housed households, THB suggested adding a new data topic on “Whether the household’s accommodation is inside an SDU” (Note 19) in 16BC. In this connection, a new data topic on SDU was included in 16BC conducted in 2016. According to C&SD, respondents were asked whether the unit of quarters they occupied was an SDU. Coupled with information collected on other data topics (e.g. household composition, education and employment), statistics on the characteristics of households and persons living in SDUs were compiled. About one-tenth of all quarters in Hong Kong (i.e. 299,300) were sampled in 16BC.

Note 18: *In December 2014, the Government announced LTHS. It was the first long-term strategic document in housing since 1998. Its strategic direction was to gradually avert the current supply-demand imbalance.*

Note 19: *Other than THB, the Social Welfare Department also suggested adding a data topic on SDU, taking into account that: (a) the Government was facing great pressure from the public and political parties to help those low-income households living in SDUs in private housing; and (b) availability of additional information would enable the Government to grasp an overall picture of such situation (i.e. number and characteristics of families) in Hong Kong, thereby facilitating an evidence-based approach in addressing the problem.*

2.22 In September 2019, C&SD informed Audit that the first requirement of sampling for the whole 16BC was a complete and accurate list of the addresses to be sampled (hereinafter referred to as Frame of Quarters (FoQ)). FoQ refers to a database maintained by C&SD covering land areas. It serves as the sampling frame of population censuses/by-censuses and other household surveys (Note 20). To ensure the precision of statistical analyses on the new data topic on SDU, and following the consultant's recommendation in May 2014 (see para. 1.11) that measures should be developed to cope with the unanticipated increase in workload due to numerous SDUs newly discovered in a unit of sampled quarters, a special frame updating exercise on SDUs was conducted before 16BC for the purpose of devising an appropriate sample design for enumerating SDUs and facilitating the effective allocation of fieldwork assignments of 16BC. In this connection, C&SD had collated intelligence on the locations with higher chances of having SDUs. In particular:

- (a) in September 2014, C&SD requested the Home Affairs Bureau (HAB) to provide information (Note 21) relating to the first launch of the "One-off living subsidy for low-income households not living in public housing and not receiving Comprehensive Social Security Assistance (CSSA —

Note 20: *FoQ comprises two registers, namely Register of Quarters and Register of Segments. Register of Quarters contains a full list of addresses in built-up areas in Hong Kong, each with a unique house number, street name, floor number and flat number. Register of Segments is a list of area segments in non-built-up areas. Each area segment contains some 8 to 15 quarters and is delineated by some natural or easily identifiable boundaries (such as footpaths). According to C&SD, regular updating of FoQ is based on the administrative information on the demolition of old buildings and the construction of new buildings, which is available from various sources including the Housing Department and the Buildings Department. As an established practice, an updating exercise for area segments will also be conducted prior to the conduct of each population census/by-census through field visits.*

Note 21: *C&SD obtained from HAB three data fields (which would not enable identification of individual applicants) in the one-off living subsidy applications: (a) address of the applicant; (b) type of accommodation as declared in the application form; and (c) an indicator on whether the application was successful.*

Note 22)” programme (the one-off living subsidy programme) under the Community Care Fund (CCF — Note 23); and

- (b) in May 2015, C&SD also obtained from the Social Welfare Department a list of addresses (with information on type of accommodation) of CSSA cases with recipients residing in private residential buildings.

According to C&SD, since many SDU residents might be recipients of CSSA or the one-off living subsidy programme, the addresses obtained from these administrative sources were useful reference for identifying buildings that were more likely to have SDUs and thus prioritising the resources for identifying quarters with SDUs in FoQ.

2.23 The special frame updating exercise on SDUs for 16BC was conducted from August to October 2015, covering 5,000 selected buildings in 18 districts. According to C&SD, the 5,000 buildings were selected based on information from CCF, the Social Welfare Department and other sources (e.g. SDUs identified in 2014 THS). Enumerators of the outsourced contractor classified the quarters in these selected buildings into the following types by field observations (Note 24):

Note 22: *CSSA scheme provides a safety net for those who cannot support themselves financially. It is designed to bring their income up to a prescribed level to meet their basic needs.*

Note 23: *Established in early 2011, CCF’s main objective is to provide assistance to people facing financial difficulties, in particular those who fall outside the social safety net or those within the safety net but still have special circumstances that are not covered. Under CCF, three one-off living subsidy programmes were launched in December 2013, January 2015 and January 2016 respectively to relieve the financial pressure of such low-income households (commonly known as “N have-nots households”). Subject to the eligibility criteria, applicants living in private housing (including SDUs), industrial buildings or commercial buildings could apply for the subsidy.*

Note 24: *According to C&SD, enumerators of the outsourced contractor were required to observe whether each unit of the quarters in the assigned buildings contained SDUs, and if so, to record the number of SDUs and relevant observations (e.g. number of door bells, mail boxes and water/electricity meters), and to draw sketch maps showing the relative positions of SDUs and their entrances. To ensure the data quality of the exercise, QCs on the observation results were also conducted by an independent QC team of the contractor as well as C&SD field officers (each covering some 250 buildings).*

- (a) **Type 1.** These were quarters without any SDUs or quarters having SDUs for non-residential use only;
- (b) **Type 2.** These were quarters having SDUs and the number of SDUs therein was certain;
- (c) **Type 3.** These were quarters having SDUs but the number of SDUs therein was uncertain; and
- (d) **Type 4.** These were quarters which could not be verified whether they had any SDUs.

After completing the 10-week fieldwork, the outsourced contractor reported that there were 275,871 quarters, comprising 260,239 Type 1 quarters, 4,945 Type 2 quarters, 1,960 Type 3 quarters, 6,268 Type 4 quarters and 2,459 merged quarters. According to C&SD, coupled with information collected in the updating exercise for area segments by C&SD field officers (see Note 20 to para. 2.22), C&SD updated the quarters with SDUs in FoQ for sampling in 16BC (Note 25).

2.24 **Various stages of SDU Survey.** 16BC SDU enumeration involved mainly three stages, namely pre-survey stage, enumeration stage and post-survey stage, as follows:

- (a) **Pre-survey stage.** This mainly involved the updating of FoQ, sampling and allocation of assignments to enumerators in 16BC;
- (b) **Enumeration stage.** This mainly involved the collection of data (e.g. questionnaires completed by enumerators through face-to-face interviews) for 16BC; and

Note 25: *According to C&SD, samples in 16BC were basically selected using disproportionate stratified systematic sampling method with type of housing, geographical areas and type of quarters as the stratification factors. To improve the precision of data analyses on SDUs, “known and suspected SDUs in high-rise private residential blocks” were placed in a separate stratum and the remainder in another stratum during the sampling process. In other words, regardless of whether the quarters were labelled as SDUs in FoQ before 16BC, they would be sampled and their SDU status would be confirmed in the field operation of 16BC.*

- (c) **Post-survey stage.** This mainly involved data processing, estimation procedures and dissemination of survey results. Statistics and analysis relevant to the new data topic on SDUs were published in the form of thematic report after releasing the main results of 16BC.

2.25 **Estimation procedures.** According to 16BC Technical Report (Note 26) issued by C&SD in November 2017, the procedures were:

- (a) **Treatment of NC cases.** Despite repeated visits during the fieldwork period of 16BC, there were cases where enumerators were not able to contact the households to collect the required information (i.e. NC cases — Note 27). The overall NC rate was 20.2% of households covered in 16BC. For these NC households, their basic characteristics were imputed. According to C&SD, for NC cases imputed as SDUs under 16BC (regardless of whether they were imputed based on SDU data in FoQ directly or auxiliary data of 16BC or other sources (see para. 2.33)), the characteristics of households and persons living in those SDUs were imputed based on those of successfully-enumerated SDUs, which served as the donor of imputed values; and
- (b) **Estimation based on sample enquiry.** It aimed to estimate detailed characteristics of the population and households.

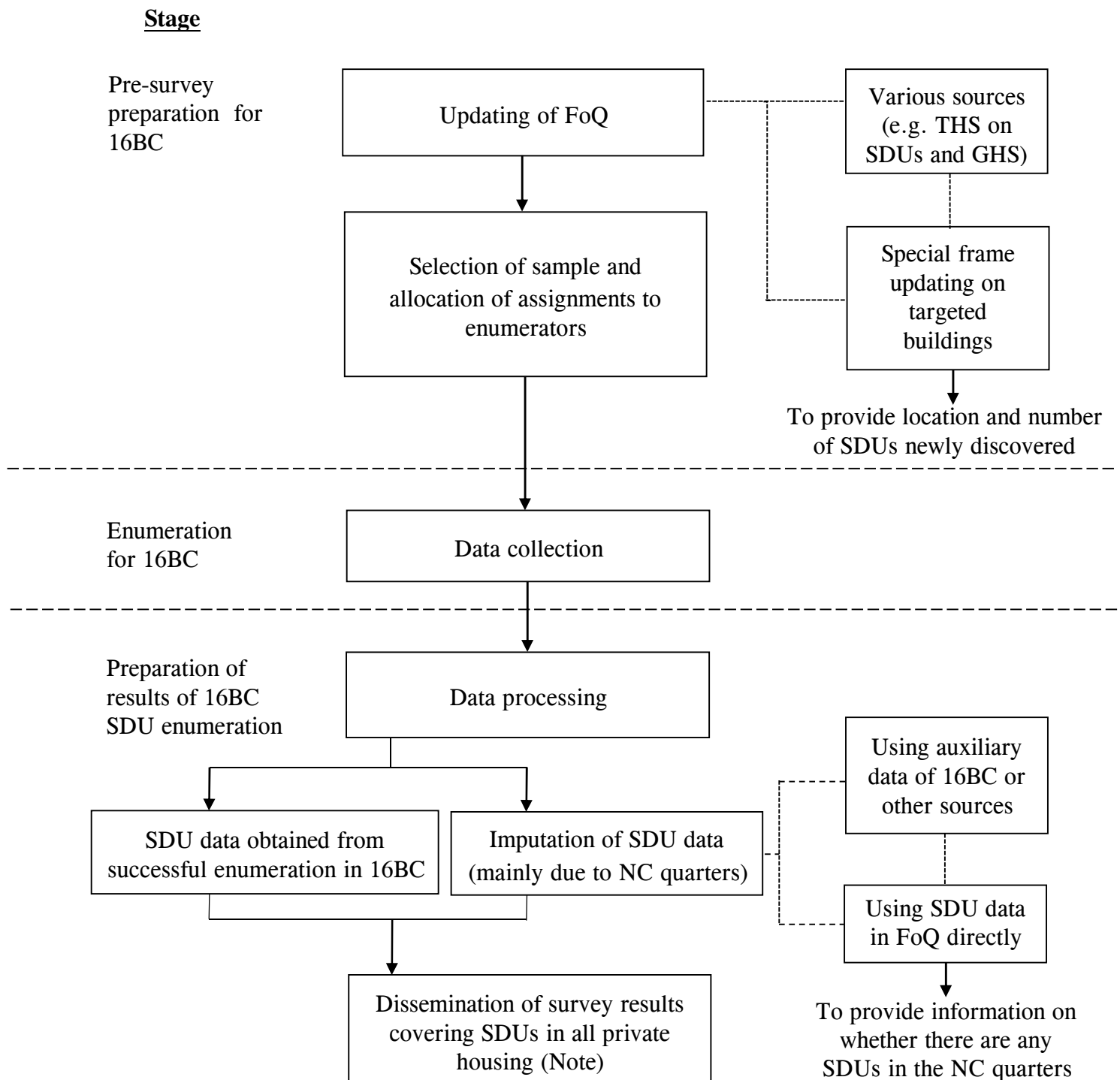
Figure 1 shows the flow chart of the 16BC SDU enumeration. Figure 2 shows the enumeration results of 16BC extracted from the 16BC Technical Report.

Note 26: *According to C&SD, the 16BC Technical Report provided an overview on how 16BC was conducted, with detailed descriptions on various aspects from planning to data collection, processing and dissemination. It supplemented the other reports that contained findings of 16BC, enabling users to better understand the methodology/procedures pertaining to the data collected in 16BC.*

Note 27: *In general, a household was classified as an NC case only if an enumerator had visited it for more than four times on different dates and at different times during the by-census period.*

Figure 1

Flow chart of the 16BC SDU enumeration

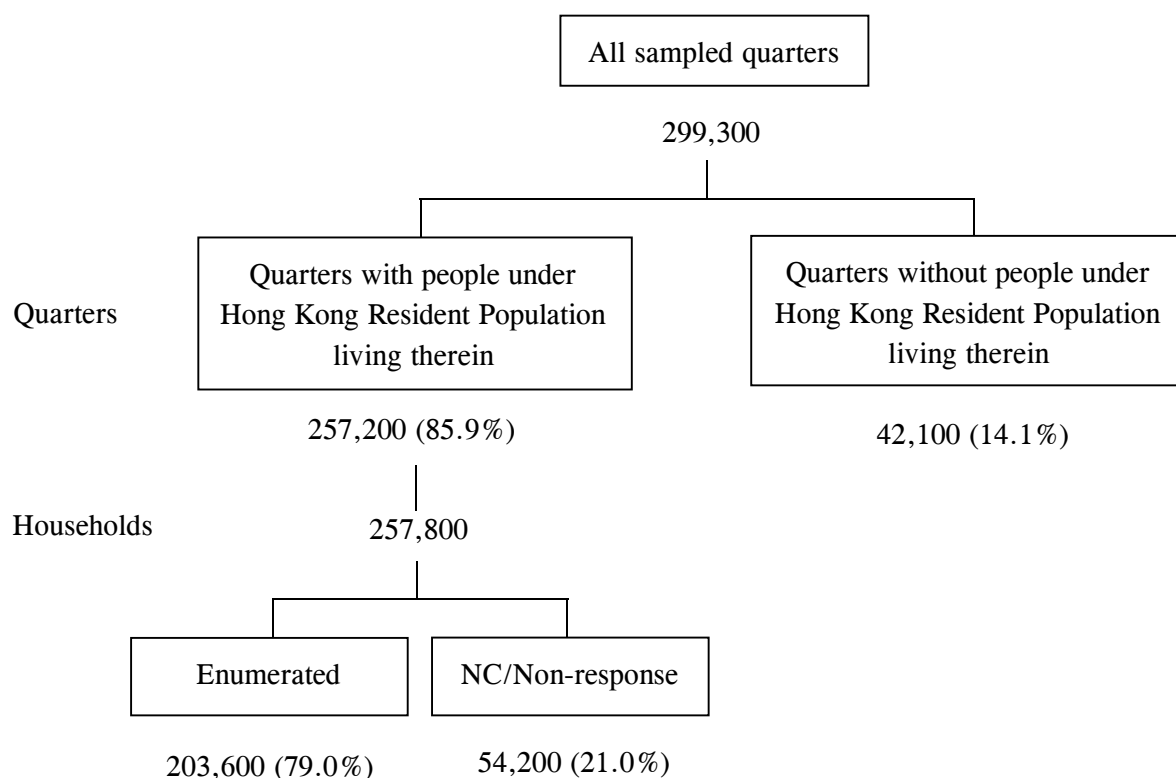


Source: Audit analysis of C&SD records

Note: Private housing included private residential flats, village houses, commercial buildings and temporary quarters.

Figure 2

Enumeration results of 16BC
extracted from 16BC Technical Report issued in November 2017



Source: Audit analysis of C&SD records

2.26 In January 2018, C&SD published the report entitled “Thematic Report: Persons Living in Sub-divided Units” (16BC Thematic Report on SDUs). The estimated number of SDUs was 92,656 (Note 28). According to the 16BC Thematic Report on SDUs:

Note 28: For 16BC, SDUs referred to those formed by splitting a unit of quarters into two or more “internally connected” (i.e. the occupants could move between rooms without going outside through a public corridor, landing or staircase) and “externally accessible” (i.e. the occupants had direct access to the street, a public corridor or landing without going through someone else’s quarters) units commonly for rental purposes. SDUs in all private housing regardless of building age were covered.

- (a) there were some 27,100 quarters with SDUs in Hong Kong. The total number of SDUs in these quarters was estimated to be 92,656. Each of these quarters was sub-divided into 3.4 SDUs on average. These SDUs accommodated some 91,800 households and 209,700 persons. The average household size was 2.3 persons; and
- (b) 52,688 (56.9%) SDUs were located in Kowloon, 21,888 (23.6%) in the New Territories and 18,080 (19.5%) on Hong Kong Island. Districts with a larger number of SDUs included Yau Tsim Mong (21,485), Sham Shui Po (15,449), Kowloon City (9,030), Eastern (8,389) and Tsuen Wan (6,574).

Table 4 shows the breakdown of SDUs by region and district of the 16BC SDU enumeration (only the total estimated numbers of SDUs in the respective regions and districts (i.e. column (d) in Table 4) were disclosed in the 16BC Thematic Report on SDUs).

Table 4

**Breakdown of SDUs by region and district
(16BC SDU enumeration)**

Region and district	Successful enumeration		Imputation				Total	
			Macro-editing		FoQ			
	(a)		(b)		(c)		(d) = (a) + (b) + (c)	
	Number of SDUs	%	Number of SDUs	%	Number of SDUs	%	Number of SDUs	%
Hong Kong Island							18,080	100 %
Eastern	3,084	36.8 %	3,744	44.6 %	1,561	18.6 %	8,389	100 %
Wanchai	2,062	42.2 %	1,568	32.1 %	1,257	25.7 %	4,887	100 %
Central and Western	1,812	46.2 %	1,422	36.3 %	684	17.5 %	3,918	100 %
Southern (Note)								
Kowloon							52,688	100 %
Yau Tsim Mong	13,795	64.2 %	519	2.4 %	7,171	33.4 %	21,485	100 %
Sham Shui Po	9,711	62.9 %	350	2.3 %	5,388	34.8 %	15,449	100 %
Kowloon City	4,902	54.3 %	161	1.8 %	3,967	43.9 %	9,030	100 %
Kwun Tong	2,797	60.4 %	112	2.4 %	1,721	37.2 %	4,630	100 %
Wong Tai Sin (Note)								
New Territories							21,888	100 %
Tsuen Wan	2,549	38.8 %	2,069	31.5 %	1,956	29.7 %	6,574	100 %
Kwai Tsing	1,526	40.8 %	1,288	34.4 %	926	24.8 %	3,740	100 %
Tai Po	1,157	33.9 %	828	24.3 %	1,423	41.8 %	3,408	100 %
Yuen Long	2,538	75.2 %	226	6.7 %	610	18.1 %	3,374	100 %
North	1,840	56.5 %	395	12.1 %	1,022	31.4 %	3,257	100 %
Tuen Mun (Note)								
Sha Tin (Note)								
Islands (Note)								
Sai Kung (Note)								

Source: Audit analysis of C&SD records

Note: Figures were not disclosed in the 16BC Thematic Report on SDUs due to precision consideration.

Remarks: Among the figures quoted in the above table, the 16BC Thematic Report on SDUs only reported the total estimated number of SDUs by region and district (i.e. only figures in column (d)). In September 2019, C&SD informed Audit that it had made substantial inputs in the entire estimation process (i.e. imputation), making good use of the results of the special frame updating exercise on SDUs (see paras. 2.23 and 2.27), which was completed successfully under a sound quality assurance framework.

2.27 ***Sampling frame (i.e. FoQ).*** The purpose of identifying quarters with SDUs in FoQ before 16BC was to help devise an appropriate sample design for enumerating SDUs and facilitate the effective allocation of fieldwork assignments of 16BC (see para. 2.22). According to C&SD, a complete FoQ (i.e. covering all quarters in Hong Kong) was necessary to ensure full coverage of the target population to be sampled for a sample survey, but FoQ needed not contain complete information of all SDUs (i.e. each and every SDU to be clearly labelled in the corresponding record of quarters in FoQ) in order to estimate the number of SDUs and the characteristics of persons living therein. Through random sampling (see Note 25 to para. 2.23), both quarters known to be SDUs before the survey and those not known could be covered in the sampling process. In all sample surveys (including population censuses/by-censuses), most attributes (e.g. ethnicity and whether being a single parent) were estimated without the need for the sampling frame to contain complete information about them.

2.28 ***Special frame updating exercise on SDUs.*** According to C&SD, other than CCF recipients, a significant number of CSSA recipients (who were outside the purview of CCF) also lived in SDUs. As mentioned in paragraphs 2.22 and 2.23, based on CCF information provided by HAB and CSSA information provided by the Social Welfare Department, in 2015, C&SD conducted a special frame updating exercise on SDUs for 16BC, covering 5,000 selected buildings in 18 districts. The results of the updating exercise were used to update the quarters with SDUs in FoQ (see Figure 1 in para. 2.25).

2.29 ***Non-sampling errors (Note 29).*** According to C&SD, non-sampling errors in the 16BC SDU enumeration mainly arose from the following:

- (a) the alterations made in some SDUs were illegal. Although C&SD had emphasised the confidentiality of respondent information, some households living in SDUs were not willing to participate in 16BC;

Note 29: *Sampling errors are inherent in every sample survey where statistics are obtained from a sample. They refer to the variation of a sample estimate if samples are drawn repeatedly using the same method, dependent on the sample size and sampling method. Non-sampling errors are not related to sampling variability. Examples of non-sampling errors include incomplete geographical records and maps, careless omission of households or persons in the enumeration, and failure to gain full co-operation of households in providing accurate answers. They could affect the total count of the population, households and quarters, breakdown figures of individual characteristics and cause bias in the results.*

- (b) access to some SDUs were denied by a gate or a solid door located outside a group of SDUs; and
- (c) enumerators were mostly higher education students with limited experience in identifying SDUs. Newly identified SDUs needed to be verified subsequently by experienced C&SD field officers.

According to C&SD, such non-sampling errors were mainly tackled through publicity and training of enumerators. For publicity, C&SD reassured respondents through various channels that information pertaining to individual households and persons obtained during 16BC would be kept confidential and would not be transferred to any third parties, including other government departments, for enforcement actions. For training of enumerators, the definition of SDUs, common characteristics of SDUs, and treatments of known, suspected and newly discovered SDUs, were set out in the enumerators' manual.

2.30 ***Limitation of THS on SDUs.*** C&SD completed two THSs on SDUs in 2014 and 2015 (which were commissioned by THB) and the 16BC SDU enumeration in 2016 (see paras. 2.19 to 2.21). In September 2017, to facilitate the consideration of the way forward of SDU estimation for the annual update of LTHS in 2018 and beyond, THB discussed with C&SD the possibility of conducting a new round of THS or some sort of on-site surveys/investigations (albeit in sparser intervals) in between population censuses/by-censuses. Noting that the main objective of conducting THSs on SDUs was to obtain information on the number of households living in SDUs for housing demand projection under LTHS and that there were technical constraints of conducting further rounds of THSs in terms of consistently low response rate, statistical reliability, operational cost and availability of experienced contractors, THB informed C&SD in January 2018 that they agreed with C&SD's recommendation to adopt a hybrid approach in estimating SDUs, as follows:

- (a) enumeration of SDUs should be included in future population censuses/by-censuses; and
- (b) a desktop-estimate approach, based on the trend data from the results of 16BC and past THSs on SDUs, as well as relevant information on the construction and demolition of buildings while making reference to information on new SDUs from the on-going GHS and other surveys (for reviewing the validity of year-on-year growth rate of SDUs in general), would be adopted during the intercensal period instead of conducting THSs.

In September 2019, C&SD informed Audit that population censuses/by-censuses were better means to collect data on SDU households compared with THSs in view of the full coverage of all private quarters in Hong Kong and the much larger sample size. In fact, 16BC supported more refined analyses than THSs. For example, statistics on the number of SDUs for 12 districts could be released based on the results of 16BC (see Table 4 in para. 2.26) whereas only those for broad regions could be released in THSs (e.g. Hong Kong Island, Kowloon and the New Territories in the second THS on SDUs in 2015). Having regard to policy needs and professional and operational considerations, the availability of relatively more precise SDU estimates from population censuses/by-censuses at 5-yearly intervals which served as benchmark data, together with annual updates from model-based estimates, was considered as the optimal option.

Need to closely monitor the progress of FoQ updating exercise on SDUs

2.31 According to C&SD, the sample selection for 16BC was conducted in the fourth quarter of 2015. After the cut-off of FoQ for sample selection in 16BC, C&SD continued its efforts to update FoQ. However, Audit noted that there were no records showing that further FoQ updating exercises on SDUs had been conducted using the selected data fields of some 63,000 applications for the second launch of the one-off living subsidy programme obtained by C&SD from HAB in May 2016 (Note 30). In response to Audit's enquiry, in September 2019, C&SD informed Audit that since the samples for 16BC had been drawn by the time such information was obtained from HAB, the information was used to facilitate quality assurance and imputation in 16BC SDU enumeration. For quality assurance, the CCF data was used to provide information on the geographical distribution of SDUs, which could help verify to some extent the reasonableness of the 16BC results. As for imputation, NC cases in areas/buildings with high concentration of CCF cases were more likely to be imputed as SDUs (see para. 2.25(a)).

2.32 As of March 2019, there were only about 46,500 (i.e. about 50% of the number of SDUs reported in 16BC Thematic Report on SDUs) known SDUs

Note 30: *According to HAB's website, there were also some 67,000 applications received for the third launch of the one-off living subsidy programme in 2016. However, there were no records showing that C&SD had requested HAB to provide similar information relating to SDUs (see para. 2.22(a)).*

(Note 31) recorded in FoQ. According to C&SD, the prevalence of SDUs was highly correlated with the building age. As an FoQ updating exercise on SDUs, C&SD has planned to visit all private residential buildings aged 40 years or more in built-up areas (covering 22,000 buildings and 410,000 quarters) in 5-year cycles. In September 2019, C&SD informed Audit that with the creation of time-limited field officers for supporting the 21C operation work, the FoQ updating exercise on SDUs would be completed before the conduct of 21C. Given the substantial amount of work (i.e. visiting 22,000 buildings and 410,000 quarters), C&SD needs to closely monitor the progress of the FoQ updating exercise on SDUs and take appropriate actions to bring the SDU data in the sampling frame up-to-date to facilitate sample selection in the coming 21C.

Heavy reliance on imputation

2.33 As reported in the 16BC Technical Report, the overall response rate for 16BC was 79% (see Figure 2 in para. 2.25). According to C&SD, of the 299,300 sampled quarters in 16BC, 5,440 SDUs were identified through successful enumeration. Regarding the basis for deriving the 92,656 estimated number of SDUs reported in the 16BC Thematic Report on SDUs (see para. 2.26), only 50,623 (54.6%) were derived from successfully-enumerated cases (i.e. the 5,440 cases) (Note 32). For the remaining 42,033 (45.4% of 92,656) SDUs not derived from successfully-enumerated cases, 12,849 (13.9% of 92,656) were based on imputation by macro-editing using auxiliary data of 16BC or other sources, and 29,184 (31.5% of 92,656) were based on imputation using SDU data in FoQ directly (see Figure 3), as follows:

- (a) *Using auxiliary data of 16BC or other sources.* Some quarters were determined to be SDUs by making reference to information collected during the unsuccessful field enumeration or market intelligence (e.g. news reports concerning SDUs). The information collected during field enumeration included observations by enumerators on the structure of the quarters using “side” information (e.g. observing door bells, electricity meters and mail

Note 31: *According to C&SD, known SDUs were those with exact locations and numbers ascertained by C&SD field officers or contractors. Suspected SDUs were those with exact locations and numbers unconfirmed (e.g. due to access denial).*

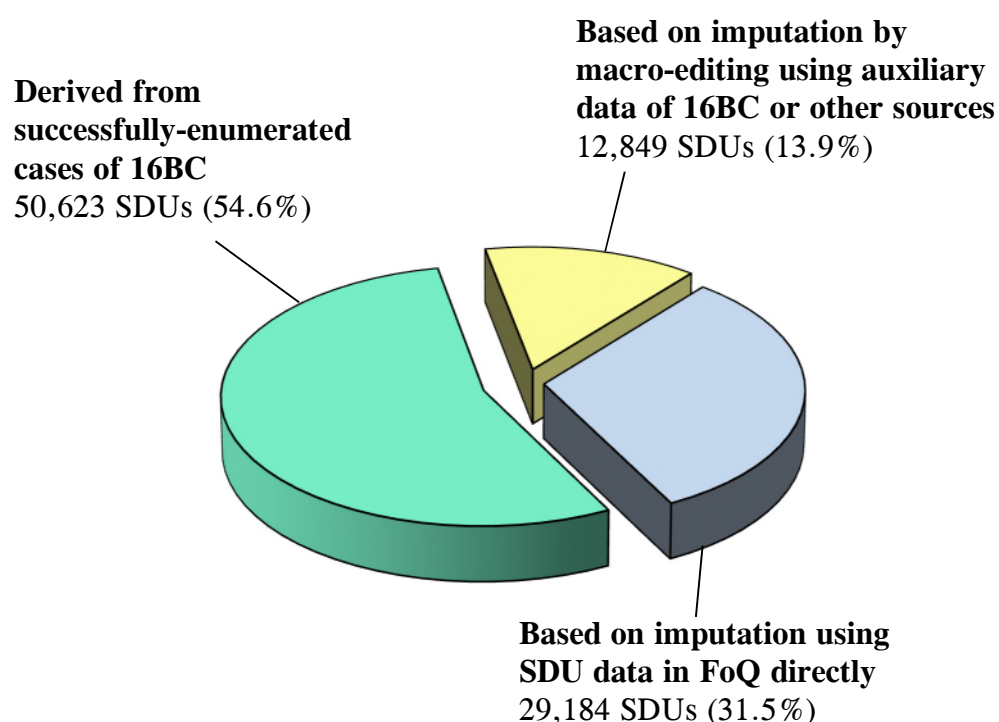
Note 32: *According to C&SD, it was not possible to compile the response rate of the 16BC SDU enumeration because the total number of SDU households in the sample (see Figure 2 in para. 2.25) was not known.*

boxes, and information provided by neighbours and security guards) (Note 33); and

- (b) **Using SDU data in FoQ directly.** Some other quarters that could not be enumerated during 16BC were counted as SDUs for compilation of the 16BC Thematic Report on SDUs based on the information on SDU status (i.e. SDU data) of quarters covered in FoQ. Such data was sourced from the special frame updating exercise on SDUs, THSs on SDUs, feedback from other household surveys and subsequent updates from other sources (see paras. 2.22, 2.23 and 2.31).

Figure 3

**Analysis of the 92,656 estimated number of SDUs
in 16BC Thematic Report on SDUs**



Source: C&SD records

Note 33: Enumerators were required to submit a feedback form if the structure was different from what was recorded in FoQ as at the position of sample selection. The discrepancies reported would be followed up by C&SD field officers in subsequent field visits.

2.34 Upon Audit's enquiry, in September 2019, C&SD informed Audit that:

- (a) the use of administrative data in statistical surveys (including but not limited to imputation) was a common practice in the international statistical arena. FoQ could be regarded as an administrative source as it included administrative returns from various B/Ds, feedback from other household surveys as well as results of routine updating by C&SD field officers. In particular, the comprehensive special frame updating exercise on SDUs (see para. 2.28) conducted under the close monitoring of C&SD had provided solid inputs for imputing the SDU status of NC cases. In sum, imputation using SDU data in FoQ was a legitimate and effective statistical method;
- (b) the main purposes of updating SDU status of quarters covered in FoQ were to:
 - (i) help devise a more efficient sample design for enumeration of SDUs by enabling more refined stratification in the sampling process, thereby improving the precision of the SDU estimates; and
 - (ii) facilitate more effective allocation of fieldwork assignments as unknown SDUs might lead to unexpected surge in workload; and
- (c) for the coming 21C, C&SD would explore the wider use of administrative data to enhance enumeration of SDUs, including updating the quarters with SDUs in FoQ and imputation of SDU status for NC cases.

2.35 *Need to take measures to improve the success rate of SDU enumeration.*

Audit notes that successfully-enumerated SDU cases provide the most reliable and up-to-date data for estimating the number of SDUs. According to C&SD, the response rate of surveys on SDUs has all along been relatively low compared to other household surveys. One major reason is that households living in SDUs which are not legally constructed might tend to avoid participation in surveys despite assurance of data confidentiality. In Audit's view, paying more visits to NC quarters suspected to be SDUs as observed in field visits during the enumeration period, preferably by a variety of means on different dates and at different times, should improve the success rate of SDU enumeration. C&SD may encounter similar problems in the enumeration of SDUs in the coming 21C as it will be held in a shorter enumeration period (i.e. about 5 weeks as compared with 15 weeks in the 2015 THS on SDUs). Given the

short data collection period (about 5 weeks), to collect more reliable and up-to-date data on SDUs, C&SD needs to take measures to improve the success rate of SDU enumeration under population censuses/by-censuses as far as practicable (e.g. improving manpower planning for SDU enumeration to be conducted in the coming 21C to allow for more re-visits within a short survey period and stepping up publicity efforts to raise public awareness of the benefits of SDU enumeration).

Audit recommendations

2.36 **Audit has *recommended* that the Commissioner for Census and Statistics should:**

- (a) closely monitor the progress of the sampling frame (i.e. FoQ) updating exercise on SDUs and take appropriate actions to bring the SDU data in the sampling frame up-to-date to facilitate sample selection in the coming 21C; and**
- (b) take measures to improve the success rate of SDU enumeration under population censuses/by-censuses as far as practicable.**

Response from the Government

2.37 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that C&SD will:

- (a) closely monitor the progress of the FoQ updating exercise on SDUs to facilitate an efficient sample design for enumerating SDUs in the coming 21C, and explore the wider use of administrative data to help identify new SDUs; and**
- (b) explore further measures to improve the success rate of SDU enumeration under population censuses/by-censuses as far as practicable.**

Monthly Retail Price Survey

2.38 ***Purpose of MRPS.*** The main purpose of conducting MRPS is to regularly collect price data and related information of a fixed basket of consumer goods and services commonly purchased by general households from local retail outlets (e.g. market stalls) and service providers (e.g. tour companies) for the compilation of the Consumer Price Index (CPI).

2.39 ***Compilation of CPI.*** According to C&SD, compilation of CPI in Hong Kong follows closely the international standards (Note 34). Hong Kong's CPI is a base-weighted type of price index compiled to reflect changes in the price level of consumer goods and services generally purchased by households. It is set to be 100 for the base period, and takes a different value for other periods depending on changes in the price level. Changes in CPI are widely used as an indicator of the inflation or deflation affecting consumers. The Government also uses CPI as an indicator or analytical tool to formulate and monitor its policies.

2.40 In September 2019, C&SD informed Audit that salient features of CPI include:

- (a) CPI shows the relative change over time in the overall cost of a specified and fixed (in terms of quality and quantity) basket of consumer goods and services, therefore reflecting pure price change. On average, about 10,000 visits and 1,000 telephone calls are made to some 4,000 retail outlets and service providers each month to collect about 47,000 price quotations in MRPS;
- (b) the consumer goods and services covered in CPI basket (CPI items) are based on the expenditure patterns of households on different CPI items purchased through different types of retail outlets in the base period, which

Note 34: *According to C&SD, the prevailing international recommendations on compilation of CPI are promulgated in the "CPI Manual: Theory and Practice", which was released by IMF jointly with the International Labour Organization, the Organisation for Economic Co-operation and Development, Eurostat, the United Nations Economic Commission for Europe, and the World Bank in 2004.*

form the expenditure weights for compiling the index series. Relevant information is primarily obtained through HES (Note 35);

- (c) the expenditure weights are updated every five years with reference to the latest expenditure patterns of households. A new series of CPI will be compiled based on the updated expenditure weights, with historical figures retrospectively computed to maintain comparability of the index series. This process is called CPI rebasing; and
- (d) three separate CPI series are compiled to reflect the price changes faced by households in different expenditure ranges (CPI(A), CPI(B) and CPI(C) with average monthly household expenditure of \$5,500 to \$24,499, \$24,500 to \$44,499 and \$44,500 to \$89,999 respectively at 2014/15 prices). A Composite CPI is also compiled based on the overall expenditure patterns of households (with average monthly household expenditure of \$5,500 to \$89,999 at 2014/15 prices).

Need to continue to keep in view the latest international developments in the CPI compilation standards

2.41 According to C&SD, at present, price quotations are collected from local stores/online retailers but not from non-domestic stores/online retailers. C&SD explained that the prevailing international standards stipulated that only purchases from domestic market should be covered in CPI compilation, while those from non-domestic markets should not be included.

2.42 In July 2018, IMF issued a consultation draft to update the CPI Manual (see Note 34 to para. 2.39). According to C&SD, it suggested, among others, the inclusion of expenditures made on goods and services purchased via the Internet from Internet-based outlets which were based/registered abroad as a “special consideration”

Note 35: *The objective of HES is to collect up-to-date information on the expenditure patterns of households for updating the expenditure weights used in compiling CPI. It is conducted by C&SD once every five years and the last round of HES was conducted in 2014/15.*

in compiling CPI for the local economy (Note 36). According to C&SD, whether IMF's suggestion will be incorporated into the updated CPI Manual is not yet confirmed. Nevertheless, C&SD has already been preparing for the potential changes. In fact, C&SD has been providing comments to IMF as early as in February 2018 when the preliminary draft chapters were first revealed. To prepare for the possible changes in the next CPI rebasing cycle, C&SD has already enhanced the questionnaires for the current round of HES being conducted in 2019/20 to collect more comprehensive information on online purchases from the households. Audit notes C&SD's preparatory work and considers that with the growing popularity of online purchases from Internet-based outlets, C&SD needs to continue to keep in view the latest international developments in the CPI compilation standards.

Need to continue to take into account changes in expenditure patterns in next CPI rebasing exercise

2.43 According to the MRPS Manual, individual retail outlets and service providers are selected for collecting price quotations having regard to the popularity of the outlets (e.g. whether the location is in main streets/shopping arcades and frequently patronised by many consumers). Audit noted that there had been changes in mode of purchases since the last CPI rebasing exercise in 2014/15:

- (a) more purchases were made online in addition to retail shops. In recent years, there were also new physical stores operated by local online retailers; and
- (b) as mentioned in paragraph 2.38, the CPI basket included consumer goods and services commonly purchased by general households from local retail outlets. While based on the results of the 2014/15 HES, six obsolete items (namely fax machine, video recorder, roller blade/ice-skate, blank recording media, pomfret-live and video rental) were removed from the CPI basket, Audit noted that the prevailing 2014/15 CPI basket (containing

Note 36: *According to C&SD, specifically, in the latest version of the draft manual released by IMF in September 2019, it was once again stated that "Strictly speaking, under the domestic concept, these expenditures (on Internet purchases) would not be included because they could be defined as expenditure abroad. In practice, however, applying the domestic concept considering Internet purchases requires a broader interpretation. The nature of Internet purchases requires a different way of thinking and special consideration, especially regarding the domestic concept."*

984 CPI items since 2014/15) included eight CPI items (Note 37) which might have become unpopular as of June 2019. For these eight CPI items, over 60% of the price quotations were without updated price data in the past 12 months.

2.44 Regarding the audit findings in paragraph 2.43, in September and October 2019, C&SD informed Audit that:

- (a) whether to include/delete a new/obsolete CPI item or type of outlet was part of the prevailing CPI rebasing mechanism, which had been practised for many years;
- (b) the eight CPI items identified by Audit only accounted for a minimal share of 0.07% of all expenditure weights;
- (c) the CPI basket and the corresponding expenditure weights would be updated based on results of the 2019/20 HES according to C&SD's prevailing compilation framework; and
- (d) as household expenditure patterns changed only gradually, the current mechanism to update the basket and the weights every 5 years, which was in line with the international standards, was considered appropriate.

Audit notes C&SD's mechanism in reviewing the CPI items every 5 years in order to take into account the changes in expenditure patterns and popularity of goods and services, and considers that in the upcoming 2019/20 CPI rebasing exercise, C&SD needs to continue with the existing CPI rebasing mechanism so as to incorporate the emerging trends mentioned in paragraph 2.43 in the upcoming 2019/20 rebasing exercise.

Note 37: *These CPI items were: (a) sea perch – live; (b) sea perch – fresh/chilled; (c) mangrove red snapper – fresh/chilled; (d) edible tilapia – fresh/chilled; (e) pigeon – live/fresh/chilled; (f) electronic dictionary; (g) decorative items – wall painting/poster; and (h) school fees – French.*

Audit recommendations

2.45 **Audit has *recommended* that the Commissioner for Census and Statistics should:**

- (a) **continue to keep in view the latest international developments on whether to include online purchases from non-domestic retailers in CPI compilation; and**
- (b) **continue with the existing CPI rebasing mechanism to take into account the changes in expenditure patterns and popularity of goods and services, including the changes mentioned in paragraph 2.43 in the upcoming 2019/20 CPI rebasing exercise.**

Response from the Government

2.46 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that C&SD:

- (a) has made efforts in reviewing the CPI items in the rebasing exercise to take into account changes in expenditure patterns and popularity of goods and services. Emerging trends, such as those mentioned in paragraph 2.43, will be reflected in the 2019/20-based CPI series; and
- (b) will also keep in view the latest international developments in the CPI compilation standards.

Implementation of a department-wide computerised time-log system

2.47 ***Department-wide computerised time-log system.*** As mentioned in paragraphs 1.9 and 1.10, the Task Force completed the review of the authenticity of statistical data and the existing data quality assurance mechanism in March 2013 and made a number of recommendations to address the related issues. While acknowledging that there was a need for compiling time logs for monitoring and supervising the fieldwork carried out by C&SD field officers, the Task Force noted that there were diversified and conflicting views from field officers on the time-log

system. In May 2014, the consultant (see para. 1.11) recommended the automation of field time recording process through deployment of the Computer-Assisted Personal Interviewing (CAPI), supported by a consolidated time-log system to capture field-time-activity records for ensuring cost-efficiency and work-effectiveness. In September 2015, DCQA-GHS (Note 38) was informed that C&SD would study the feasibility of using CAPI to capture the field-time-activity records. In October 2016, the Independent Commission Against Corruption completed an assignment study on C&SD's supervision of data collection duties. Among others, the study found that:

- (a) C&SD's monitoring system in terms of outdoor attendance and data quality control was much labour intensive, relying a lot on manual inputs (e.g. cross checking of daily field itineraries against time logs and various data verification). With the vast number of entries involved each day, the manual records might be susceptible to human errors, inadvertent or otherwise; and
- (b) to reduce the risk of undue discretion in the monitoring of data collection duties, it was recommended that C&SD should consider:
 - (i) using electronic devices in field visits (e.g. CAPI devices such as the mobile tablets used in 16BC) to enable real time monitoring of the physical locations as well as activities of field officers (e.g. through analysing the survey data captured at real time) both on-site and from the office; and
 - (ii) computerising the attendance records, field itineraries and time logs to facilitate timely reconciliation of these records.

2.48 In December 2017, DCQA-GHS was informed that CAPI with some built-in time-logging functions had been implemented in 16BC and MRPS. Moreover, the feasibility of the wider application of CAPI would be considered in the next ISS study. In May 2018, in response to the Independent Commission Against Corruption's recommendation of computerising the time-logging procedures, C&SD said that a new ISS study had commenced in December 2017 (see para. 4.5), which

Note 38: *After the completion of the consultancy study on the fieldwork management system in May 2014, DCQA-GHS (see para. 2.4) also took up the role of coordinating the recommendations of the consultancy study, including the implementation of a computerised time-log system.*

would explore the deployment of electronic devices for fieldwork and the department-wide computerisation of fieldwork management.

Need to draw up a strategy in implementing a department-wide computerised time-log system

2.49 More than five years have elapsed since the consultant recommended implementing a computerised time-log system for C&SD field officers in May 2014. In response to Audit's enquiry, in August 2019, C&SD said that it had applied to the Office of the Government Chief Information Officer (OGCIO) for \$8.1 million to conduct a feasibility study on the use of mobile devices in data collection and fieldwork management. According to C&SD, subject to funding approval tentatively by June 2020, the feasibility study was planned to commence in July 2020 and targeted for completion in February 2022. Audit considers that C&SD needs to draw up a strategy in implementing a department-wide computerised time-log system, taking into account the result of the feasibility study and the views of field officers. C&SD should also remind its staff to regularly report to DCQA-GHS the progress of the implementation of the department-wide computerised time-log system.

Audit recommendations

2.50 **Audit has recommended that the Commissioner for Census and Statistics should:**

- (a) **draw up a strategy in implementing a department-wide computerised time-log system for monitoring and supervising the fieldwork carried out by C&SD field officers, taking into account the result of the feasibility study and the views of field officers; and**
- (b) **remind C&SD staff to regularly report to DCQA-GHS the progress of the implementation of the department-wide computerised time-log system.**

Response from the Government

2.51 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that:

- (a) following the recommendation of the review of the ISS completed in early 2019, C&SD is seeking funding under the established mechanism for conducting a feasibility study and will take into account the findings of the study in formulating a strategy on the implementation of a department-wide computerised time-log system; and
- (b) C&SD staff will continue to regularly report to DCQA-GHS the progress of the implementation of the department-wide computerised time-log system.

PART 3: POPULATION CENSUSES AND BY-CENSUSES

3.1 This PART examines the conduct of population censuses and by-censuses by C&SD, focusing on:

- (a) control of salary payments to TFWs (paras. 3.2 to 3.7);
- (b) provision of office accommodation and disposal of furniture (paras. 3.8 to 3.18); and
- (c) use of mobile tablets and power banks (paras. 3.19 to 3.29).

Control of salary payments to temporary field workers

3.2 The fieldwork of 16BC was conducted from 16 July to 2 August 2016 where TFWs were employed to visit approximately 300,000 selected quarters (i.e. about one-tenth of quarters in Hong Kong) to obtain information on the socio-economic characteristics of the population and on the geographical distribution. Other than the procurement for IT equipment and services, C&SD incurred departmental expenses of \$267 million in 16BC (Note 39). \$87 million (including payments for salaries and training allowances) were spent on hiring 7,120 TFWs, most of whom worked in field centres and ended their fieldwork on 2 August 2016. In 2017, during the audit of the financial statements of the Government's General Revenue Account for the year ended 31 March 2017, Audit sample checked the largest single payment of 16BC (i.e. \$74 million of salary payments to TFWs) and found that there were some inaccurate payments, missing supporting documents, improper certification on summary records for payments and mis-classification of expenses, which were not in compliance with the relevant government regulations (i.e. Standing Accounting Instructions (SAIs) and Financial and Accounting Regulations (F&ARs)) and C&SD's payment procedures (Note 40). C&SD agreed with the audit findings and took improvement measures to

Note 39: *These mainly included \$114 million for hiring temporary staff, \$89 million for personal emoluments of civil servants and \$32 million for office rent and rates.*

Note 40: *The procedures were incorporated into C&SD's internal guidelines on "Payment of Training Allowances, Honoraria and Travelling Expenses — TFWs of the Pilot Survey for 16BC" which were applicable to pilot and regular run of 16BC.*

ensure compliance with SAIs, F&ARs and the departmental guidelines (see Appendix C for details).

3.3 *Extended checking.* In light of the inadequacies identified in paragraph 3.2, in August 2019, Audit conducted an extended checking of the salary payments of \$74 million to TFWs deployed to work in the 19 field centres. Audit noted that according to C&SD's payment procedures (see Note 40 to para. 3.2), all attendance records of TFWs should be verified by an officer (Chief Enumerator or CSO) after the wage period and then certified for payment by another officer (CSO or SCSO). Audit examined the TFWs' attendance records and found that of the 1,442 attendance records, 884 (involving 4,730 TFWs) or 61% were verified and/or certified before the end of the wage period of 2 August 2016, verified/certified without dates, or without sign-off to prove proper verification/certification. For example, while the fieldwork ended on 2 August 2016, 111 attendance records (involving 714 TFWs) were verified in the period from 29 to 31 July 2016, and 290 (involving 1,770 TFWs) were verified and certified before 2 August 2016. As a result, the number of working hours of the concerned TFWs could not be fully substantiated but the TFWs were paid in full for the whole wage period.

3.4 In response to Audit's enquiry, in September 2019, C&SD said that:

- (a) of the 884 attendance records, 32 attendance records verified and/or certified with typo errors in dates or without dates, or without sign-off to prove proper verification/certification were due to careless mistakes; and
- (b) the remaining 852 attendance records verified and/or certified before the end of the wage period was considered acceptable. It was because according to the Employment Ordinance (Cap. 57), an employer should pay wages to an employee as soon as practicable but in any case not later than seven days after the end of the wage period. In the case of 16BC, 2 August 2016 was the end of the wage period and hence the Government was obliged to pay wages to TFWs by 9 August 2016, which was a Tuesday. While the seven-day period covered weekends and taking into account the time required by the bank to process the payments, C&SD staff had to complete their related work within two working days, in order to send payment information to the bank by 5 p.m. (i.e. close of business) on 4 August 2016, which was a Thursday. Given the tight schedule and the large number of some 7,000 TFWs involved, C&SD considered that the

Population censuses and by-censuses

process to verify and certify payments had to be carried out in advance, as follows:

- (i) on 28 July 2016, C&SD instructed field centre supervisors to, based on the up-to-date attendance/absence information of individual TFWs and an assumption that TFWs would be present for the remaining wage period, start to verify and certify TFWs' attendance records on 30 July 2016;
- (ii) on 30 July 2016, C&SD noted that a typhoon was approaching and the Tropical Cyclone Warning Signal Number 8 was predicted to be issued on the last day of the wage period, i.e. 2 August 2016. Therefore, from 30 July to 1 August 2016, C&SD reminded field centre supervisors to advance the wrap up process of the fieldwork, including verification and certification of attendance and payment records of TFWs for contingency sake;
- (iii) if there was any change in the attendance of TFWs after the advance verification/certification, C&SD required the relevant verifying and certifying field centre supervisors to make manual adjustments on the attendance records; and
- (iv) C&SD's clerical staff responsible for processing the payments checked the verified and certified records.

Need to strengthen control over salary payments

3.5 Audit considers that there is room for improvement regarding verification and certification of salary payments to TFWs, which was not in full compliance with the relevant government regulations (i.e. SAIs 1205(c), 1335(b) and 155(1)(b) — see Appendix C) and C&SD's payment procedures. C&SD needs to:

- (a) strengthen its control over salary payments to TFWs for implementation in 21C; and
- (b) require field centre supervisors to further certify that the TFWs' attendance records in the remaining wage period are in order, if advance

verification/certification of attendance records before the end of the wage period is considered necessary.

Audit recommendations

3.6 **Audit has *recommended* that the Commissioner for Census and Statistics should:**

- (a) **strengthen the control over salary payments to TFWs for implementation in 21C; and**
- (b) **require field centre supervisors to further certify that the TFWs' attendance records in the remaining wage period are in order, if advance verification/certification of attendance records before the end of the wage period is considered necessary.**

Response from the Government

3.7 The Commissioner for Census and Statistics agrees with the audit recommendations.

Provision of office accommodation and disposal of furniture

3.8 During 16BC, other than the common requirement of a General Office, Central Processing Area and Packing Site, C&SD deployed 19 field centres in all the districts. While 16BC involved detailed enquiries covering approximately 300,000 quarters (i.e. about one-tenth of quarters in Hong Kong), 21C will involve a complete headcount of the population covering 3,112,000 quarters. To meet the survey requirements, 56 field centres will be deployed for 21C.

3.9 ***General Office, Central Processing Area and Packing Site.*** To prepare for the conduct of 21C, C&SD has been working with the Government Property Agency (GPA) to identify suitable office accommodation to meet the requirements. In March 2018, C&SD submitted to GPA the preliminary accommodation

Population censuses and by-censuses

requirements of the 21C offices (a total of 7,657 square metres for General Office, Central Processing Area and Packing Site). Audit noted the following:

- (a) **General Office.** In November 2018, the Schedule of Accommodation was approved by GPA (with accommodation requirement of 2,346 square metres for the period from April 2019 to June 2023). In May 2019, GPA confirmed that the General Office, as well as one telephone centre (about 383 square metres) (i.e. one of the two telephone centres included in the planned Central Processing Area mentioned in para. 3.9(b) below), would be accommodated on 39/F and 40/F in the Immigration Tower after the office space was vacated by the Transport Department (amounting to 2,858 square metres). Due to the deferred completion of the new accommodation of the Transport Department, such premises could not be made available to accommodate the 21C General Office upon its establishment in April 2019. After ongoing discussion with the Architectural Services Department on the details of fitting-out works (Note 41), such as the setting up of a telephone centre, C&SD expected that the premises would be ready for use from September 2020 at the earliest. With the support of GPA, as an interim arrangement, C&SD has taken over two tenancy agreements de-leased from other B/Ds in Kwun Tong View as a temporary site of the General Office from September 2019 to September 2020 tentatively; and
- (b) **Central Processing Area and Packing Site.** In February 2019, the Schedules of Accommodation of the Central Processing Area and the Packing Site were approved by GPA (with accommodation requirement of 2,290 square metres and 2,229 square metres respectively for the period from October 2020 to late 2021). GPA also suggested that when the office areas in the Immigration Tower became ready for use as the General Office, C&SD might convert the office areas in Kwun Tong View into the Central Processing Area. Regarding the Packing Site, C&SD is liaising with GPA and the Education Bureau to identify any suitable government land/premises such as idle school premises and warehouse with tenancy agreement de-leased from other B/Ds for the purpose.

Note 41: *Such costs would be chargeable to the Capital Works Reserve Fund, which was set up for financing the Public Works Programme, acquisition of land, capital subventions and major systems and equipment items.*

3.10 **Field centres.** According to C&SD's Business Process Re-engineering Study Report issued in May 2019, C&SD reviewed the operation of 16BC with a view to identifying improvement opportunities for the conduct of 21C. The report revealed that, in 16BC, there were difficulties in hiring school premises as training and field centres due to numerous school activities during the summer holidays. For 21C, there will be 56 field centres scattered territory-wide. According to C&SD, existing schools are usually the major source of field centres of population census and by-census. As of August 2019, C&SD had taken or planned to take the following actions to secure adequate venues:

- (a) commencing discussion in May 2019 with associations of school heads to understand more about their concerns in hiring of school premises for field centres;
- (b) commencing liaison in May 2019 with the Hong Kong Examinations and Assessment Authority to avoid the 21C fieldwork schedule clashing with the release of the 2021 Hong Kong Diploma of Secondary Education Examination results;
- (c) discussing with the Education Bureau in December 2019 for:
 - (i) incorporating the 21C schedule into the 2020/21 school calendars to avoid clashing with critical school activities, such as the Pre-Secondary One Hong Kong Attainment Test; and
 - (ii) obtaining a list of schools which planned to conduct small-scale improvement works in 2021 so that earlier contact with these schools can be arranged to explore whether the schedule of small-scale works could be juggled to avoid clashing with the 21C fieldwork operation; and
- (d) exploring the use of venues of other B/Ds in November 2020, such as the Home Affairs Department and the Leisure and Cultural Services Department, as well as the campuses of tertiary institutions as contingency.

Need to continue exploring feasibility of developing a joint-user specialist and departmental building

3.11 ***Proposal of developing a joint-user specialist and departmental building (SDB).*** Owing to the temporary and periodic nature of office accommodation for previous population censuses/by-censuses, there was a need to carry out fitting out/reinstatement works and procure furniture and equipment for every population census/by-census. In Chapter 8 of the Director of Audit's Report No. 69 entitled "Provision of government office accommodation and utilisation of government sites" issued in October 2017, Audit recommended that the Registration and Electoral Office (REO) and C&SD, in consultation with GPA, should explore the feasibility of developing a joint-user SDB to meet their periodic accommodation requirements. In the Government Minute in response to the Report of the Public Accounts Committee No. 71 of February 2019, it was reported that: (a) REO and C&SD had taken positive steps to follow up the recommendation; and (b) they would continue to explore hand-in-hand the feasibility of developing a joint-user SDB to cater for their accommodation requirements, and in parallel, explore other possible options such as planning joint-user projects with other B/Ds or joining other SDBs under planning.

3.12 ***Progress in developing a joint-user SDB.*** Audit noted that C&SD had followed up the issue with REO on the development of a joint-user SDB. According to C&SD:

- (a) a meeting with REO was held in June 2018 to explore the feasibility of developing a joint-user SDB based on ballpark operational requirements;
- (b) C&SD also provided the accommodation requirements for operational use for 21C to REO in May 2019 with a view to exploring the possibility of identifying premises jointly with REO for meeting both parties' accommodation requirements. Concurrently, C&SD requested GPA to render advice on the way to pursue the development of a joint-user SDB with REO. GPA advised that it would be better to deal with the long-term accommodation requirements as recommended in Chapter 8 of the Director of Audit's Report No. 69 and separately deal with the short-term accommodation requirements for 21C (see para. 3.9);
- (c) in September 2019, a second meeting with REO was held to further explore the feasibility of developing a joint-user SDB and to exchange views on the two departments' periodic accommodation requirements in the coming

15 years with a view to linking REO's election cycles and C&SD's population censuses/by-censuses/major survey cycles. The information would facilitate reviewing whether the periodic accommodation requirements of the two departments would complement each other and warrant a joint-user SDB. The preliminary accommodation requirements would be submitted to GPA for advice (Note 42); and

- (d) apart from exploring the feasibility of developing a joint-user SDB with REO, C&SD also explored other means to provide permanent premises for population censuses/by-censuses. For instance, in January 2019, the possibility of becoming a joint user at the proposed ambulance depot on Chung Kong Road, Sheung Wan was explored. However, the space requirements for C&SD to conduct population censuses/by-censuses/surveys did not suitably fall under the purpose of the proposed project.

3.13 While joint-user development is not a new concept (e.g. the Kennedy Town Community Centre), the co-working space concept exploited in the commercial sectors has not been fully explored. Audit considers that C&SD needs to, in consultation with GPA, continue liaising with REO with a view to exploring the feasibility of developing a joint-user SDB to cater for the periodic accommodation requirements of REO and C&SD.

Need to improve furniture disposal process

3.14 *Disposal of furniture items after use in 16BC.* Upon closure of the offices and field centres in 16BC, there was surplus furniture requiring disposal. Such surplus furniture was disposed of through auctions organised by the Government Logistics Department (GLD). In the event, 2 lots of 424 furniture items were sold to the same successful bidder at \$280 in total, who inspected the items on 6 April 2018. On 10 April 2018, C&SD staff found that the successful bidder had posted photographs showing the furniture with logo and name of C&SD onto the Internet to invite buyers. As GLD's prior approval had not been obtained, the

Note 42: *In October 2019, GPA informed Audit that once REO and C&SD agree to develop a joint-user SDB, they may approach the relevant department(s) to take forward the site search process under the established mechanism.*

Population censuses and by-censuses

arrangement was in breach of GLD's Terms and Conditions of sales (Note 43). Upon request by C&SD, the successful bidder removed the photographs from the Internet and completed collection of the furniture items on 11 April 2018. GLD issued a warning letter for the breach of the Terms and Conditions of sales on the same day after investigating a media enquiry. On 16 April 2018, the media reported that the successful bidder re-sold the concerned furniture items and arranged for picking-up inside government premises.

3.15 According to C&SD, it planned to take the following improvement measures in 21C:

- (a) ***Refraining from procuring new items as far as possible.*** Subject to availability of storage space and funding, C&SD would consider keeping non-sizable excess items for future use. In addition, it would minimise procurement by reusing existing furniture within C&SD or left over by the previous occupant of offices;
- (b) ***Auctioning excess items in smaller lots.*** C&SD would arrange auctions to sell the excess furniture items in smaller lots. This would attract more buyers through reducing removal and storage costs; and
- (c) ***Exercising more stringent monitoring of successful bidders.*** C&SD would remind successful bidders not to take photographs of furniture items with the name of the Government and C&SD, and require collection of goods by the agreed time by designated persons or specified removal company.

To prevent recurrence of similar incidents, C&SD needs to be vigilant in ensuring that its furniture disposal process after completion of a population census/by-census is properly carried out.

Note 43: *Clause 15(a) requires successful bidder to submit to GLD for prior written approval all advertising or other publicity materials relating to the auction or goods purchased in connection with the auction wherein the Government's name is mentioned or language used from which a connection with the Government can reasonably be inferred or implied.*

Audit recommendations

3.16 Audit has *recommended* that the Commissioner for Census and Statistics should:

- (a) in consultation with GPA, continue to liaise with REO with a view to exploring the feasibility of developing a joint-user SDB to cater for the periodic accommodation requirements of REO and C&SD; and
- (b) be vigilant in ensuring that the furniture disposal process after completion of a population census/by-census is properly carried out.

Response from the Government

3.17 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that C&SD is reviewing with REO the long-term periodic accommodation requirements of the two departments to explore the feasibility of developing a joint-user SDB. The results will be submitted to GPA for advice once ready.

3.18 The Chief Electoral Officer has said that:

- (a) REO will, on the one hand, continue liaising with C&SD, in consultation with GPA, to further explore the feasibility of developing a joint-user SDB to cater for the periodic accommodation requirements of the two departments, and explore other possible options on the other hand; and
- (b) in September 2019, C&SD and REO held a second meeting to exchange views on the two departments' periodic accommodation requirements in the coming 15 years with a view to linking REO's election cycles and C&SD's population censuses/by-censuses/major survey cycles, and exploring the feasibility of whether the periodic accommodation requirements of the two departments would complement each other and warrant a joint-user SDB. The preliminary accommodation requirements would be submitted to GPA for advice in due course.

Use of mobile tablets and power banks

3.19 For 16BC, C&SD procured 6,101 mobile tablets at \$8 million and 5,388 power banks at \$0.8 million to facilitate TFWs to collect information during their face-to-face interviews with selected households. For 21C, based on an IT study completed in November 2018 (Note 44), C&SD has planned to procure approximately 17,000 mobile tablets and related accessories (e.g. power banks) at \$52 million.

Need to ensure proper implementation of security measures in 21C

3.20 *Loss of mobile tablets during 16BC.* There were two incidents of loss of mobile tablets during the 16BC face-to-face interview period. The concerned enumerators reported the loss cases (involving two mobile tablets) to field centre supervisors and the Hong Kong Police Force. Subsequently, C&SD tried to enable the remote data wiping function to delete the personal data stored in the two tablets. However, remote data wiping could not be effected on one of them. According to C&SD, there was a very low risk of data leakage because the data had been encrypted (Note 45) in the tablet and various data protection measures (Note 46) were in place. The involved respondents of such case were informed about what data were involved and what protection measures were in place. C&SD also reported the loss cases to the Office of the Privacy Commissioner for Personal Data (Note 47).

Note 44: *The objectives of the 21C IT study were to examine the technical requirements and financial implications of the proposed information systems.*

Note 45: *Decryption of the data was possible only after the tablet was connected to the 16BC server for authentication, but as soon as the tablet was connected to the Internet, the remote wiping function could be triggered. Such fail-safe mechanism was designed to protect the encrypted data in case remote wiping could not be effected, for one reason or the other.*

Note 46: *The data protection measures included: (a) keeping minimal amount of personal data in the mobile tablet as after completion of interviews, the data would be uploaded to the server and removed from the tablet; (b) the transient data (i.e. data of partially completed questionnaires) kept in the tablet were protected by encryption; and (c) the USB port of the tablet had been disabled. If there was an attempt to access the tablet through the USB device, the database would automatically be further encrypted and an SMS message would be sent to C&SD notifying the potential misuse.*

Note 47: *After considering the security measures taken at the material time and the remedial action, the Office of the Privacy Commissioner for Personal Data decided in February 2017 that it would not take further action.*

3.21 *Additional security measures in 21C.* In September 2019, C&SD informed Audit that:

- (a) on top of the data protection measures implemented in 16BC, C&SD has in its latest plan considered putting in place additional measures in 21C, such as installing timer-based wipe function in the tablet as the automatic data wiping will be triggered when the device is not logged on after a specified period of time, and providing a physical strap for fastening the tablet case and enumerator bag together as an additional means to prevent loss of mobile tablets; and
- (b) in respect of the responsibilities of field officers/TFWs in the safe custody of mobile tablets and protection of personal data, C&SD will continue to provide relevant training and guidelines to the field officers/TFWs as in 16BC.

3.22 Audit appreciates C&SD's plan to enhance the security measures of personal data stored in the mobile tablet for 21C. To prevent recurrence of similar incidents of loss of mobile tablets, C&SD needs to ensure proper implementation of the additional security measures planned for 21C.

Need to issue safety guidelines on proper use of power banks

3.23 *A power bank caught fire during 16BC.* C&SD provided some 5,000 power banks for use by TFWs. In July 2016, one of the power banks caught fire and a few fragments flew out in one of the field centres. While no injuries were reported, C&SD immediately stopped using all power banks.

3.24 Audit noted that the cause of power bank incident was not known. In Audit's view, it is important to avoid any misuse of power banks by field officers/TFWs in order to minimise the recurrence of similar incidents. With a view to enhancing their safety awareness of using power banks, C&SD needs to issue safety guidelines on proper use of power banks.

Need to continue to devise a disposal plan for serviceable mobile tablets

3.25 *Deployment of mobile tablets after use in 16BC.* According to the funding paper submitted to the Finance Committee of the Legislative Council in May 2014 seeking funding on acquiring computer equipment and services for 16BC:

- (a) C&SD would re-deploy the IT equipment to meet other operational needs in the department where appropriate after the completion of 16BC, with a view to maximising the utilisation of resources available; and
- (b) any surplus equipment would then be re-deployed to other B/Ds or donated to non-governmental organisations following the established government procedures.

Audit noted that for the 6,101 mobile tablets (at unit cost of about \$1,300) procured for 16BC, 111 (2%) were retained within the Government and 5,692 (93%) were subsequently donated to non-governmental organisations (see Table 5).

Table 5

Deployment of mobile tablets after 16BC

Status	Number	Percentage
Loss (see para. 3.20)	2	0.03%
Non-serviceable and destroyed	296	4.85%
Retained within Government	111	1.82%
Donated to non-governmental organisations	5,692	93.30%
Total	6,101	100.00%

Source: C&SD records

3.26 *Planned deployment of mobile tablets after use in 21C.* For 21C, C&SD has planned to procure approximately 17,000 mobile tablets. In view of the large quantity of the mobile tablets which may not be completely retained within the Government, C&SD explored with the Education Bureau in the early planning stage in June 2018 the option of donating mobile tablets to public sector schools for

educational purpose, in addition to non-governmental organisations. According to C&SD, after consulting School Councils, the Education Bureau replied that the education sector welcomed the proposal and the Education Bureau would help with the relevant liaison work in due course. The Finance Committee of the Legislative Council was informed in March 2019 of such additional means of deploying the mobile tablets for use by public sector schools after the completion of 21C.

3.27 Audit noted that the number of mobile tablets required would increase by 179% from 6,101 units in 16BC to approximately 17,000 units in 21C and C&SD had initiated actions on deploying such mobile tablets after use in 21C. C&SD needs to continue to work closely with relevant B/Ds in devising a disposal plan to ensure that serviceable mobile tablets, after completion of 21C, will be put to gainful use within the Government or donated to appropriate organisations as soon as possible.

Audit recommendations

3.28 Audit has *recommended* that the Commissioner for Census and Statistics should:

- (a) ensure proper implementation of the additional security measures planned for 21C to protect personal data stored in the mobile tablets;
- (b) issue safety guidelines on proper use of power banks with a view to enhancing field officers'/TFWs' safety awareness of using power banks; and
- (c) work closely with relevant B/Ds in devising a disposal plan to ensure that serviceable mobile tablets, after completion of 21C, will be put to gainful use within the Government or donated to appropriate organisations as soon as possible.

Response from the Government

3.29 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that:

Population censuses and by-censuses

- (a) in particular, she thanks Audit's appreciation of C&SD's plan to enhance the security measures of personal data stored in the mobile tablets for 21C; and
- (b) C&SD will ensure that the additional security measures planned for 21C to protect personal data stored in the mobile tablets will be properly implemented.

PART 4: IMPLEMENTATION OF INFORMATION SYSTEMS STRATEGY

4.1 This PART examines the implementation of ISS by C&SD for conducting statistical survey work and population censuses/by-censuses.

4.2 **Information systems.** According to C&SD, its work primarily involves four major activities, including pre-survey preparation, data collection, processing and analysis, and dissemination (see para. 1.15). As of September 2019, C&SD maintained different types of information systems for supporting these activities, which could be classified into departmental application systems and EUC systems/applications, as follows:

- (a) **Departmental application systems.** There were 38 application systems, comprising 4 infrastructure systems, 6 administrative and management systems, 11 departmental systems/platforms, 10 survey-specific systems and 7 other systems for population censuses and by-censuses; and
- (b) **EUC systems/applications.** There were over 80 EUC systems/applications (Note 48) developed for use by different user branches/sections.

C&SD's IT projects are funded under Head 710 (Note 49) of the Capital Works Reserve Fund (see Note 41 to para. 3.9). C&SD has set up an IT Steering Group (Note 50) to steer and monitor the progress of its IT projects.

Note 48: *According to C&SD, an EUC system/application usually comprises a group of similar applications/programmes written by the end-user. However, there is no standardised way on how to group similar applications/programmes and the counting rules for EUC systems/applications may vary across different end-users. The figure of over 80 EUC systems/applications was an estimate based on the individual figures reported by user branches/sections.*

Note 49: *The non-recurrent costs were met by Head 710 of the Capital Works Reserve Fund while the recurrent costs were met by C&SD.*

Note 50: *The IT Steering Group, chaired by the Deputy Commissioner for Census and Statistics, comprises all division heads as members.*

Implementation of 2004 Information Systems Strategy

4.3 **2004 ISS.** As mentioned in paragraph 1.16, to improve the overall productivity, service quality and cost-effectiveness of C&SD in managing its statistical processes and providing statistical services through effective use of IT, in May 2003, C&SD commenced an ISS study to formulate an ISS plan for implementation in five years from 2004 to 2009. In March 2004, the ISS study report (2004 ISS Report) was issued. It proposed a strategic IT programme of implementing 16 IT projects (Projects T1 to T16 — see Appendix D) at a total estimated cost of \$106.1 million to bring about significant benefits and transformation in the operation/service approach to C&SD, survey respondents and statistics users. After assessing the benefits and resources available, C&SD selected 9 priority projects (Projects T1, T4, T5, T6, T7, T10, T11, T15 and T16) for implementation and the funding bids for kicking off the projects were initially submitted to OGCI0 from 2005 to 2007.

4.4 **Completion of 9 priority projects.** According to the implementation plan of the 9 priority projects submitted to the IT Steering Group in March 2006, depending on the system complexities and departmental priority, the 9 projects were scheduled for commencement from April 2005 to September 2007 and planned to be completed fully or partially from December 2005 to December 2008. In the event, the 9 priority projects were completed between December 2005 and December 2016, eight years later than the original scheduled completion date of December 2008 (see Table 6). In response to Audit's enquiry on the implementation plan and actual rolled-out dates of the 9 projects, C&SD said in September 2019 that the prolonged completion of the projects was mainly due to the complexity of the departmental systems involved, manpower constraint and other external factors such as unexpectedly long tendering time.

Implementation of information systems strategy

Table 6

Implementation of 9 priority projects (April 2005 to December 2016)

IT project		Planned start date	Completion date			Actual expenditure (\$ million)
			Planned	Actual	Delay (Number of years)	
T1	Departmental output production system (Note 1) • Business Process Re-engineering Study • Feasibility Study • Implementation	August 2005 N/A N/A	April 2006 N/A N/A	April 2007 August 2009 December 2012	1.0 N/A N/A	11.7
T4	Data input sub-system	April 2005	December 2005	December 2005	—	1.2
T5	Conducting process review and feasibility study for data capturing	September 2005	June 2006	June 2006	—	2.0
T6	Departmental data capturing system using imaging technology (DCS) • Replacement by Online Questionnaire System (OQS — Note 2)	September 2007 March 2014	December 2008 August 2015	N/A December 2016	N/A 1.3	8.4
T7	Departmental CATI System	September 2007	December 2008	September 2016	7.8	9.5
T10	Developing a common data processing and analysis platform	January 2006	January 2007	August 2008	1.6	9.0
T11	Replacing Full Harmonised System	April 2007	December 2008	April 2010	1.3	9.1
T15	Knowledge Management Support System (Note 1) • Consultancy Study • Implementation	January 2006 N/A	June 2007 N/A	October 2010 January 2011	3.3 N/A	6.4
T16	Enhancing Departmental IT infrastructure	July 2005	March 2007	January 2009	1.8	8.9
Total						66.2

Source: Audit analysis of C&SD records

Note 1: The projects were planned to be implemented by stage. The planned start and completion dates referred to those of the first stage only. The project schedule of the subsequent stage(s) was to be drawn up after completion of the first stage.

Note 2: In 2012, noting that paper questionnaires would gradually be replaced by electronic questionnaires, C&SD decided to replace DCS by OQS (see para. 4.9(b)). The planned start and completion dates referred to the dates stated on the funding application form.

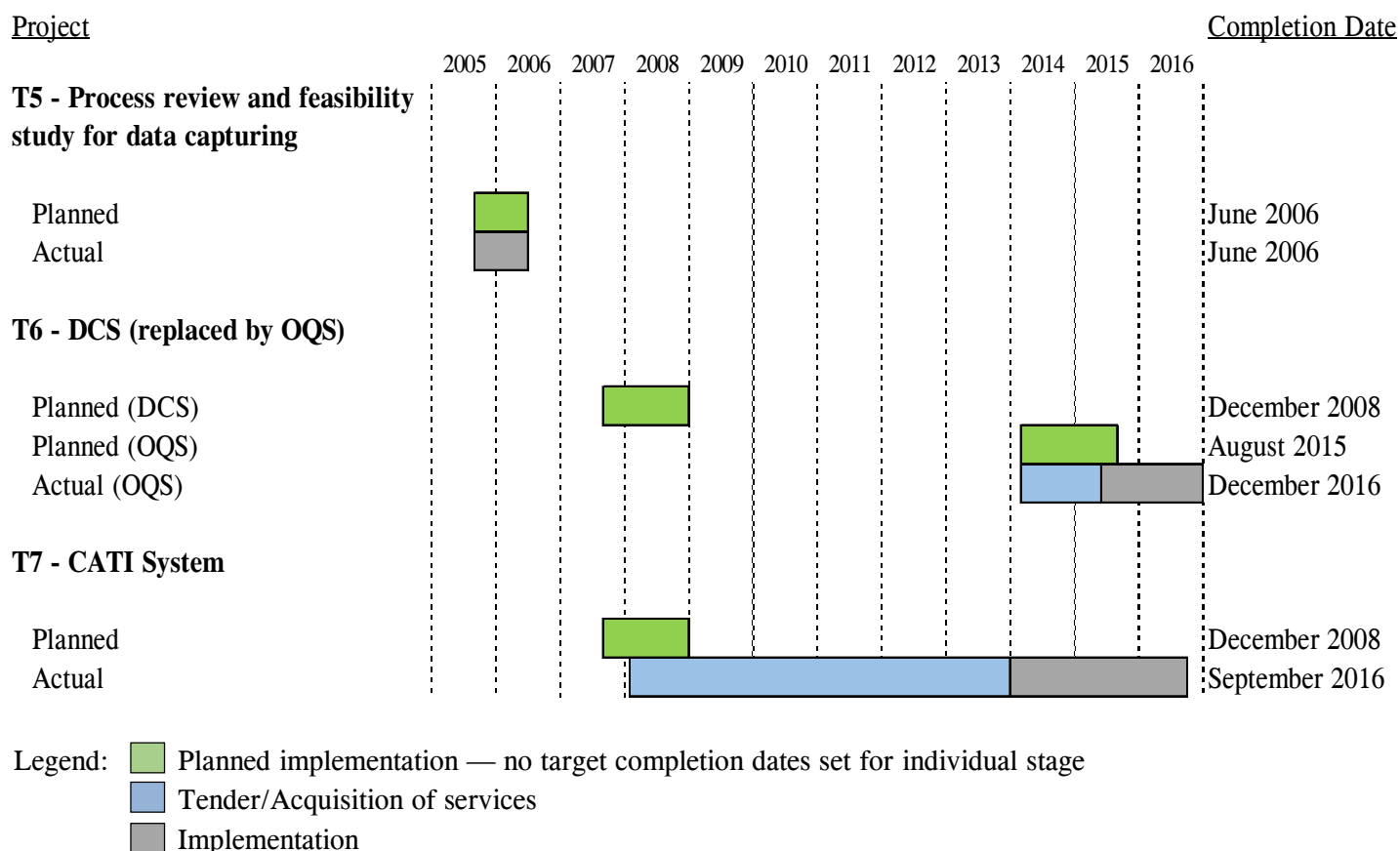
4.5 **2019 ISS.** After completing the 2004 strategic IT programme in 2016, C&SD commissioned an updated ISS study in December 2017 to map out a new ISS and to formulate a Departmental Information Technology Plan for the upcoming five to ten years. In January 2019, the final report (2019 ISS Report) was issued. The remaining 7 projects pending review upon the completion of the 9 priority projects would not be pursued. Instead, the IT requirements of these projects had been addressed in the 2019 ISS. The 2019 ISS Report recommended 11 new IT projects (including 4 IT projects with funding applications submitted in 2018-19) for implementation in five years from 2019 to 2024.

Long time taken in implementing two departmental data capturing projects

4.6 Of the 9 priority projects shown in Table 6, 7 projects (i.e. except Projects T4 and T5) had taken more time for implementation/completion as compared with the planned implementation dates (delays ranging from 1 to 7.8 years, averaging 2.6 years). In particular, C&SD's departmental data capturing system, namely Project T7 (CATI System), took the longest time for completion (i.e. 7.8 years after the planned completion date). The project was developed in synchronisation with Project T6 (DCS and subsequently replaced by OQS) after completion of Project T5 (Process review and feasibility study for data capturing). Figure 4 shows the implementation of Projects T5 to T7. Audit examination of Projects T5 to T7 revealed areas for improvement in project implementation as elaborated in paragraphs 4.7 to 4.10.

Figure 4

Implementation of Projects T5 to T7



Source: Audit analysis of C&SD records

4.7 **Benefits of data capturing system.** According to the 2004 ISS Report, the process review and feasibility study for departmental data capturing would be conducted under Project T5 before the commencement of Projects T6 and T7, which were inter-related and would be carried out concurrently. The implementation of departmental data capturing system would bring about the following benefits:

- (a) reducing the efforts of the manual data entry as much as possible by automating the data capturing process across different channels; and
- (b) enabling C&SD to centrally manage and maintain all statistical data.

4.8 ***Delay in implementing Projects T6 and T7.*** Project T6 (DCS) was developed to capture images of paper questionnaires for conversion to electronic data for further processing, while Project T7 (CATI System) was developed to use “Voice over Internet Protocol” and “Computer Telephony Integration” technologies to enable data collection through telephone interviews (Note 51). The new CATI System was designed to support surveys conducted by C&SD, aiming at improving the efficiency and quality of its survey activities. It would enable interviewers to carry out surveys through CATI System and input answers provided by respondents over the telephone into the System directly. It would also enable C&SD to centrally edit, code, manage/maintain survey data and to track the progress of data collection for surveys being conducted. In March 2013, in examining the Estimates of Expenditure 2013-14, a Member of the Legislative Council said that: (a) IT had been advancing at a tremendous pace; and (b) after a lapse of nine years (since the completion of the ISS study), C&SD had not yet fully implemented the recommendations in the 2004 ISS, and as a result some items might have become obsolete. He enquired about the slow progress and the reasons for continuing the implementation of IT projects based on the recommendations made nine years ago. C&SD replied that it had updated the recommendations made in 2004 in response to IT development. Regarding the two outstanding Projects T6 and T7, the system design of Project T7 had been updated and the scope of Project T6 was decided to be changed to implementation of OQS, having due regard to the latest IT development.

4.9 Audit examination revealed the following issues:

- (a) ***Project T7.*** Upon the completion of the feasibility study for CATI System under Project T5 in June 2006 (see Table 6 in para. 4.4), funding application was submitted to OGCIO in April 2007. In January 2008, OGCIO approved funding of \$9.933 million. However, a contract was only awarded in December 2013 (about five years later) due to:
 - (i) ***Long tender processing time.*** Audit noted that while a request for inviting tenders for CATI System was sent to GLD in May 2008, it took more than two years to commence inviting tenders for

Note 51: *There were two dedicated CATI Systems in use at the time, which were tailor-made for five specific surveys comprising: (a) GHS and three trade statistics related surveys; and (b) quarterly survey of employment and vacancies. Limited by the design of these systems, they could not be configured or did not have the flexibility to cater for use by other surveys.*

Project T7 in September 2010. According to C&SD and GLD, the long time taken was attributed to the need to review and revise the user requirements and tender documents to include additional functions in audio recording and voice logging; and

- (ii) ***Tender negotiation.*** In March 2011, C&SD sought GLD Tender Board's approval to cancel the tender because two out of the three tenders received did not meet the mandatory requirements at Stage 1 (Assessment of the Statement of Compliance with the Project Specifications) of the marking scheme for tendering evaluation and the tender price quoted by the only conforming offer at \$20.1 million had exceeded the pre-tender estimate of \$9.4 million by 113.8%. With the approval from GLD Tender Board, the tender was cancelled. C&SD conducted a market research to review the scope and estimate of the project, and updated the tender specifications to incorporate the latest requirements and trends in technological developments (Note 52). In November 2012, a re-tender was conducted and only one tender was received at a tender sum of \$26.2 million which had exceeded the pre-tender estimate of \$19.5 million by \$6.7 million (34.4%). With the approval from the Director of Government Logistics, GLD conducted negotiation with the tenderer for price reduction. After negotiation, the tenderer offered to reduce the tender price to \$21.7 million. With the approval of the Central Tender Board, in December 2013, C&SD awarded the contract at a total contract sum of \$21.7 million (comprising a one-off cost of \$9.5 million plus a ten-year recurrent cost of \$12.2 million). In September 2016, the system was rolled-out.

According to OGCIO Circular No. 2/2017, project delay has been the subject of concern by Members of the Legislative Council on various occasions, which will increase project risks such as change of personnel in contractor team and B/Ds, change in business requirements, delay in delivering intended benefits, and sometimes, increase in project costs. In

Note 52: *The changes in tender specifications included: (a) deletion of voice/screen recording functions; (b) removal of 144 workstations, telephone sets and writing pads allowing use of voice over Internet protocol and virtualisation technologies; (c) relaxing requirements on backup and recovery software; and (d) addition of a central repository to consolidate all returns from various e-channels to be developed in other IT projects.*

Audit's view, the long tender processing time was unsatisfactory. Late changes in the user requirements after funding approval should be avoided as far as possible as there were time and cost implications to the award of contract. To avoid tender cancellation and negotiation in implementing future IT projects, C&SD should ascertain the user requirements before seeking funding approval as far as practicable and make a more realistic estimation of pre-tender estimate for the purpose; and

- (b) **Project T6.** The feasibility study for DCS under Project T5 was completed in June 2006. Since C&SD intended to implement Projects T6 and T7 concurrently based on the recommendation in 2004 ISS, Project T6 had been kept in abeyance until Project T7 could be put to tender. In February 2011, C&SD planned to start the procurement process. However, pending the response of self-enumeration through the Internet in the 2011 Population Census, the process did not proceed. In August 2012, the IT Steering Group noted that Project T6, which aimed to process paper questionnaires, had not been implemented and there was an overwhelming good responses of householders to electronic version of data collection through the Internet in the 2011 Population Census. Considering that the application of imaging technology in processing survey questionnaires was less cost effective, the IT Steering Group then endorsed in principle the proposal of changing the scope of Project T6 from capturing image of paper questionnaires to web-based electronic data collection. In December 2012, C&SD submitted to OGCIO a funding application on implementing OQS for processing online questionnaires. In February 2014, OGCIO approved funding of the project with tentative completion in August 2015. In May 2015, C&SD awarded the contract under a Standing Offer Agreement (Note 53). In December 2016, OQS was rolled-out. However, Audit noted that there were limitations on the integration between the CATI System and OQS (see para. 4.10).

Note 53: *Government departments may invite proposals for individual work assignments from OGCIO's list of contractors in the Quality Professional Services, in this case Category 3 (Implementation and combined system development services), and select suitable contractors to undertake the assignments.*

Limitations on integration of departmental data collection systems

4.10 ***Need to enhance system integration for Projects T6 and T7.*** As mentioned in paragraph 4.6, Projects T6 and T7 were developed in synchronisation, and the two departmental systems were applied together to collect data for some statistical surveys. According to C&SD, Project T6 was used by respondents in self-reporting survey data through the Internet and Project T7 was used by field officers in performing telephone interview. Taking balance of the system complexity to implement very frequent data synchronisation and the business needs to have most updated data in both systems, a batch mechanism had been developed to perform recurrent data exchange. Under the batch mechanism, the enumeration statuses of individual survey cases (e.g. the case had been completed by respondents using OQS or by field officers using CATI System) were synchronised every 10 minutes between the two systems while the survey data were synchronised once per day in the late evening/midnight in order not to affect the daily operation of the two systems. However, according to the 2019 ISS Report (see para. 4.5):

- (a) the two systems did not allow real-time data integration (i.e. responses provided by respondents in one channel could not be instantaneously retrieved by another channel for taking follow-up actions); and
- (b) whenever there was a change in the questionnaire design, the changes had to be made to the supporting system for each data collection mode separately.

To streamline the workflow and reduce duplicate efforts, C&SD needs to take measures to enhance the integration between the two departmental data collection systems, taking into consideration technical feasibility and business needs.

Deficiencies of EUC systems/applications

4.11 Other than departmental systems, individual sections of C&SD had developed their own EUC systems/applications to manage and store raw data and statistics. Based on the findings of the 2019 ISS Report, in C&SD, there were over 80 EUC systems/applications for different surveys developed using various applications. Audit noted the following deficiencies in the EUC systems/applications:

- (a) ***Lack of common data standards across EUC systems/applications.*** EUC systems/applications operated like stand-alone “silos” and were developed

by individual branches/sections based on their own operational needs. Each branch/section had its own way of managing and storing data. As a result, format and definitions of same data elements varied across EUC systems/applications. To standardise the practices of managing and storing data across EUC systems/applications, C&SD needs to establish a common data model; and

- (b) ***Slow progress in migrating EUC systems/applications running on an obsolete programming language.*** As of August 2019, 37 EUC systems/applications developed in 2007 or before were running on an obsolete programming language, which had already reached its end-of-support since January 2015. As the obsolete programming language was a file-based database system where authorisation levels could not be assigned to different users owing to its architectural design limitation, the use of this programming language could not comply with the requirements specified in the Government's IT Security Guidelines (Note 54). Audit noted that since April 2008, C&SD had taken actions to migrate its EUC systems/applications from the obsolete programming language to other updated programming languages. However, as at the end of August 2019, while the migration of 49 EUC systems/applications had been completed and migration of 6 EUC systems/applications was in progress and planned to be completed by 2020, the migration of the other 31 EUC systems/applications was still outstanding (see Table 7). According to C&SD, the migration of these systems/applications would proceed after the planned implementation of the IT project recommended in the 2019 ISS Report on adoption of modular data processing and analysis approach in economic surveys in 2023. In Audit's view, C&SD needs to formulate a strategy to complete the migration of these EUC systems/applications in a more timely manner.

Note 54: *According to the IT Security Guidelines of December 2016 issued by OGCIO, an information system should have logical access control including "upon user authentication, authorisation to access will be granted by mapping the user/group of users to the system resources".*

Table 7

**Migration of EUC systems/applications
running on an obsolete programme language
(August 2019)**

Status of migration	Number of EUC systems/applications
Completed	49
In progress	6
Not yet commenced	31
Total	86

Source: C&SD records

4.12 Furthermore, according to the Government's Practice Guide for Security Risk Assessment and Audit (SRAA — Note 55), SRAA shall be conducted periodically for existing systems to discover and correct security issues. In this connection, Audit noted that C&SD conducted SRAA of two EUC systems/applications in 2012-13, which found that there was no application audit trail for logging of both successful/failed access in both systems and no access control implemented at an application level for one of the two systems. In the event, the SRAA recommended some enhancement measures (e.g. establishing periodic log review mechanism). In September 2019, C&SD informed Audit that while system migration was planned, C&SD had also taken measures to enhance the security of EUC systems/applications. The measures included storage of survey data in encrypted network folders with restricted access to authorised officers only and strengthening the protection of classified documents to avoid unauthorised persons from opening and viewing them. C&SD also planned to set up a secure and isolated computing environment where data would be protected to avoid being accessed/processed by unauthorised applications and being copied out externally. However, since the SRAA was conducted in 2012-13, only one EUC system had been covered in the SRAA conducted in 2018-19. C&SD needs to include all EUC systems/applications in future SRAAs and critically review the systems/applications

Note 55: *According to the Practice Guide for SRAA of November 2017 issued by OGCIO, Security Risk Assessment shall be conducted at least once every two years or upon major changes and Security Audit shall be conducted periodically.*

to ensure that they meet the security requirements as specified in the Government's IT Security Guidelines.

Audit recommendations

4.13 Audit has *recommended* that the Commissioner for Census and Statistics should:

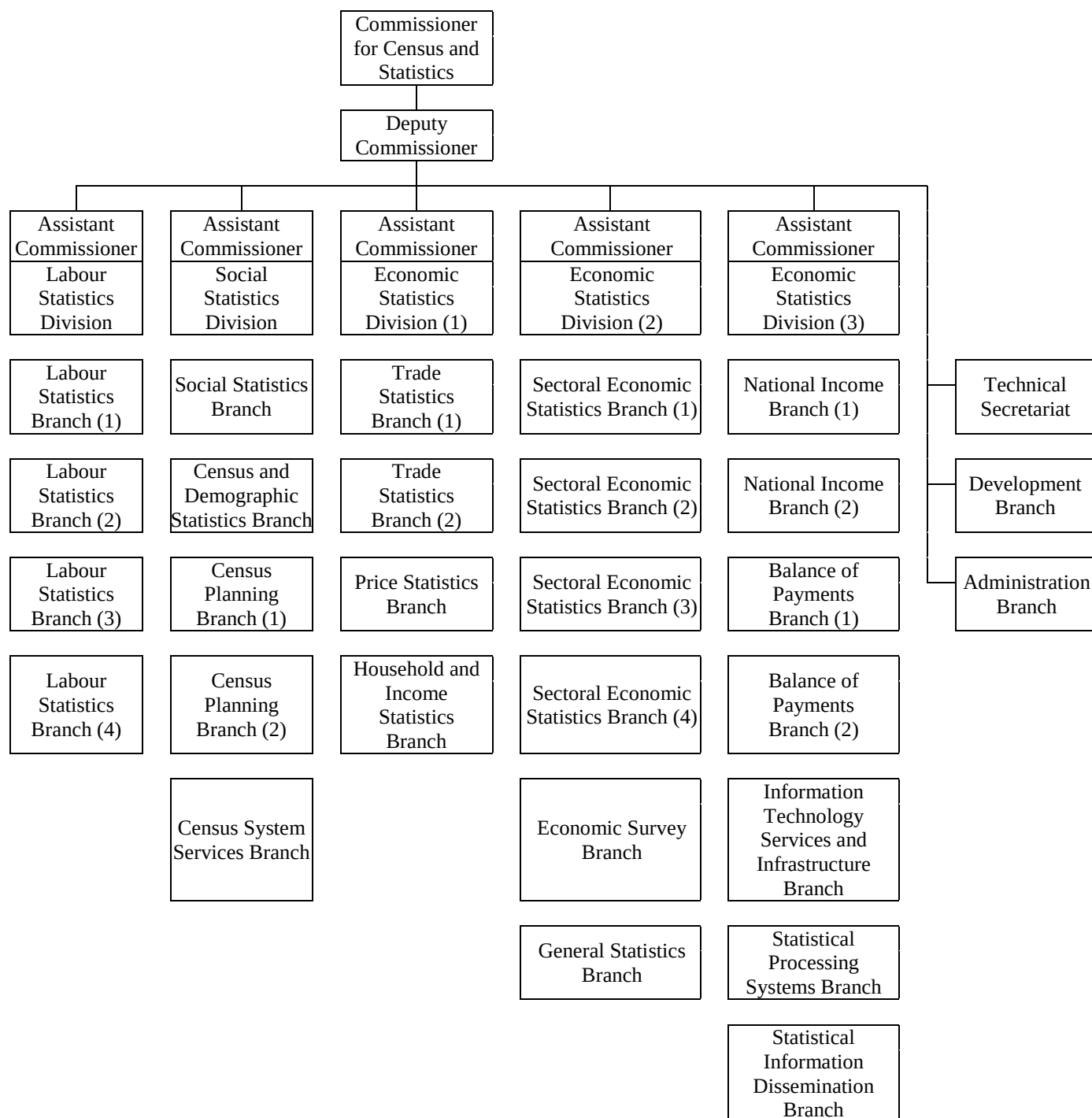
- (a) in implementing future IT projects, ascertain the user requirements before seeking funding approval as far as practicable and make a more realistic pre-tender estimate for the purpose;**
- (b) take measures to enhance the integration between CATI System and OQS, taking into consideration technical feasibility and business needs;**
- (c) establish a common data model to standardise the practices of managing and storing data across EUC systems/applications;**
- (d) formulate a strategy to complete the migration of EUC systems/applications running on the obsolete programming language in a more timely manner; and**
- (e) include all EUC systems/applications in future SRAAs and critically review the systems/applications to ensure that they meet the security requirements as specified in the Government's IT Security Guidelines.**

Response from the Government

4.14 The Commissioner for Census and Statistics agrees with the audit recommendations. She has said that C&SD:

- (a) has recently completed the review of ISS and will take on board the audit recommendations when implementing future IT projects and formulating the strategies for EUC systems/applications; and**
- (b) will continue to enhance the security of the existing EUC systems/applications before their migration.**

**Census and Statistics Department:
Organisation chart
(1 April 2019)**



Source: C&SD records

**Recommendations of consultant's
comprehensive review of fieldwork management system
(May 2014)**

Workload and work pressure	
1	Explore scope for rationalising GHS data requirements
2	Review survey forms for establishment surveys and explore scope for rationalising data items
3	Manage respondent burden for establishment surveys (e.g. introducing relaxing period for private sector organisations) and review and consider strengthening and expanding “customer window”
4	Develop a structured community engagement programme (i.e. to leverage territory-wide broadcasting initiatives, underpinned by a range of activities in reaching out to local resident groups and relationship building with property management/security offices)
5	Explore e-option for GHS (e.g. web-based self-administered questionnaires and/or Computer-Assisted Personal Interviewing)
6	Strengthen communications, particularly getting buy-in on stepped-up quality control efforts
Arrangement of GHS fieldwork	
7	Engender work ownership, delineate clearly the allocation of roles and accountabilities for all functional blocks involved in GHS work delivery and management
8	Strengthen the GHS central team to take up specific functions and responsibilities (e.g. training, assisting in data collection for sub-divided flats, strengthening quality control checks, manning GHS helpdesk), with a view to enhancing GHS data quality assurance
9	Further enhance the GHS Ambassador system so that Ambassadors can carry out their roles more effectively
10	Organise centrally-run face-to-face training/briefing sessions regularly, to keep field officers up-to-date on the GHS
11	Review performance appraisal system, considering how performance of frontline field officers in GHS could be reflected more clearly and explicitly

Appendix B
(Cont'd)
(para. 1.11 refers)

Arrangement of GHS fieldwork (cont'd)	
12	Regarding assignment allocation, conduct regular reviews of the weightings attached to various types of quarters and agree on a more structured, organised approach to adjusting the GHS assignment bundles after computerised allocation
13	Review outcomes of enhanced decentralisation approach in 12 months
14	Develop further details on the consolidation arrangements and carry out staff consultation
15	Revisit outsourcing option and consider switching to consolidation
16	Develop and communicate the policy on how to deal with sub-divided flats in the GHS samples
17	Mobilise a central back-up pool for taking up additional caseload or agree on team redevelopment approach
18	Plan and carry out targeted quality control checks and frame update
19	Pilot weekend working and review effectiveness
Communications	
20	Strengthen existing mechanism for field staff feedback on GHS
21	Organise structured communication plan and activities (e.g. the Directorate Team running town hall sessions for communications and engaging all staff for major reforms or transformation programmes)
22	Consider conducting a pulse check, through focus group discussions, covering topics such as work-life balance, job satisfaction and stress at work
Computerised time-log system	
23	Automatic capturing of field-time-activity information through Computer-Assisted Personal Interviewing, supported by consolidation of existing time-log systems

Source: C&SD records

**Findings of Audit's sample check of salary payments
to temporary field workers (2016 By-census)
(2017)**

Issues noted in 16BC	Regulations	C&SD's reply
• Inaccurate payment and missing records: - o discrepancy between the Summary Reports and bank payment records; - o discrepancies between Individual Reports and the Summary Reports; and - o six Individual Reports missing. • Improper certification for payments: - o the Summary Report (\$49.6 million) for Enumerators not certified; and - o the Summary Report for Chief Enumerators (\$10.1 million) certified by a staff of inappropriate level.	• The relevant sections of SAIs: - o <i>SAI 1205(c)</i>. It requires that all payments to be made must be checked and confirmed by responsible officers as to the accuracy of every payment details; - o <i>SAI 1335(b)</i>. It requires that in certifying the payment, the designated certifying officers should ensure the amount of payment is correct; - o <i>SAI 155(1)(b)</i>. It requires that, for proper maintenance of accounting books and records, Controlling Officers should ensure that all the accounting transactions are properly supported by relevant documentation; and	C&SD would endeavour to locate the missing records of 16BC. Improvement measures in the next population census and other similar large-scale projects included: • stepping up the payment control measures to ensure strict compliance with the requirements of the SAIs; • maintaining proper documentation for the specified period; and • ensuring that payments were certified by the proper authorities according to internal payment guidelines.

Appendix C
(Cont'd)
(paras. 3.2 and
3.5 refer)

Issues noted in 16BC	Regulations	C&SD's reply
	- o <i>SAI 225(1)</i>. It requires that the documentation which provides details of and support to a prime entry in the books of accounts may only be destroyed seven years after the end of the financial year in which the entry occurred. • C&SD's guidelines on Payment of Training Allowances, Honoraria and Travelling Expenses — TFWs of the Pilot Survey for 16BC required certification by a Senior Statistician for payment over \$10 million.	
Advertising expenses of \$6 million were charged to training expenses.	F&ARs section 300(1) requires Controlling Officer to ensure that expenditure is charged against subheads strictly in accordance with their ambits and that every charge against a subhead is for the purpose or purposes for which the subhead is intended.	C&SD noted that the funding approved for advertising expenses of 16BC fell short of the requirements and the expenditure was charged as "other training expenses". It would ensure that, in 21C, sufficient funding would be reserved under the appropriate subhead and expenditure would be properly charged in strict compliance with the requirements of F&ARs.

Source: Audit findings and C&SD records

**List of 16 IT projects recommended by
2004 Information Systems Strategy**

IT Project		Planned (Note 1)		Estimated Cost (\$ million)
		Start date	Completion date	
T1	Conduct organisation and process review for output production and implement output production system (Note 2) • Organisation and process review • Implementation	August 2005 N/A	April 2006 N/A	6.7
T2	Conduct process review and feasibility study for output dissemination	N/A	N/A	2.7
T3	Implement output data repository, statistics user relationship management and web-based channels of data dissemination	N/A	N/A	17.3
T4	Implement data input sub-system	April 2005	December 2005	2.6
T5	Conduct process review and feasibility study for data capturing	September 2005	June 2006	2.9
T6	Implement department-wide data capturing system	September 2007	December 2008	7.8
T7	Implement other modes of data capturing and survey tracking	September 2007	December 2008	5.1
T8	Conduct process review and feasibility study for fieldwork management	N/A	N/A	5.3
T9	Implement department-wide fieldwork management systems	N/A	N/A	14.7
T10	Replace the Quarterly Survey of Construction Output System and the Wage and Payroll System and develop common data processing and analysis tools	January 2006	January 2007	7.6
T11	Replace Full Harmonised System	April 2007	December 2008	5.0

Appendix D
(Cont'd)
(para. 4.3 refers)

IT Project		Planned (Note 1)		Estimated Cost (\$ million)
		Start date	Completion date	
T12	Review and re-design business register structure and sampling methodologies	N/A	N/A	3.0
T13	Implement business register system	N/A	N/A	8.8
T14	Implement management information system	N/A	N/A	3.3
T15	Enhance knowledge management support system (Note 2)			4.0
	• Design knowledge management framework and processes	January 2006	June 2007	
	• Implementation	N/A	N/A	
T16	Enhance departmental IT infrastructure	July 2005	March 2007	9.3
Total				106.1

Source: C&SD records

Note 1: According to C&SD, the planned start date and completion date referred to the dates stipulated in the implementation plan submitted to IT Steering Group in March 2006.

Note 2: The projects were planned to be implemented by stage. The planned start and completion dates referred to those of the first stage only. The project schedule of the subsequent stage(s) was to be drawn up after completion of the first stage.

Remarks: The implementation of Projects T2, T3, T8, T9 and T12 to T14 was subject to review after completing the 9 priority projects.

Acronyms and abbreviations

16BC	2016 By-census
21C	2021 Population Census
ACSO	Assistant Census and Survey Officer
Audit	Audit Commission
B/Ds	Government bureaux/departments
C&SD	Census and Statistics Department
CAPI	Computer-Assisted Personal Interviewing
CATI	Computer-Assisted Telephone Interview
CCF	Community Care Fund
CPI	Consumer Price Index
CSO	Census and Survey Officer
CSSA	Comprehensive Social Security Assistance
DCQA-GHS	Departmental Committee on Data Quality Assurance of GHS
DCS	Data capturing system using imaging technology
EUC	End-User Computing
F&ARs	Financial and Accounting Regulations
FoQ	Frame of Quarters
FTE	Full-time equivalent
GHS	General Household Survey
GLD	Government Logistics Department
GPA	Government Property Agency
HAB	Home Affairs Bureau
HES	Household Expenditure Survey
IMF	International Monetary Fund
ISS	Information Systems Strategy
IT	Information technology
LTHS	Long Term Housing Strategy
MRPS	Monthly Retail Price Survey

Appendix E
(Cont'd)

NC	Non-contact
OGCIO	Office of the Government Chief Information Officer
OQS	Online Questionnaire System
QC	Quality check
REO	Registration and Electoral Office
SAIs	Standing Accounting Instructions
SCSO	Senior Census and Survey Officer
SDB	Specialist and departmental building
SDU	Sub-divided unit
SI	Survey Interviewer
SRAA	Security Risk Assessment and Audit
TFW	Temporary field worker
THB	Transport and Housing Bureau
THS	Thematic Household Survey

CHAPTER 8

Security Bureau Immigration Department

Procurement of goods and services by the Immigration Department

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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PROCUREMENT OF GOODS AND SERVICES BY THE IMMIGRATION DEPARTMENT

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.9
Audit review	1.10
General response from the Government	1.11
Acknowledgement	1.12
PART 2: PROCUREMENT OF INFORMATION AND COMMUNICATIONS TECHNOLOGY SYSTEMS	2.1 – 2.4
Financial and administrative control of ICT projects	2.5 – 2.22
Procurement issues identified in three ICT projects	2.23 – 2.43
Audit recommendations	2.44
Response from the Government	2.45
PART 3: PROCUREMENT OF OTHER GOODS AND SERVICES	3.1
Procurement by tender	3.2

	Paragraph
Areas for improvement	3.3 – 3.25
Audit recommendations	3.26
Response from the Government	3.27
Procurement by quotation	3.28
Areas for improvement	3.29 – 3.32
Audit recommendations	3.33
Response from the Government	3.34

Appendices	Page
A : Immigration Department: Organisation chart (extract) (30 June 2019)	66
B : 14 ImmD's ICT projects recorded in the Capital Works Reserve Fund project expenditure report (June 2019)	67 – 68
C : Brief description of ImmD's eight completed ICT projects	69 – 70
D : Quotation exercises for items with cumulative values exceeding \$1.43 million within 24 months (2016-17 to 2018-19)	71
E : Repeated quotation exercises within a short period (2016-17 to 2018-19)	72 – 73
F : Acronyms and abbreviations	74

PROCUREMENT OF GOODS AND SERVICES BY THE IMMIGRATION DEPARTMENT

Executive Summary

1. The Immigration Department (ImmD) is responsible for two main areas of work, namely control of people moving into and out of Hong Kong by land, sea and air; and documentation of local residents (including the processing of applications relating to the Nationality Law of the People's Republic of China and claims to right of abode under the Basic Law, the issue of travel documents and identity cards, and the registration of births, deaths and marriages). For day-to-day immigration control operations, staff of ImmD administer 16 control points covering air, land and sea travel. As at 30 June 2019, ImmD had an establishment of 8,907 posts (comprising 7,233 (81%) service grade posts and 1,674 (19%) civilian grade posts).

2. ImmD's operation involves the procurement of information and communications technology (ICT) systems, vehicles, vessels, and other goods (such as uniform and accoutrement) and services (such as transport and security services). In 2018-19, ImmD incurred \$874 million under the General Revenue Account and \$340 million under the Capital Works Reserve Fund (CWRP) on the procurement of various goods and services. Similar to other government departments, ImmD's procurement of goods and services is governed by the Stores and Procurement Regulations (SPRs), relevant Financial Circulars, and Government Logistics Department (GLD) guidelines. The Audit Commission (Audit) has recently conducted a review to examine ImmD's work on the procurement of goods and services with a view to identifying areas for improvement.

Procurement of information and communications technology systems

Financial and administrative control of ICT projects

3. ImmD's ICT systems are instrumental to its vital operation for delivering services to the public. For each major ICT project, normally a project organisation

Executive Summary

with three-tier project governance structure, which includes a Project Steering Committee, a Project Working Group and a Project Team, is adopted. ICT projects funded under CWRP often involve substantial public money. Requirements on expenditure control are set out in the Financial and Accounting Regulations (F&ARs) and relevant Financial Circulars issued by the Financial Services and the Treasury Bureau (FSTB) (paras. 2.2, 2.5 and 2.6).

4. ***Project subheads not closed after project completion.*** As shown in the CWRP project expenditure report of the Government Financial Management Information System of June 2019, ImmD had a total of 14 ICT projects with unspent balance amounting to \$3,500.8 million. According to the annual reports on implementation of major ICT projects of May and December 2010, March 2016 and October 2018 (showing the positions as of March 2009, 2010, 2015 and 2018 respectively) submitted to the Finance Committee (FC) of the Legislative Council by the Office of the Government Chief Information Officer (OGCIO), 13 of the 14 projects were included in the annual reports, with eight reported as having been completed and five ongoing (para. 2.8). Audit examination has revealed the following areas for improvement:

- (a) ***Need to continue reporting project activities to OGCIO and FC until closure of project subheads.*** For the eight completed ICT projects included in the annual reports on ICT projects, they were reported as having been completed from March 2009 to March 2018 (i.e. for about 1 to 10 years, averaging 7.8 years). However, project expenditure totalling \$209.1 million relating to additional work was charged to seven completed projects (ranging from \$1.8 million to \$69.9 million) after reporting of project completion to OGCIO and FC. In Audit's view, while project activities are on-going, ImmD should continue to report such project activities to OGCIO for its preparation and submission of the annual reports to FC until the closure of the project subheads (paras. 2.9 to 2.11);
- (b) ***Need to timely close project subheads after settlement of project expenditures.*** Audit noted that up to June 2019, the subheads of the eight completed projects had not been closed, of which five had not incurred any expenditures for four to nine years. For good financial control of ICT projects in future, ImmD needs to initiate actions to close the subheads when all the project expenditures are settled after completion of the projects (paras. 2.12 and 2.13); and

Executive Summary

- (c) ***Need to inform FSTB to reserve surplus funds.*** According to F&AR 320, where Controlling Officers have reason to believe that funds surplus to requirements exist under a subhead, they shall immediately inform the Secretary for Financial Services and the Treasury so that the surplus may be reserved. Up to June 2019, no expenditure had been incurred for seven projects for one to nine years and the total unspent balance of the project subheads amounted to \$581.7 million. In future, for projects approved in October 2019 and thereafter, ImmD needs to comply with the requirement to inform FSTB of the excess funds in the project subheads (para. 2.14).

5. ***Financial control over the use of surplus project funds.*** Audit examination of 30 payment records of the eight completed projects revealed that five payments of \$2.3 million had been made in June to September 2013 relating to capital expenditures incurred in providing computer systems in a new control point at Kai Tak Cruise Terminal. They had been charged to project votes of Phases I and II of the updated Information Systems Strategy (ISS-2) after project closures as reported by ImmD to OGCIO in March 2010. In this connection, Audit noted that ImmD withdrew a new funding bid of \$68.58 million in September 2010 and decided to make use of the existing project votes under ISS-2 to fund the one-off cost of the computer equipment items. While the original scope of these projects had not covered the computer systems of the new control point at Kai Tak Cruise Terminal, the charging of expenditures on extension work (i.e. computer systems in the control point at Kai Tak Cruise Terminal) was within the wide ambit of the pertinent project votes (i.e. Phases I and II of ISS-2). In order to tighten the financial control on the use of surplus project funds, Audit considers that ImmD needs to clearly define the scope of ICT projects (e.g. including the number and location of control points to be covered) in the funding applications and state clearly in the funding papers if any surplus funds would be used for implementing new ICT systems of new control points in future (paras. 2.15 and 2.16).

6. ***Tenders with significant variances between pre-tender estimates (PTEs) and contract prices.*** Audit scrutinised ImmD's tender list from 2014-15 to 2018-19 and found that, in 14 of 16 contracts awarded, the contract prices were lower than the corresponding PTEs. In particular, five tenders recorded significant variances between PTEs (comprising mainly a one-off capital cost and/or maintenance cost) and the contract prices, ranging from 31% to 60%. The unrealistic PTEs could not form a good reference for considering whether the tender sums were fair and reasonable. Audit examination of two tender exercises in 2017 revealed that in working out PTE,

Executive Summary

for the tender of the Next Generation Smart Identity Card System, ImmD had only made reference to a market research in October 2014 and latest prices of major system components provided by certain vendors (not including the existing contractor which was a major vendor in the industry) in August 2016. For the tender of the Next Generation Electronic Passport System, ImmD had not followed up with the vendors to obtain the required price information on recurrent maintenance price in the 2017 market research exercise. In Audit's view, to work out realistic PTEs in future tender exercises, ImmD should take into account relevant factors including the market condition and economy of scale, and make efforts to follow up with vendors to obtain the required information as far as practicable (paras. 2.17 to 2.21).

Procurement issues identified in three ICT projects

7. Of the eight completed ICT projects from March 2009 to March 2018, Audit selected three projects with delays and/or significant unspent balance as compared with the approved project estimate for examination and noted areas for improvement as elaborated in paragraphs 8 and 9.

8. ***Phase III of ISS-2: Application and Investigation Easy System (APPLIES) and Electronic Records Programme.*** In May 2004, ImmD obtained funding approval of \$336.8 million for implementing Phase III of ISS-2 which would cover APPLIES to support processing of applications for visas, permits, and travel passes, and registration matters relating to births, deaths, and marriage as well as the Electronic Records Programme to enable transactions in ImmD to be conducted digitally. A tender was issued by GLD on behalf of ImmD in October 2004 for the project. In July 2005, the contract was awarded to a contractor at a total cost of \$308.5 million (paras. 2.24 and 2.25). Audit examination has revealed the following areas for improvement:

- (a) ***Delay in rolling-out the system and programme.*** The actual roll-out date of APPLIES and Electronic Records Programme was December 2008, a two-year delay as compared to the target roll-out date of December 2006. According to ImmD, the delay was caused by: (i) long tendering process and contract negotiation process; (ii) extension of system design and development stage to cope with changes in immigration policy; (iii) project complexity in the implementation process; and (iv) contractor's substandard performance. The two-year delay not only led to the slippage of two years in achieving the intended benefits of savings in staff costs, but

Executive Summary

also resulted in incurring additional expenditures to clear the backlog of file conversion (paras. 2.26, 2.29 and 2.30); and

- (b) ***Savings in staff costs not fully realised.*** According to the funding paper submitted to FC in May 2004, the implementation of APPLIES and Electronic Records Programme would bring about a saving of 159 posts (with annual recurrent savings in staff cost of \$49.8 million). In the Post Implementation Departmental Return submitted to OGCI, ImmD reported that a saving of 33 posts (with an annual staff cost of \$9.6 million (19%)) could not be realised because of operational and technological constraints (para. 2.31).

Audit considers that in developing similar systems in future, ImmD needs to improve its market research to ascertain the latest developments in operational requirements and information technologies. ImmD also needs to be vigilant in estimating realisable savings to ensure that such savings quantified in FC papers are achievable (para. 2.32).

9. ***Computer systems at Shenzhen Bay Control Point and at Lok Ma Chau (LMC) Spur Line Control Point.*** ImmD obtained funding approval of \$176.6 million in April 2004 to install computer systems (including the Automated Passenger Clearance System (APCS) and Automated Vehicle Clearance System (AVCS)) at Shenzhen Bay Control Point. In May 2005, ImmD also obtained funding approval of \$93.3 million for installing computer systems at LMC Spur Line Control Point. A tender for the supply and installation of APCS and AVCS at the two control points was prepared and issued in November 2005. When the tender closed in January 2006, four offers from four tenderers were received (paras. 2.33 and 2.35). Audit examination has revealed the following areas for improvement:

- (a) ***Need to consider setting a price ceiling as a reserve price.*** For APCS, of the three offers received, two offers submitted by Tenderer D and Tenderer E were conforming. Although Tenderer D obtained a higher combined score than Tenderer E, its tender price was higher than PTE. After obtaining a reference price (which was lower than PTE) of supplying the service from an existing contractor (i.e. Contractor C) under existing contract terms, ImmD conducted tender negotiations with Tenderer D but the reduced tender price offered by Tenderer D was still higher than PTE. In view of the tight time frame to commission the LMC Spur Line Control Point, ImmD sought the approval of the Central Tender Board (CTB) in

Executive Summary

July 2006 to cancel the tender on the grounds of public interest. After obtaining the Board's approval on cancelling the tender, ImmD requested Contractor C to supply the required APCS under the existing Contract C. Given the financial and time constraints and the availability of an alternative to supply the service under Contract C, Audit considers that a better option could be setting a price ceiling equal to Contractor C's reference price as a reserve price for internal reference at the outset (i.e. the tender exercise would be cancelled if the price of the most advantageous tender was higher than the reserve price) (paras. 2.35 to 2.38, 2.40 and 2.41); and

- (b) *Need to critically review the need for including stringent tender requirements as mandatory requirements.* For AVCS, as only one offer was received in the tender exercise and it was non-conforming, the tender exercise had to be cancelled. In this connection, in August 2006, before issuing the new tender, GLD requested ImmD to review the tender requirements with a view to drawing up the revised requirements with pragmatic terms. In response, ImmD re-classified some mandatory tender requirements (which had not been implemented in the then existing control points) to optional tender requirements with a view to attracting more bidders. In the second tender exercise of September 2006, three offers were received and they were all conforming offers. According to SPR 109(c), over-specification and over-prescription in product requirements or mode of service delivery should be avoided. In future tender exercises, ImmD needs to include only essential requirements and avoid imposing stringent requirements in the tender documents which may deter suppliers to submit their bids (paras. 2.39, 2.42 and 2.43).

Procurement of other goods and services

10. *Procurement by tender.* From 2014-15 to 2018-19, ImmD conducted 58 service tenders with a total contract value of \$689.2 million. Audit examined two service contracts in relation to the provision of transport and catering services for the Castle Peak Bay Immigration Centre (CIC), and found the following areas for improvement in the tendering process (paras. 3.2 and 3.3):

- (a) *Provision of transport services to CIC.* In August 2017, a transport service contract mainly for escorting detainees outside CIC for different purposes was awarded to the lower conforming bidder at an estimated total amount of \$2.79 million for a period of 36 months commencing from

Executive Summary

September 2017. In approving the award of the contract, the Departmental Tender Committee noted that there was a significant over-estimation of PTE. It commented that the mark up of PTE by 15% per year with an additional 7.5% for contingency was not well justified. The Committee also suggested that apart from wage, other relevant factors (such as the recent market trend, the demand and supply of the transport services, the oil prices and the projected inflation rate) should also be taken into account as appropriate. Audit considers that ImmD needs to take measures to improve the accuracy of PTE (paras. 3.4, 3.5 and 3.9); and

- (b) ***Provision of catering services at CIC.*** In March 2019, a contract was awarded to the lowest conforming offer from Contractor F at an estimated contract price of \$43.1 million for the provision of catering services to detainees at CIC for 36 months (from 15 April 2019 to 14 April 2022). In approving the award of the contract to Contractor F, CTB commented that ImmD had substantially increased the value of contract for counting tenderer's experience in providing catering services with a contract period of not less than 12 months, from \$1.43 million in the previous tender exercise to \$10 million in the current exercise. Such a high threshold of annual contract value for the subject contract was over-stringent and uncommon in other government tenders involving catering services. CTB commented that ImmD would need to remove the experience essential requirements for future tender exercises in line with the new pro-innovation government procurement policy to be effective from 1 April 2019 (paras. 3.16 and 3.17(a)).

11. ***Procurement guidelines.*** ImmD has issued and updated departmental circulars to promulgate procedures for procurement (para. 3.25). Audit examination has revealed the following areas for improvement:

- (a) ***Need to consider including requirements of conducting a market research in departmental guidelines.*** One of the reasons for over-estimation of PTE was inadequate market research. Audit examination of 33 tender exercises found that ImmD had not approached potential tenderers for conducting market research work in 26 (79%) tender exercises. In this connection, Audit noted that according to SPR 350(e) and Financial Circular No. 2/2019, departments are encouraged to reach out to the market and conduct a market research to better understand the goods or services likely to be available in the market, technological trends, number of potential

Executive Summary

bidders, etc. To meet this requirement, ImmD needs to consider including the requirements of conducting a market research (where appropriate) in its guidelines with a view to improving the procurement process in future (para. 3.25(a)); and

- (b) ***Need to incorporate new requirements in procurement guidelines.*** In March 2019, FSTB issued Financial Circular No. 2/2019 to promulgate details of the new pro-innovation government procurement policy, revisions to SPRs and measures to facilitate the participation of market players in government procurement. In this connection, many new measures are related to procurement by tender, e.g. more extensive use of marking schemes and the concept of value for money in procurement. ImmD needs to incorporate the new requirements and formulate the relevant guidelines in its departmental circulars (para. 3.25(c)).

12. ***Procurement by quotation.*** There were 1,046 purchases of goods and services involving quotation exercises from 2016-17 to 2018-19 with values exceeding \$50,000 each and the total contract value involved was \$410.8 million (para. 3.29). Audit selected 200 purchases for examination and found the following areas for improvement:

- (a) ***Need to enhance competition in procurement by quotation.*** In 77 (38.5%) purchases, although bid invitations had been sent to 5 to 36 suppliers, only one bid was received. In 45 (22.5%) purchases, only two bids were received. In view of the limited competition in 61% (38.5% + 22.5%) of the 200 quotation exercises, ImmD needs to explore measures to enhance competition (paras. 3.29 and 3.30); and
- (b) ***Need to consolidate procurement requirements to achieve better economy of scale.*** According to SPR 205 requirements, Controlling Officers should consolidate requirements of stores and services of similar nature as far as possible to achieve better economy of scale. Audit examination found that seven items were purchased by quotation (3 quotation exercises for each item, totalling 21 quotation exercises) and the cumulative contract value for each item exceeded \$1.43 million within 24 months. Besides, 12 items were purchased by quotation (2 to 5 quotation exercises for each item, totalling 36 quotation exercises) within a short period. Audit considers that the requirements for the same or similar items could be bundled together to

Executive Summary

achieve better economy of scale and to save procurement efforts (para. 3.31).

Audit recommendations

13. Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Immigration should:

- (a) after completion of main contracts of an ICT project, continue to report project activities to OGCI until closure of the project subhead (para. 2.44(a));
- (b) initiate actions to close an ICT project subhead when all the project expenditures are settled after project completion and inform FSTB of funds surplus to requirements under an ICT project subhead (para. 2.44(b) and (c));
- (c) clearly define the scope of an ICT project in the funding application and state clearly in the funding paper if any surplus funds would be used for implementing new ICT systems at new control points in future (para. 2.44(e));
- (d) in future tender exercises of ICT projects:
 - (i) take into account relevant factors including market condition and economy of scale and follow up with major vendors to obtain the required information in determining PTEs (para. 2.44(f)(i) and (ii));
 - (ii) where there are financial and time constraints in project implementation and there is an alternative of requiring a contractor to provide the ICT systems under an existing contract, consider setting a price ceiling equal to the contractor's reference price as a reserve price for internal reference (para. 2.44(f)(iii)); and

Executive Summary

- (iii) **include only essential requirements in the tender documents and avoid imposing stringent requirements which may deter suppliers to submit their bids (para. 2.44(f)(iv));**
- (e) **in developing ICT systems in future, improve market research to ascertain the latest developments in operational requirements and information technologies, and be vigilant in estimating realisable savings (para. 2.44(h) and (i));**
- (f) **in future tender exercises, take into account CTB's comments on the removal of essential requirements on experience (para. 3.26(a)(iii));**
- (g) **review and update ImmD's procurement guidelines where appropriate, including incorporating into the guidelines the new requirements on the new pro-innovation government procurement policy as laid down in Financial Circular No. 2/2019 (para. 3.26(c)); and**
- (h) **explore measures to enhance competition in the procurement of goods and services by quotation and remind procuring staff to comply with SPR 205 requirements of consolidating requirements of stores and services of similar nature as far as possible to achieve better economy of scale (para. 3.33(a) and (c)).**

Response from the Government

14. The Government generally agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 The Immigration Department (ImmD) is responsible for two main areas of work, namely control of people moving into and out of Hong Kong by land, sea and air; and documentation of local residents (including the processing of applications relating to the Nationality Law of the People's Republic of China and claims to right of abode under the Basic Law, the issue of travel documents and identity cards, and the registration of births, deaths and marriages). According to its Controlling Officer's Report, ImmD has the following five programmes contributing to the policy area of Immigration Control under the purview of the Security Bureau:

- (a) ***Pre-entry control.*** The aim is to control, through the visa system, legal immigration and the entry of foreign workers and to prevent the entry of undesirable persons;
- (b) ***Control upon entry.*** The aims are to exercise quantitative and qualitative control over legal immigration; prevent the entry of undesirable persons and the departure of persons wanted for criminal offences; facilitate the movement of bona-fide tourists, business visitors and local residents; and process cross-boundary vehicles;
- (c) ***Control after entry.*** The aim is to exercise immigration control by granting or refusing extension of stay; investigating and prosecuting offenders under relevant Ordinances (Note 1); removing or deporting illegal immigrants, overstayers and undesirable persons from Hong Kong; and implementing a unified screening mechanism, based on the procedures under the statutory torture claim screening mechanism, to assess non-refoulement claims made

Note 1: *The Ordinances include the Immigration Ordinance (Cap. 115), the Immigration Service Ordinance (Cap. 331), the Registration of Persons Ordinance (Cap. 177), the Marriage Ordinance (Cap. 181), the Births and Deaths Registration Ordinance (Cap. 174), and certain provisions under the Crimes Ordinance (Cap. 200).*

Introduction

on all applicable grounds and effect timely removal of those whose claim is rejected;

- (d) ***Personal documentation.*** The aims are to counteract illegal immigration and enhance the maintenance of law and order by providing all legal residents with a secure form of identity card and all consequential services related to identity cards; to register births, deaths and marriages and provide all consequential services related to such civil registration; to assess right of abode claims; and to facilitate international travel of Hong Kong residents by providing them with travel documents; and
- (e) ***Nationality and assistance to Hong Kong Special Administrative Region residents outside Hong Kong.*** ImmD is authorised by the Central People's Government to deal with Chinese nationality matters in respect of Hong Kong residents and accepts applications outside Hong Kong for declaration of change of nationality, naturalisation as a Chinese national, and renunciation and restoration of Chinese nationality through Chinese diplomatic and consular missions. It also provides assistance to Hong Kong residents in distress outside Hong Kong.

1.3 The work of ImmD is carried out through its Headquarters, branch offices and registries located in various districts. For day-to-day immigration control operations, staff of ImmD administer 16 control points covering air, land and sea travel (Note 2). Headed by the Director of Immigration, ImmD is mainly organised into seven branches. An extract of the organisation chart of ImmD is at Appendix A. As at 30 June 2019, ImmD had an establishment of 8,907 posts (comprising 7,233 (81%) service grade posts and 1,674 (19%) civilian grade posts).

Note 2: *The 16 control points comprise 14 control points for clearance of passengers at the Hong Kong International Airport, Lo Wu, Hung Hom, Lok Ma Chau Spur Line, the Express Rail Link West Kowloon, Lok Ma Chau, Man Kam To, Sha Tau Kok, Shenzhen Bay, Hong Kong-Zhuhai-Macao Bridge, China Ferry Terminal, Macau Ferry Terminal, Tuen Mun Ferry Terminal and Kai Tak Cruise Terminal, and 2 shipping control points for clearance of sea crew members at the Immigration Anchorages.*

Policy and principles of government procurement

1.4 Government procurement activities and management of goods are governed by the Stores and Procurement Regulations (SPRs — Note 3). According to SPRs, the policy of government procurement is to obtain stores and services at the best value for money in a publicly accountable manner to support Government's programmes and activities. This is to ensure that government procurement is conducted in an open and fair, transparent and impartial manner (see (a) to (c)). With a view to promoting innovation, the Chief Executive of Hong Kong Special Administrative Region announced in her 2018 Policy Address the new pro-innovation government procurement policy which aimed to promote the adoption of innovative suggestions and facilitate the participation of market players, including start-ups and small and medium-sized enterprises, in government procurement. As such, with effect from 1 April 2019, pro-innovation has become one of the guiding principles in government procurement and SPRs have been revised to that effect (see (a)(iv) and (d)). Taking into account pro-innovation, there are four guiding principles of government procurement, as follows:

(a) ***Open and fair competition***

- (i) competition is a reliable safeguard against bidders overcharging and holding Government to ransom. By encouraging participation through open and fair competition, the Government will be better able to obtain responsive and competitive bids that ensure value for money;
- (ii) as a norm, open bidding should be adopted as far as practicable. Single/restricted tendering or direct engagement of suppliers/service providers/consultants should be the exception and must be properly justified to the satisfaction of the relevant approving authority;
- (iii) all bidders should be treated on an equal footing. There should be no discrimination on the basis of the country of origin of the goods or service providers. Requirements, tender specifications and marking schemes (where applicable) should be drawn up in an

Note 3: *SPRs are made by the Financial Secretary/Secretary for Financial Services and the Treasury under the Public Finance Ordinance (Cap. 2).*

objective manner, providing a level playing field for all to compete on an equal footing; and

- (iv) for procurements with limited competition in past exercises, departments should explore measures to enhance competition and satisfy themselves that the tendering or consultants selection strategy to attract new bidders and innovative proposals is effective;
- (b) **Transparency.** To uphold public accountability and fairness of the procurement process, government procurement should be conducted in a transparent manner. In a procurement exercise, potential bidders should be given the same information. Departments should make available tender notices for all open tenders and invitations for admission to suppliers/service providers' lists on their webpages. Tender documents or consultancy briefs should be clear, concise and easy to understand to avoid complicating and adding to the cost of the bidding process;
- (c) **Integrity.** To uphold the integrity of government procurement, procurement decisions should be made in an impartial manner and public funds spent in an accountable way; and
- (d) **Pro-innovation (Note 4).** Innovation is conducive to securing value for money in the long run. Departments should encourage and be receptive to new ideas from suppliers/service providers, and allow room for assessing innovative proposals in the procurement process. Outcome-based requirements should be adopted as far as possible. Over-specification and over-prescription in product requirements or mode of service delivery should be avoided (Note 5).

Note 4: *This guiding principle aims to render the government procurement system more enabling for and receptive to innovative suggestions.*

Note 5: *With effect from 1 April 2019, SPRs have been revised to reflect specific changes to the procurement of stores, services (excluding works contracts and consultancies) and revenue contracts under the new policy, and general improvements to the procurement system for streamlining and to promote innovation. Such changes include: (a) unless absolutely necessary and with the prior approval from relevant approving authority as stipulated in SPRs, tenderers' experience should not be set as an essential requirement irrespective of the value of the procurement; and (b) wider use of marking schemes in the tender evaluation process. In this Audit Report, the requirements stipulated in previous versions of SPRs are referred to as the then SPRs.*

Regarding pro-innovation, in March 2019, the Financial Services and the Treasury Bureau (FSTB) issued Financial Circular No. 2/2019 setting out the requirements in promoting pro-innovative procurement. According to the Circular, there should be a wider use of marking schemes (either a Standard Marking Scheme Framework in accordance with the requirements as stipulated in the Circular or a pre-approved non-Standard Marking Scheme Framework) in the tender process. If departments consider that a marking scheme is not applicable, prior approval shall be sought.

Goods and services procured by ImmD

1.5 Goods procured by ImmD include major information and communications technology (ICT) systems (Note 6), capital equipment such as vehicles and vessels, and other goods such as uniform and electronic cabinet for storage of passports. Services procured by ImmD include catering services for its detention centre, and transportation services between various control points and the Immigration Headquarters at Wan Chai.

1.6 ***Guidelines and instructions.*** Similar to other government departments, ImmD's procurement activities and management of goods and services are governed by SPRs, relevant Financial Circulars, and Government Logistics Department (GLD — Note 7) guidelines. ImmD has also set out its procedures for procurement of goods and services in its departmental circulars and guidelines.

Note 6: *According to the Office of the Government Chief Information Officer, ICT systems are classified as either administrative or non-administrative. Broadly speaking, administrative computer systems are used for the collection, processing, utilisation, storage and distribution of information in order to provide decision support to management, and to assist in performing administrative and operational duties of departments. Non-administrative computer systems support the performance of tasks by the professional, technical and educational disciplines.*

Note 7: *GLD is the Government's central procurement agent for stores with a value beyond departmental limit (i.e. \$10 million or \$5 million prior to April 2019). It provides government bureaux/departments with procurement and supplies services including: (a) arranging issue of tenders for procurement of stores exceeding departmental limit and award of contracts on behalf of bureaux/departments; (b) providing advice on tendering and quotation procedures; and (c) providing advice on contract administration and monitoring.*

Introduction

1.7 ***Roles and responsibilities.*** The Supplies Sub-division (SSD — Note 8) under the Departmental Management Division in ImmD's Headquarters is responsible for the overall procurement and stores management in ImmD. Apart from some items supplied by GLD and the Correctional Services Department (e.g. some uniform items), SSD is responsible for procurement of goods (within the departmental direct purchase limit) and services from the open market for use by different sections. User sections are delegated the authority to procure urgent items not exceeding \$5,000 in a single purchase for immediate needs. As regards ICT systems, vehicles, vessels, other goods and services, the procurement/management responsibilities are distributed as follows:

- (a) ***ICT systems.*** The Information Systems Branch (ISB — Note 9) is responsible for the procurement (through SSD/GLD) and on-going maintenance of ICT systems and equipment. As of April 2019, ImmD maintained the following 15 major ICT systems:
 - (i) 7 mission-critical systems providing support services that could not be interrupted, e.g. the Immigration Control System (which supports e-Channels for self-service immigration clearance); and
 - (ii) 8 administrative computer systems providing administrative duties, e.g. the Electronic Records (Administrative) System (which supports the handling of administrative records through the use of advanced information technology) and the Electronic Services System (which provides electronic services to the public via the Internet and public telephone network for e-submission, e-booking and e-enquiry).

To upkeep its service quality and enhance its handling capacity to cope with growing service demands, from April 2010 to March 2019, ImmD obtained the Legislative Council (LegCo) Finance Committee (FC)'s funding

Note 8: *SSD is headed by a Senior Supplies Officer who is assisted by a number of Supplies Grade staff seconded from GLD.*

Note 9: *Headed by an Assistant Director, ISB comprises the Information Systems (Development) Division, the Information Systems (Production) Division, the Records and Data Management Division (each headed by a Principal Immigration Officer), and the Technology Services Division (headed by a Chief Systems Manager).*

approval of \$4,450 million to upgrade seven information technology infrastructure and applications (see items 8 to 14 in Appendix B);

- (b) **Vehicles.** The Transport Unit of the Accommodation and Transport Section under the Departmental Management Division co-ordinates with GLD on the procurement and replacement of ImmD's vehicles. As of April 2019, ImmD had a fleet of 36 general-purpose vehicles (such as medium saloon cars — Note 10). The Transport Unit is tasked to examine and evaluate ImmD's needs on transport with the users and co-ordinate with GLD on the procurement of all general-purpose vehicles (Note 11). Day-to-day management responsibility of ImmD's vehicles rests with respective user sections. The Transport Unit also co-ordinates with the Electrical and Mechanical Services Trading Fund (Note 12) on the repair and maintenance of ImmD's vehicles under a Service Level Agreement;
- (c) **Vessels.** As of April 2019, the Harbour Division of ImmD operated a fleet of 7 vessels, all of which were designed to help fulfil ImmD's responsibilities in a wide range of operational and geographical environments. According to SPRs, the Marine Department is the designated endorsement authority and agent for procurement of government vessels (Note 13); and

Note 10: *Under the General Regulations, GLD is responsible for the efficient and economical management and operation of the government vehicle fleet. The Director of Government Logistics is responsible for the procedures, administration and co-ordination of the procurement of all government vehicles with the exception of certain specialised vehicles as mutually agreed between the Director of Government Logistics, user departments and the Electrical and Mechanical Services Trading Fund.*

Note 11: *This Audit Report does not cover procurement of general-purpose vehicles by GLD.*

Note 12: *The Electrical and Mechanical Services Trading Fund is the trading arm of the Electrical and Mechanical Services Department which provides electrical and mechanical services to government bureaux/departments.*

Note 13: *This Audit Report does not cover procurement of ImmD's vessels by the Marine Department. In 2017, the Audit Commission completed an audit review of "Procurement and maintenance of government vessels" by the Marine Department, the results of which were reported in Chapter 2 of the Director of Audit's Report No. 69 of October 2017.*

- (d) ***Other goods and services.*** SSD co-ordinates with user sections regarding the procurement of other goods and services such as uniform and accoutrement (e.g. helmet, footwear, and shield), and transport and security services.

1.8 ***Procurement process.*** ImmD's procurement of goods and services is governed by SPRs, relevant Financial Circulars, and GLD guidelines. As shown in Figure 1 below, the procurement process mainly involves various stages, i.e. planning, invitation to tender/quotation, evaluation and acceptance, and delivery of goods/services.

Figure 1

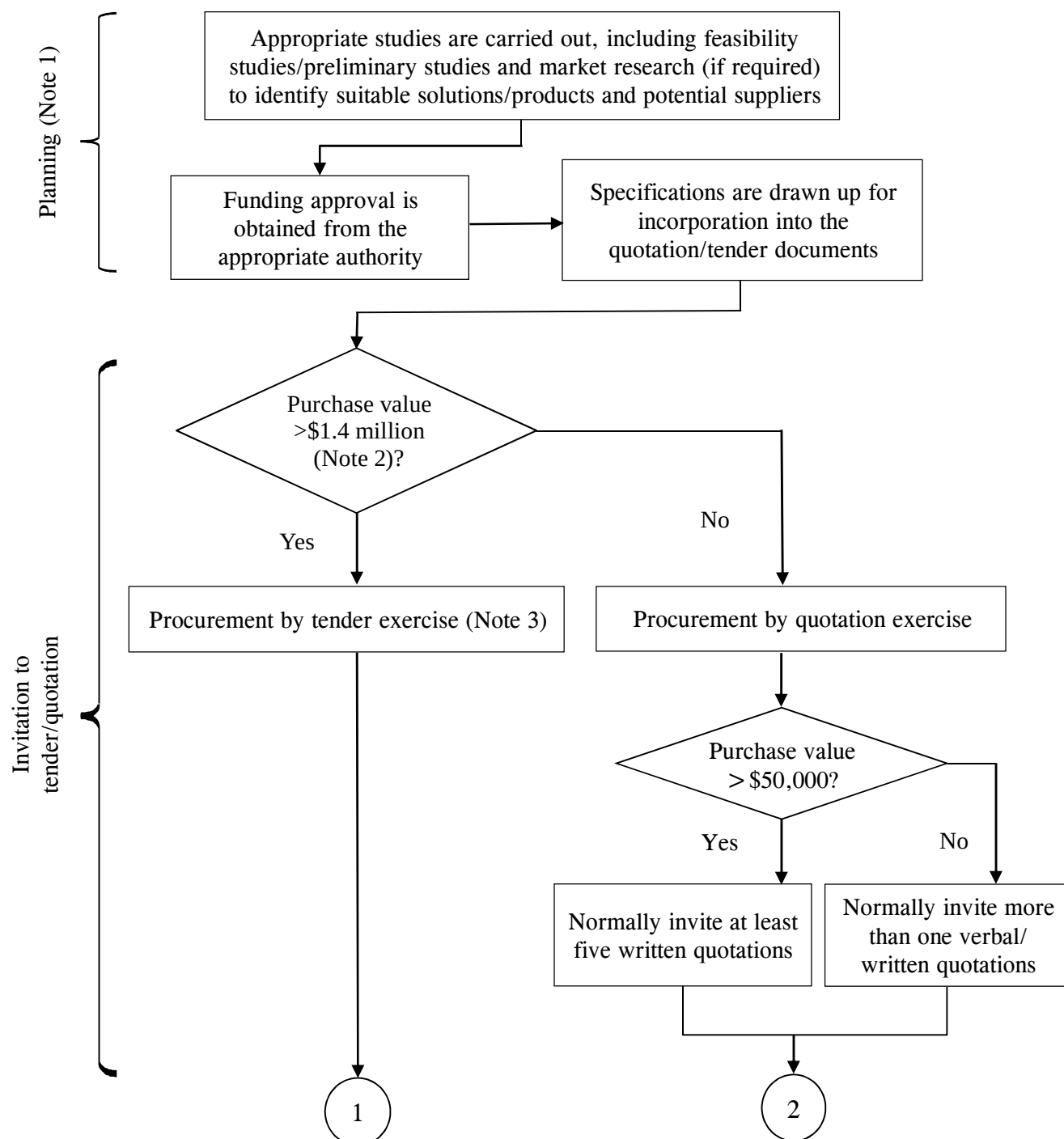
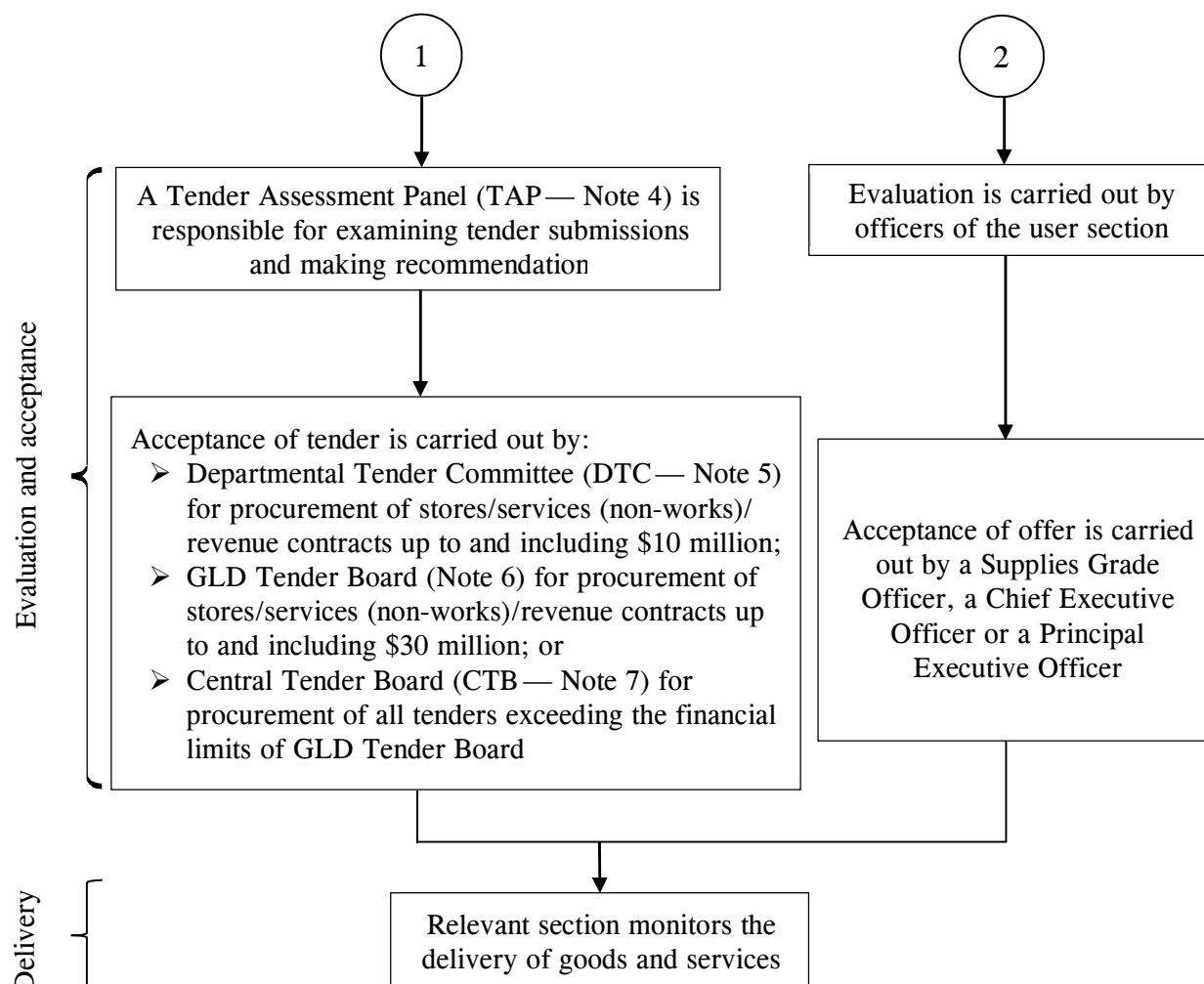
ImmD's procurement process of goods and services by tender/quotation

Figure 1 (Cont'd)



Source: Audit analysis of ImmD records

Note 1: For implementation of new major ICT systems, feasibility studies will be conducted to explore available solutions to meet ImmD’s new departmental policies and business requirements. The recommendations of the studies provide viable proposals with estimated costs for funding applications. Prior to the preparation of tender documents, review on market provisions and other information through market research according to SPR 350(e) (see para. 3.25(a)) will be done. Other price information available in previous/prevaling contracts/agreements will also be referenced.

Note 2: The financial limit was \$1.43 million prior to January 2018.

Note 3: For procurement of stores by tender, ImmD is responsible for arranging tenders for procurements within the departmental limit of \$10 million (\$5 million prior to April 2019). GLD is the procurement agent for stores with a value beyond the departmental limit. ImmD is responsible for arranging all tenders for procurement of services (non-works)/revenue contracts.

Figure 1 (Cont'd)

- Note 4: According to SPRs, TAP should consist of not less than two persons who should be government officials only. For ImmD, TAP mainly comprises representatives from user sections.*
- Note 5: The Committee is chaired by the Assistant Director (Management and Support). The members are the Chief Executive Officer (Finance and Supplies), the Senior Supplies Officer, and the Assistant Secretary (Finance and Supplies) as the secretary.*
- Note 6: GLD Tender Board, appointed by the Secretary for Financial Services and the Treasury under authority delegated by the Financial Secretary, is chaired by the Director of Government Logistics. The members are the Deputy Director of Government Logistics, Controller (Supplies Management), Senior Treasury Accountant of GLD, and the Departmental Secretary of GLD as the secretary.*
- Note 7: CTB, chaired by the Permanent Secretary for Financial Services and the Treasury (Treasury), is appointed by the Financial Secretary. Its members are the Director of Government Logistics, Permanent Secretary for Development (Works) or representative, a legal advisor at a rank not lower than Deputy Principal Government Counsel, Deputy Secretary for Financial Services and the Treasury (Treasury) 3, and the Principal Executive Officer (Tender) of the Financial Services and the Treasury Bureau (Treasury Branch) as the secretary. CTB, among others, makes recommendations to the Permanent Secretary for Financial Services and the Treasury (Treasury) on the acceptance of tenders, with the exception of those tenders dealt with by subsidiary tender boards/DTCs. The Board also considers matters concerning tenders.*

1.9 **Procurement expenditure.** In 2018-19, ImmD incurred \$874 million under the General Revenue Account and \$340 million under the Capital Works Reserve Fund (CWRF — Note 14) on the procurement of goods and services. Table 1 shows the procurement expenditure in the past three financial years from 2016-17 to 2018-19.

Note 14: *CWRF was set up for financing the public works programme, the acquisition of land, capital subventions, and major systems and equipment items.*

Table 1

**ImmD's expenditure on procurement of goods and services
(2016-17 to 2018-19)**

Type	Expenditure		
	2016-17	2017-18	2018-19
	(\$ million)		
(A) General Revenue Account expenditure			
(i) Recurrent:			
Goods (Note 1) and services	767	709	840
(ii) Capital:			
Plant, vehicles and equipment (Note 2)	21	19	34
Subtotal ((i) + (ii))	788	728	874
(B) CWRP expenditure			
(i) ICT systems (Note 3)	345	360	340
(ii) Other equipment (Note 4)	19	1	0
Subtotal ((i) + (ii))	364	361	340
Total ((A) + (B))	1,152	1,089	1,214

Source: ImmD records

Note 1: The financial limit for the classification of the relevant expenditure was ≤ \$200,000 each.

Note 2: The financial limit for the classification of the relevant expenditure was > \$200,000 each.

Note 3: The expenditures of non-administrative computer systems costing > \$10 million each and administrative computer systems costing > \$200,000 each are charged to CWRP.

Note 4: Such equipment included closed circuit television systems, air-cooled chiller units and air-conditioning systems.

Remarks 1: The expenditures excluded those for the procurement of general-purpose vehicles funded by GLD (see para. 1.7(b)).

2: \$10.7 million was incurred for procurement of vessels from 2016-17 to 2018-19 under Capital Account — Plant, vehicles and equipment (see item (A)(ii) above and Note 13 to para. 1.7(c)).

Audit review

1.10 In April 2019, the Audit Commission (Audit) commenced a review to examine the procurement of goods and services by ImmD, focusing on:

- (a) procurement of information and communications technology systems (PART 2); and
- (b) procurement of other goods and services (PART 3).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

General response from the Government

1.11 The Secretary for Security welcomes the audit recommendations. He has said that the Security Bureau will monitor the implementation of the audit recommendations in due course. The Director of Immigration generally agrees with the audit recommendations.

Acknowledgement

1.12 Audit would like to acknowledge with gratitude the full cooperation of the staff of ImmD during the course of the audit review.

PART 2: PROCUREMENT OF INFORMATION AND COMMUNICATIONS TECHNOLOGY SYSTEMS

2.1 This PART examines ImmD's procurement of major ICT systems funded under CWRP, focusing on:

- (a) financial and administrative control of ICT projects (paras. 2.5 to 2.22);
and
- (b) procurement issues identified in three ICT projects (paras. 2.23 to 2.43).

Information Systems Strategies

2.2 ImmD's ICT systems are instrumental to its vital operation for delivering services to the public. To cope with the ever-changing social and economic environment, ImmD has been proactively formulating its Information Systems Strategy (ISS) to keep pace with the digital era of the 21st Century and has been exploring various advanced technologies for delivering efficient and quality services to the public.

2.3 ImmD's first ISS was formulated in 1991 and implemented fully in 1995. To address the changing business environment and meet its long-term business needs, ImmD commissioned a consultancy study in 1999 to review its ISS. The consultant recommended an updated ISS (ISS-2) which embodied 30 separate but inter-related projects, including the First Generation Smart Identity Card System (SMARTICS — i.e. item 1 in Appendix C) and Phases I to III of ISS-2 (i.e. items 2, 3 and 6 in Appendix C — Note 15).

Note 15: *Phase I of ISS-2 comprised the Information Technology Infrastructure Upgrade Programme and Immigration Control Automation System Enhancement Programme. Phase II of ISS-2 comprised the Automated Passenger Clearance System and Automated Vehicle Clearance System. Phase III of ISS-2 comprised the Application and Investigation Easy System and Electronic Records Programme.*

2.4 Following completion of the projects under ISS-2, ImmD commissioned another consultancy study in March 2010 to formulate its third ISS with a view to better meeting the growing demands for public services and the long-term business needs of ImmD through the judicious use of information technology. The third ISS embodied eight separate but inter-related projects (including the Next Generation Smart Identity Card System (SMARTICS 2 — Note 16)) to be implemented by three phases in a structured programme from 2010 to 2018. ISB handles all matters concerning development and operation of ICT systems, records management and personal data privacy of ImmD.

Financial and administrative control of ICT projects

2.5 ***ICT project governance.*** ImmD has set up an Immigration Department Information Systems Coordination Committee (Note 17) to oversee the departmental information technology strategy and implementation. For project management of each ICT project, ImmD manages its projects with the formation of Project Steering Committee, Project Working Group and Project Team in accordance with the practice guides and project management framework promulgated by the Office of the Government Chief Information Officer (OGCIO). In the project management framework, the project management lifecycle consists of four phases (namely Initiate, Plan, Execute and Close) with project control across the whole lifecycle. The Immigration Department Information Systems Coordination Committee will take the lead for Initiate Phase before funding of relevant projects is approved. After funding approval, a project organisation will be formed. For each major ICT project, normally a project organisation with three-tier project governance structure is

Note 16: *The System supports the registration and production of Smart Hong Kong Identity Cards (including receiving applications, conducting record check and case assessment, personalisation and card issuance). It also supports the provision of other immigration-related services by ImmD and verification of personal data requested by other government bureaux/departments or public organisations.*

Note 17: *The Committee performs functions as ImmD's departmental Information Technology Steering Committee to formulate and review departmental policy and strategy concerning information systems, to monitor progress of the implementation of the department's information systems, and to report progress and make recommendations on important issues relating to the existing/under-development information systems. Meetings of the Committee are chaired by an Assistant Director, comprising members including Sub-division Heads and Senior Systems Managers or above in ISB.*

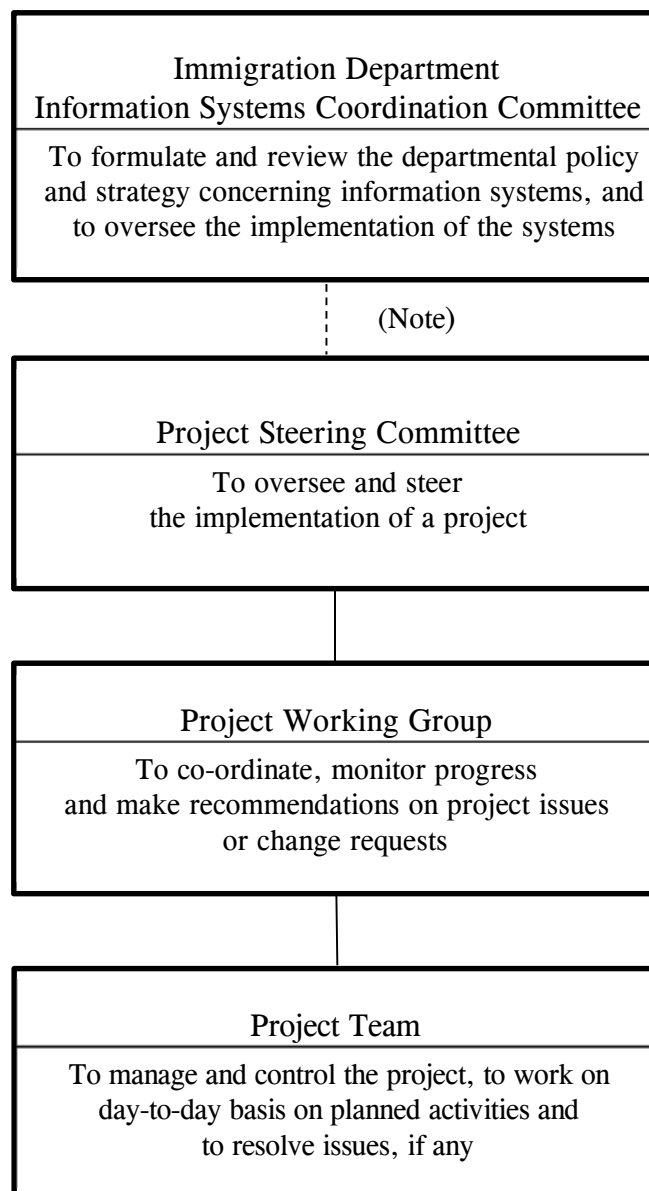
Procurement of information and communications technology systems

adopted, which includes a Project Steering Committee (Note 18), a Project Working Group and a Project Team. Before commencing a project, a project initiation document will be prepared for the Project Steering Committee's approval, covering the project monitoring and control mechanism, including checkpoint meetings, highlight reports and project issues for special attention. During project implementation, regular checkpoint meetings normally on a weekly/biweekly basis and/or ad-hoc project progress meetings will be held involving relevant contractors and the Project Team. Highlight reports will be submitted to the Project Steering Committee and Project Working Group for monitoring progress. Approval for issue resolution or change requests with significant impact will be sought from the Project Steering Committee or the Project Working Group as appropriate. End-stage reports will be submitted for Project Steering Committee's approval. ImmD's ICT project governance structure is summarised in Figure 2.

Note 18: *For major ICT projects, the Project Steering Committee is normally chaired by the Deputy Director or an Assistant Director, comprising members including a representative in each of the Security Bureau and OGCIO, directorate officers of user branches and ISB, and a Chief Systems Manager. Its terms of reference are to oversee and steer the implementation of a project, to formulate, determine and steer project scopes, development progress and rollout.*

Figure 2

ImmD's ICT project governance structure



Source: ImmD records

Note: There is no subordinate relationship between the Immigration Department Information Systems Coordination Committee and the Project Steering Committee.

2.6 ***Requirements of Financial and Accounting Regulations (F&ARs — Note 19) and relevant Financial Circular.*** ICT projects funded under CWRP often involve substantial public money. Requirements on expenditure control are set out in F&ARs and relevant Financial Circulars issued by FSTB, including the following:

- (a) ***F&AR 300.*** Controlling Officers must ensure that expenditure is charged against subheads strictly in accordance with their ambits and that every charge against a subhead is for the purpose or purposes for which the subhead is intended;
- (b) ***F&AR 315.*** Expenditure charged to Operating Account non-recurrent subheads or Capital Account subheads must be reviewed periodically by Controlling Officers not only in relation to the approved provision, but also in relation to the progress of the work;
- (c) ***F&AR 320.*** Where Controlling Officers have reason to believe that funds surplus to requirements exist under a subhead, they shall immediately inform the Secretary for Financial Services and the Treasury so that the excess may be reserved; and
- (d) ***Financial Circular No. 1/2004 “Responsibility of Controlling Officers”.*** The Circular stipulates, among others, that:
 - (i) Controlling Officers must satisfy themselves that there are adequate procedures to monitor expenditure in order to ensure that it is only incurred within the limits and scope authorised;
 - (ii) where in doubt, Controlling Officers should consult the Treasury Branch of FSTB (Note 20); and

Note 19: *The Public Finance Ordinance (Cap. 2) requires every Controlling Officer to comply with all administrative regulations and directions/instructions made under the Ordinance, including F&ARs.*

Note 20: *Financial Circular No. 1/2004 also states that although some of the control requirements of the Public Finance Ordinance relate only to General Revenue Account, Controlling Officers should apply similar disciplines to control expenditure from Funds set up under the Ordinance.*

- (iii) Controlling Officers are ultimately responsible and accountable for the proper use of funds under their control and provision for each subhead, and they must satisfy themselves that there are adequate procedures to monitor expenditure in order to ensure that it is only incurred within the limits and scope authorised.

To strengthen management and control of approved funding for capital non-works items, FSTB has introduced a new measure with effect from April 2018 whereby for items which have been approved for ten years or more, expenditure estimates for the coming financial year will be withheld unless otherwise justified by Controlling Officers.

2.7 *Monitoring of ICT projects by OGCIO.* According to OGCIO Circular No. 3/2007, for administrative computer projects funded under CWRP Head 710, bureaux and departments (B/Ds) are required to submit Post Implementation Departmental Returns (PIDRs) to OGCIO six months after operation of the ICT projects. The purpose of PIDR is to evaluate the achievement of the projects to ensure that the Government's investment in the projects has attained the intended objectives in a timely and cost-effective way. After examining the PIDR results (such as whether there has been a substantial deviation from the planned achievements), OGCIO will determine whether to initiate Post Implementation Reviews (PIRs) to look into the causes of deviation and identify necessary improvement, taking into account the recommendations of the pertinent B/Ds. Every year, OGCIO submits to FC an annual report on implementation of major ICT projects funded under CWRP Head 708 (non-administrative computer systems) and Head 710 (administrative computer systems) (hereinafter referred to as annual report on ICT projects — Note 21).

Note 21: *According to OGCIO, the purpose of the annual report is to keep FC informed of the progress of approved computerised projects (including the actual expenditure and any revision to original scheduled implementation date) to facilitate FC monitoring of the progress of major ICT projects.*

Project subheads not closed after project completion

2.8 According to CWRP project expenditure report of the Government Financial Management Information System (GFMIS), ImmD had a total of 14 ICT projects with unspent balance as of June 2019 (see Appendix B). Based on annual reports on ICT projects (see para. 2.7) of May and December 2010, March 2016 and October 2018 (showing the positions as of March 2009, 2010, 2015 and 2018 respectively — Note 22) submitted to FC, 13 of the 14 projects were reported, with eight reported as having been completed and five ongoing (see Appendix B) (Note 23).

2.9 Up to June 2019, the eight completed ICT projects (see Appendix C for details) had been rolled out for some 2 to 16 years (see Table 2). According to OGCI's annual reports on ICT projects submitted to FC, the eight projects (with PIDRs already completed) had been completed for about 1 to 10 years, averaging 7.8 years (Note 24).

Note 22: *As of June 2019, 2019 annual report on ICT projects showing the position as of March 2019 was not yet available.*

Note 23: *The remaining project, namely the Next Generation Application and Investigation Easy Systems (i.e. item 14 in Appendix B) was approved in May 2018 and in progress as of June 2019. The project had not been included in the 2018 annual report on ICT projects which only showed project status up to March 2018.*

Note 24: *As the completion dates in the annual reports on ICT projects (which were subsequently reported to FC (see Note 21 to para. 2.7)) were reported to OGCI by ImmD, Audit's analyses were based on the project completion dates as shown in the annual reports on ICT projects.*

**Procurement of information and
communications technology systems**

Table 2

**Rolled-out projects with subheads not closed
(June 2019)**

Item	Project name	Approved project estimate (a) (\$ million)	Roll-out date	Date of final payment made		Project completion date per annual reports on ICT projects	Number of years from date of final payment made for whole project to June 2019 (Year)	Unspent balance up to June 2019	
				Main contract	Whole project			(b) (\$ million)	(c) = [(b) ÷ (a)] × 100% (%)
1	Hong Kong Special Administrative Region Identity Card (Note 1)	1,225.6	Aug 2003	Mar 2005	Mar 2015	Mar 2009	4	423.8	35%
2	Implementation of Phase I of ISS-2	362.1	Jun 2004	Feb 2008	Mar 2015	Mar 2010	4	24.9	7%
3	Implementation of Phase II of ISS-2	352.8	May 2006	Feb 2008	Nov 2015	Mar 2010	4	28.0	8%
4	Computer systems at the new control point for the Lok Ma Chau Terminus of the Sheung Shui to Lok Ma Chau Spur Line	93.3	Aug 2007	Feb 2008	Aug 2010	Mar 2010	9	26.0	28%
5	Introduction of Biometric Hong Kong Special Administrative Region Passport and Strategic Enhancement of the Travel Document Information System	152.8	Aug 2008	Aug 2009	Mar 2015	Mar 2010	4	13.8	9%
6	Implementation of Phase III of ISS-2 (Note 2)	336.8	Dec 2008	Dec 2010	Sep 2017	Mar 2010	2	3.5	1%

Procurement of information and communications technology systems

Table 2 (Cont'd)

Item	Project name	Approved project estimate (a) (\$ million)	Roll-out date	Date of final payment made		Project completion date per annual reports on ICT projects	Number of years from date of final payment made for whole project to June 2019 (Year)	Unspent balance up to June 2019	
				Main contract	Whole project			(b) (\$ million)	(c) = [(b) ÷ (a)] × 100% (%)
7	Enhancement of computer systems to process electronic Exit-Entry Permit for Travelling to and from Hong Kong and Macao and extension of e-Channel service	247.5	May 2014	Nov 2014	Oct 2018	Mar 2015	0.7	51.9	21%
8	Computer systems at the new control point for the Hong Kong-Shenzhen Western Corridor	176.6	Aug 2017	Feb 2018	Mar 2018	Mar 2018	1	61.7	35%
Overall		2,947.5						633.6	21%

Source: Audit analysis of ImmD records and the annual reports on ICT projects

Note 1: According to ImmD, tender records and contract files of the project were disposed of in 2018 in accordance with the general administrative records disposal schedules.

Note 2: Phase III of ISS-2 comprised the Application and Investigation Easy System and the Electronic Records Programme. For this project, the final payment for main contracts was made after project completion date.

2.10 Project expenditure incurred after reported project completion dates.

Audit noted that based on the information on completion of the eight completed ICT projects provided by ImmD, the annual reports on ICT projects indicated that the eight projects were completed from March 2009 to March 2018. However, there were still project expenditures in seven of the eight projects after the reported project completion dates. As shown in Table 3, a total of \$209.1 million was charged to the seven completed projects (ranging from \$1.8 million to \$69.9 million) after the project completion dates.

**Procurement of information and
communications technology systems**

Table 3

**Amount spent on eight completed projects
after project completion date
(June 2019)**

Item	Project name	Date of final payment made for main contract	Project completion date (Note 1)	Unspent balance up to project completion date	Unspent balance up to June 2019	Amount spent after project completion date (Note 2)
				(a) (\$ million)	(b) (\$ million)	(c) = (a) - (b) (\$ million)
1	Hong Kong Special Administrative Region Identity Card	Mar 2005	Mar 2009	464.4	423.8	40.6
2	Implementation of Phase I of ISS-2	Feb 2008	Mar 2010	44.5	24.9	19.6
3	Implementation of Phase II of ISS-2	Feb 2008	Mar 2010	76.1	28.0	48.1
4	Computer systems at the new control point for the Lok Ma Chau Terminus of the Sheung Shui to Lok Ma Chau Spur Line	Feb 2008	Mar 2010	27.8	26.0	1.8
5	Introduction of Biometric Hong Kong Special Administrative Region Passport and Strategic Enhancement of the Travel Document Information System	Aug 2009	Mar 2010	22.2	13.8	8.4
6	Implementation of Phase III of ISS-2	Dec 2010 (Note 3)	Mar 2010	73.4	3.5	69.9

Procurement of information and communications technology systems

Table 3 (Cont'd)

Item	Project name	Date of final payment made for main contract	Project completion date (Note 1)	Unspent balance up to project completion date	Unspent balance up to June 2019	Amount spent after project completion date (Note 2)
				(a) (\$ million)	(b) (\$ million)	(c) = (a) – (b) (\$ million)
7	Enhancement of computer systems to process electronic Exit-Entry Permit for Travelling to and from Hong Kong and Macao and extension of e-Channel service	Nov 2014	Mar 2015	72.6	51.9	20.7
8	Computer systems at the new control point for the Hong Kong-Shenzhen Western Corridor	Feb 2018	Mar 2018	61.7	61.7	—
Total				842.7	633.6	209.1

Source: Audit analysis of ImmD records and the annual reports on ICT projects

Note 1: The project completion dates were based on the annual reports on ICT projects (see Note 24 to para. 2.9).

Note 2: According to ImmD, spending after the completion date in the annual report on ICT projects was arising from one-off implementation of new business requirements that fell within respective project ambit.

Note 3: For this project, the final payment for main contracts was made after project completion date.

2.11 Need to continue reporting project activities to OGCIO and FC until closure of project subheads. In response to Audit's enquiry about the continuing project activities after reporting of project completion to OGCIO and FC (see para. 2.10), in September 2019, ImmD said that:

- (a) although project completion was reported by ImmD in the annual reports on ICT projects, there would still be project expenditures for subsequent spending; and
- (b) the closure of project subhead should be the date after which no further expenditures would be incurred. OGCIIO was informed of such when no further expenditures would be incurred.

In the event, the project expenditures after reporting of project completion were mainly related to additional work carried out after the reported completion dates. In Audit's view, ImmD should continue to report such project activities to OGCIIO for its preparation and submission of the annual reports to FC until the closure of the project subheads, instead of reporting project completion and deleting the items from the annual reports on ICT projects while project activities are on-going.

2.12 *Project subheads with no further expenditures not closed for a long time.*

According to the CWRP project expenditure reports, the expenditure subheads of the eight completed projects had not been closed, notwithstanding that up to June 2019:

- (a) one project (see item 4 in Table 2 of para. 2.9) had not incurred any expenditure after August 2010 for nine years;
- (b) four projects (see items 1 to 3 and 5) had not incurred any expenditure after March or November 2015 for four years;
- (c) one project (see item 6) had not incurred any expenditure after September 2017 for two years;
- (d) one project (see item 8) had not incurred any expenditure after March 2018 for one year; and
- (e) one project (see item 7) had not incurred any expenditure after October 2018 for 0.7 years.

2.13 *Need to timely close project subheads after settlement of project expenditures.* In response to Audit's enquiries regarding the closing of project subheads, in June and September 2019, ImmD said that:

Procurement of information and communications technology systems

- (a) in March 2017, in response to FSTB's request for information to facilitate the system enhancement of GFMIS, ImmD confirmed that items 1 to 5 in Table 2 of paragraph 2.9 had been completed. ImmD further confirmed to FSTB in July 2017 that item 6 had been completed, and in June 2019 that items 7 and 8 had been completed; and
- (b) notwithstanding that ImmD had confirmed to FSTB the completion of these projects, ImmD was required to initiate action to inform the Treasury to complete the closing of project subheads in GFMIS of the Treasury. Actions had been taken to close the eight project subheads in GFMIS.

For good financial control of ICT projects in future, ImmD needs to initiate actions to close the subheads when all the project expenditures are settled after completion of the projects.

2.14 *Need to inform FSTB to reserve surplus funds.* According to F&AR 320, where Controlling Officers have reason to believe that funds surplus to requirements exist under a subhead, they shall immediately inform the Secretary for Financial Services and the Treasury so that the surplus may be reserved. As shown in paragraph 2.12, up to June 2019, no expenditure had been incurred for the seven projects (see para. 2.12(a) to (d)) for one to nine years and the total unspent balance amounted to \$581.7 million. In future, ImmD needs to comply with the requirement to inform FSTB of the excess funds in the project subheads. In Chapter 3 of the Director of Audit's Report No. 71 of October 2018 entitled "Procurement of operational equipment by the Hong Kong Police Force", Audit recommended that FSTB should consider the need for applying administrative cap/reporting requirements adopted for works projects to non-works projects under CWRF for better monitoring of the surplus funds. In response, FSTB replied in October 2018 that for capital non-works projects (i.e. administrative computer systems funded under CWRF Head 710 and non-administrative computer systems and communication equipment funded under CWRF Head 708) approved by LegCo in the 2019-20 legislative session and thereafter, it would provide LegCo with quarterly reports on significant deviations between the accepted tender prices of the projects and the estimated provisions in the approved project estimates when the deviations equal or exceed \$15 million or 10% of the original estimated provision, whichever

was greater. The excess would be reserved administratively (Note 25). In this connection, ImmD needs to take measures to ensure compliance with this new requirement for projects approved in October 2019 and thereafter.

Financial control over the use of surplus project funds

2.15 ***Audit examination.*** The responsibility for expenditure control of ImmD's ICT projects rested mainly on ISB. According to the FC papers of the eight ICT projects, the commitment sought for each project was for the implementation of a new system project. Additional recurrent expenditures arising from the projects, such as funding requirements for further procurement of goods and services including hardware/software maintenance, software licence fees, and on-going support services of the systems, e.g. on-going support and maintenance services provided by external service providers, would be reflected in the Estimates of relevant years. From the payment records of the eight projects, Audit selected 30 payment records in three financial years prior to the first financial year in which no expenditure was incurred for examination (see Table 4).

Note 25: *As all ImmD's ICT projects mentioned in this Audit Report were approved by LegCo before the 2019-20 legislative session, FSTB's new procedure does not apply to the projects.*

Table 4

Nature and expenditures involved in 30 payment records

Nature	Number of payment record	Expenditure involved (\$ million)
Extension of SMARTICS service lifespan	8	5.4
Project payments	2	3.2
Computer systems in new control point at Kai Tak Cruise Terminal	5	2.3
Enhancement or upgrading of various systems	8	2.1
Additional hardware/specialist supplies	3	1.9
Employment of information technology staff	3	0.1
Business trip for SMARTICS project	1	0.1
Total	30	15.1

Source: Audit analysis of ImmD records

2.16 *Need to clearly define the scope of ICT projects in funding applications.*
Audit examination revealed that five payments of \$2.3 million made in June to September 2013 relating to capital expenditures incurred in providing computer systems in a new control point at Kai Tak Cruise Terminal (Note 26) were charged to project votes of Phases I and II of ISS-2 (see items 2 and 3 in Table 3 of para. 2.10) after project closures as reported by ImmD to OGCIO in March 2010. In this

Note 26: *According to ImmD, the estimated cost for computer systems in the control point at Kai Tak Cruise Terminal was \$68.58 million. The actual expenditure of \$16.9 million had been funded under different project votes using the remaining surplus under the respective subheads (\$10.1 million and \$5.2 million charged to Phase I and Phase II of ISS-2 respectively and \$0.1 million charged to sundry subheads) and also under a new item of OGCIO's block vote under Head 710 (\$1.5 million). According to Financial Circular No. 4/2011, FC's approval is required for creation of new commitments exceeding \$10 million under CWRP Head 710.*

connection, Audit noted that ImmD withdrew a new funding bid of \$68.58 million in September 2010 after receiving FSTB's request for justification for the proposed new funding bid, as various computerisation projects had already been undertaken by ImmD and there was a difference between the estimated project balances and estimated cash flow requirements in the forthcoming years of existing major project votes. ImmD then decided to make use of the existing project votes under ISS-2 to fund the one-off cost of the computer equipment items for the control point at Kai Tak Cruise Terminal (see para. 2.6(d)(iii)). While the charging of expenditures on extension work (i.e. computer systems in the control point at Kai Tak Cruise Terminal) was within the wide ambit of the pertinent project votes (i.e. under Phases I and II of ISS-2), Audit found areas for improvement from the financial control point of view, as follows:

- (a) there were eight control points (Note 27) when the two projects were approved in January 2002 and January 2003, and the funding for providing computer systems in the control point at Kai Tak Cruise Terminal was only sought in August 2010. Therefore, the original scope of the two projects had not covered the computer systems in the control point at Kai Tak Cruise Terminal. In this connection, Audit noted that separate funding approvals had been sought from FC on implementation of new computer systems in two other new control points, namely Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities and Shenzhen Bay Control Point (previously also known as Control Point at Hong Kong-Shenzhen Western Corridor — see item 8 in Table 2 of para. 2.9);
- (b) to facilitate the financial control by FC and as a good project management practice, the scope of a project should be clearly defined in the funding application. This was formally set out in the user guide on preparation for FC/Public Works Sub-committee submission as specified in Financial Circular No. 4/2010. However, the scope of the two projects had not precisely defined the number and locations of control points to be covered in FC papers. In the circumstances, there was an incentive for ImmD to keep the subhead with surplus funds open as long as possible for meeting any future extension and improvement work, albeit that the final payment of main contracts had been made and project completion had been reported to OGCIO. Given that ImmD decided to implement further system work

Note 27: *The eight control points are located at the Hong Kong International Airport, Lo Wu, Hung Hom, Lok Ma Chau, Man Kam To, Sha Tau Kok, the China Ferry Terminal, and the Macau Ferry Terminal.*

after completion of main contracts, the projects were still in progress and should not be taken as completed; and

- (c) further expenditures were incurred under the two projects after project completion (\$19.6 million and \$48.1 million respectively up to June 2019), notwithstanding that the two project items had been reported in the annual report on ICT projects submitted to FC in December 2010 showing the position as at 31 March 2010 that the projects would be closed and deleted from the annual reports thereafter. In this connection, Audit noted that ImmD had also not included in the annual reports on ICT projects further computer system work implemented after completion of main contracts for the other five reported completed projects (see items 1 and 4 to 7 in Table 2 of para. 2.9).

In order to tighten the financial control on the use of surplus project funds, Audit considers that ImmD needs to clearly define the scope of ICT projects (e.g. including the number and locations of control points to be covered) in the funding applications and state clearly in the funding papers if any surplus funds would be used for implementing new ICT systems of new control points in future. ImmD should also include all projects in the annual reports to be submitted to OGCIO if further computer system work has been implemented after completion of main contracts (see also para. 2.11).

***Tenders with significant variances between
pre-tender estimates and contract prices***

2.17 According to the standard tender report format in Appendix III(I) of SPRs, for a tender report submitted to relevant tender board or DTC, Controlling Officer is required to confirm with analysis (by comparing the recommended tender sum with pre-tender estimates (PTEs) and/or the awarded contract sum of the previous contract or those in similar contracts) that the recommended tender sum is fair and reasonable. If PTEs are not based on effective market research and deviate from market prices, they cannot form a good reference for considering whether the tender sums are fair and reasonable.

2.18 Audit scrutinised the tender list provided by ISB from 2014-15 to 2018-19 and found that, in 14 of 16 contracts awarded, the contract prices were lower than the corresponding PTEs. Five tenders recorded significant variances between PTEs

(comprising mainly a one-off capital cost and/or maintenance cost) and the contract prices, ranging from 31% to 60%. Audit identified areas for improvement in two tender exercises, namely SMARTICS 2 and the Next Generation Electronic Passport System.

2.19 In preparing the tender documents of SMARTICS 2, ImmD had strategically grouped the procurement requirements into five distinct categories (i.e. Category A: Core System; Category B: Smart Card and Card Personalisation and Management System; Category C: Multi-purpose Self-service Kiosk System and Cabinet System; Category D: Next Generation Tag System; and Category E: Next Generation Electronic Services System) to promote fair, open and competitive bidding. According to ImmD, the tender evaluation revealed that there was keen competition within each category as multiple proposals were received for all categories. Audit examination revealed that ImmD had conducted two market research exercises before tendering from October 2014 to August 2016 (Note 28). In the first market research exercise, ImmD had approached major vendors in the industry including the contractor of SMARTICS (Contractor A), which was a major vendor in the industry and key player in the SMARTICS project, to obtain price information of major components. In the second market research exercise, ImmD had not approached Contractor A. According to ImmD, approaching existing contractors when conducting market research could, as in some cases, lead to possible speculation of perceived advantages given to the existing contractors who had better knowledge of the service to be tendered if they were contacted. ImmD then prepared PTE based on the information available and other reference prices obtained from OGCIO. In the Tender Report submitted to CTB in March 2017:

- (a) PTE was worked out by ImmD according to the prices provided by various suppliers at the stage of feasibility study conducted in October 2014 and was further reviewed with reference to the latest prices of major system components provided by other vendors in August 2016; and
- (b) based on the tender prices of the offers received in this tender exercise, ImmD considered that PTE of the project was not realistic for reference.

Note 28: *In the second market research exercise, ImmD sent out enquiries to a total of 24 vendors (excluding Contractor A) in the market (3 vendors for Category A, 12 vendors for Category B, 6 vendors for Category C, 2 vendors for Category D and 1 vendor for Categories C and D) for price information but only 3 vendors (2 vendors for Category B and 1 vendor for Category D) responded to ImmD's enquiries.*

As a result, the unrealistic PTE could not provide a good reference for assessing the reasonableness of the tender sum (see para. 2.17). There was also scope for improving the accuracy of PTE in tendering of other goods and services (see paras. 3.17(c) and 3.25(b)).

2.20 *Need to take into account relevant factors to work out realistic PTEs.*

According to ImmD, there were difficulties in obtaining information from market players. Factors such as the willingness to compile/disclose realistic prices by potential tenderers in market research and the consideration of individual tenderers (e.g. goodwill and financial situation) might also have different degree of impact on the offer by different prospective tenderers. Those factors were beyond the knowledge of ImmD to assess and quantify. Moreover, there was no binding condition for a prospective tenderer who had submitted an estimate to offer the same price in the bidding stage. The uncertainty in derivation of PTE was further amplified for turnkey solution of high value and complexity as the spectrum and quantity of goods and services involved could be substantial and highly diversified. In Audit's view, in determining PTEs in future tendering, relevant factors including the market condition and economy of scale should be taken into account.

2.21 *Need to follow up with vendors to obtain the required information.*

In the tender exercise of the Next Generation Electronic Passport System, ImmD divided the procurement requirements into three categories (Note 29) to enhance market competition. According to the tender report of October 2017, PTE was worked out by ImmD according to the findings of the feasibility study for the System conducted in October 2014 and was further reviewed in April 2017. In this connection, ImmD said that it had worked out PTE of each category based on the market research conducted in 2014 and 2017. In the 2017 market research exercise for all the three categories, ImmD sent out 17 enquiries to 16 vendors in the market for price information but only 3 vendors responded to ImmD's enquiries. For Category B, ImmD made enquiries on the one-off price and recurrent maintenance price. In the replies from two vendors of Category B, only quotations of the one-off price and recurrent cost of contactless chip and data page were obtained and no information on recurrent maintenance price was provided. ImmD did not follow up with the

Note 29: *The three categories were: (a) Category A — Core System; (b) Category B — Data Page, Contactless Chip, and Travel Document Personalisation and Management System; and (c) Category C — Self-service Submission Kiosk, Self-service Collection Kiosk, and Cabinet System.*

two vendors to obtain the required price information and mainly made reference to OGCIO's Standing Offer Agreements (Note 30) in estimating the recurrent maintenance price. In the event, one of the two vendors submitted its bid and was awarded the contract for Category B. Audit examination revealed that the one-off tender price for Category B was lower than PTE. The contract price for total recurrent maintenance price was significantly lower than PTE. In October 2019, ImmD informed Audit that in working out PTE:

- (a) the vendors were not obliged to provide all information in the process as such provision was not mandatory. Besides, such information was only one of the contributors for consideration during the compilation of PTE; and
- (b) getting information from the vendors was not the sole input to the PTE especially for complicated systems as only high level requirements were given to some market players. Some current price information was also obtained from other sources, such as feasibility studies and Standing Offer Agreement prices.

Audit considers that, in order to work out realistic PTEs in future tender exercises, ImmD needs to make efforts to follow up with vendors to obtain the required information as far as practicable.

***Control over the use of funds resulting from
lower-than-estimated tender prices in CWRP projects***

2.22 According to paragraph 2.18, PTE of the five contracts were significantly above the contract price. As mentioned in paragraph 2.14, in Chapter 3 of the Director of Audit's Report No. 71 of October 2018, Audit recommended that FSTB should introduce measures to strengthen the control over the use of funds resulting from lower-than-estimated tender prices in CWRP projects once surplus is identified. In response, FSTB replied that for capital non-works projects approved by LegCo in the 2019-20 legislative session and thereafter, it would provide LegCo with quarterly

Note 30: *OGCIO and GLD arranged and managed Standing Offer Agreements for the procurement of information technology products and services by B/Ds, e.g. supply of network products and server systems and provision of related services, and provision of information technology professional services.*

reports on significant deviations between the accepted tender prices of the projects and the estimated provisions in the approved project estimates when the deviations equal or exceed \$15 million or 10% of the original estimated provision, whichever was greater. The excess would be reserved administratively. In this connection, while the five projects commenced before the 2019-20 legislative session, ImmD needs to remind its ICT project officers to ensure compliance with the requirements when there are significant deviations between the accepted tender prices of the projects and PTE after award of contracts in future.

Procurement issues identified in three ICT projects

2.23 Of the eight completed ICT projects from March 2009 to March 2018 (see Table 2 in para. 2.9), Audit selected three projects with delays and/or significant unspent balance as compared with the approved project estimate (see items 4, 6 and 8 in Table 2) for examination. Audit noted room for improvement in the procurement and implementation of the projects, as elaborated in paragraphs 2.24 to 2.43.

Phase III of ISS-2: Application and Investigation Easy System and Electronic Records Programme

2.24 In May 2004, ImmD obtained funding approval of \$336.8 million for implementing Phase III of ISS-2 (see item 6 in Table 2 of para. 2.9) which would cover: (a) the Application and Investigation Easy System (APPLIES) to support: (i) processing of applications for visas, permits, and travel passes; (ii) registration matters relating to births, deaths, and marriage; and (iii) investigation cases; and (b) the Electronic Records Programme to enable transactions in ImmD to be conducted digitally.

2.25 ***Tender exercise in 2004.*** Before the issue of the tender, ImmD took about three months to seek the advice of the Department of Justice and the Intellectual Property Department on refining the clauses of the tender documents. A tender was issued by GLD on behalf of ImmD in October 2004 for procuring APPLIES and Electronic Records Document Management System. By the close of tender in December 2004, four offers were received. After evaluation, two offers were found conforming. In July 2005, the contract was awarded to Contractor B with the higher combined score (i.e. combining price and quality scores) at a total cost of \$308.5 million. In the event, ImmD/GLD took some two months to conduct tender negotiations with the recommended tenderer.

2.26 ***Delay in rolling-out APPLIES and Electronic Records Programme.*** The actual roll-out date of APPLIES and Electronic Records Programme was December 2008, i.e. a two-year delay as compared to the target roll-out date of December 2006. According to ImmD, the delay was caused by:

- (a) long tendering process and contract negotiation process, resulting in a delay of seven months in the award of contract and consequential delays in subsequent stages, e.g. live-run date of the Immigration Imaging Centre had to be rescheduled;
- (b) extension of the system design and development stage in order to cope with a series of changes in immigration policy, including the introduction of the Civil Celebrants of Marriages Scheme, the Quality Migrant Admission Scheme and Immigration Arrangements for Non-local Graduates;
- (c) project complexity in the implementation process; and
- (d) the Contractor's substandard performance, viz. poor project and resource management, poor quality control, and sub-contractor management.

2.27 ***Contractor B's response.*** In view of Contractor B's substandard performance, ImmD issued an e-mail and two warning letters during the period from January 2007 to February 2008. In response to the warning letters, Contractor B said that:

- (a) the project progress had been hampered by the addition of a large number of out-of-scope items (i.e. not in the tender specifications);
- (b) many inputs during demonstrations could have been but were not provided earlier by ImmD;
- (c) the inputs from ImmD's end users differed from the earlier ones requested by ImmD's project team; and
- (d) continued changes were made to the functions and programs even at the late stage.

Procurement of information and communications technology systems

2.28 *No claim made for liquidated damages.* In August 2008, in its response to GLD's enquiry on whether claim should be initiated against Contractor B in view of the delay, ImmD said that it did not initiate claim for liquidated damages according to the contract because:

- (a) there was an underestimation of the magnitude and complexity of the project by the Contractor leading to prolonged development and testing;
- (b) owing to the implementation of new policies/initiatives of ImmD, the design of the system needed to be adjusted accordingly which lengthened the development and implementation processes; and
- (c) owing to the need to provide infrastructure for implementation of another information technology system, namely the Electronic Passport System, which had an immovable rollout deadline in early 2007, some project tasks had been re-prioritised.

ImmD considered that it was imperative to roll out the system to replace the then aging and obsolescent system. Without the timely replacement of the system, ImmD's public services would be immensely and adversely affected. On balance, ImmD decided not to initiate any claim on the Contractor for the delay.

2.29 *Additional measures to clear the backlog of file conversion and to cope with new operational requirements.* To cope with the workload in file conversion when rolling out APPLIES, a contract of \$24.7 million for file conversion services was awarded in February 2005. In response to the requests for more file conversion services (which were not covered by the contract), the original contract completion date in July 2008 was extended for one year to July 2009 with the original contract sum of \$24.7 million remaining unchanged. In July 2008, ImmD procured additional file conversion services by quotation from another service provider at a contract sum of \$0.76 million (see also para. 2.30) (Note 31). In August 2009, ImmD varied the contract with Contractor B at a sum of \$13.3 million to procure additional computer equipment (including 304 scanners), and enhance the main system and six sub-systems to cope with operational requirements which mainly stemmed from the new government policy and introduction of new services to members of the public.

Note 31: *The contract sum was subsequently increased to \$1.1 million by means of contract variation to cater for the increased service demands.*

2.30 *Need to recommend conducting PIRs.* Audit examination revealed that there was a two-year delay in the implementation of APPLIES and Electronic Records Programme. The delay not only led to the slippage of two years in achieving the intended benefits of savings in staff costs, but also resulted in incurring additional expenditures to clear the backlog of file conversion (see para. 2.29). Furthermore, unrealised savings were subsequently reported in the PIDR (see para. 2.31). However, as stated in the PIDR, ImmD did not recommend the conduct of a PIR to look into the causes of deviation and identify necessary improvement measures because:

- (a) all sub-systems were implemented and the project was completed within budget;
- (b) part of the savings could not be realised because of changes in some work processes; and
- (c) the delay in completion of the project was due to, among others, project complexities, the Contractor's substandard performance and extension of the system design and development stage to cope with a series of changes in immigration policies.

While ImmD had given a brief account on the underlying reasons for the significant delays and unrealisable savings in PIDR, Audit considers that the conduct of a full PIR would be beneficial to future project planning. Audit also considers that, for future ICT projects, in making recommendations on conducting PIRs, ImmD needs to take due consideration of significant delays and non-achievement of savings as stated in FC papers, where appropriate.

2.31 *Savings in staff costs not fully realised.* According to OGCIO Circular No. 3/2007, for administrative computer projects funded under CWRP Head 710, B/Ds are required to submit PIDRs to OGCIO six months after operation of the ICT projects to evaluate the achievement of the projects to ensure that the Government's investment in the projects has attained the intended objectives in a timely and cost-effective way. After examining PIDR results (such as whether there has been a substantial deviation from the planned achievements), OGCIO will determine whether to initiate a PIR to look into the causes of deviation and identify necessary improvement (see para. 2.7). According to the funding paper submitted to FC in May 2004, the implementation of APPLIES and Electronic Records Programme would bring about a saving of 159 posts (with annual recurrent savings in staff cost

Procurement of information and communications technology systems

of \$49.8 million). In PIDR submitted to OGCI, ImmD said that a saving of 33 posts (with an annual staff cost of \$9.6 million (19%)) could not be realised because:

- (a) in light of massive amount of sensitive personal data in registration of persons records and increased public awareness of personal data privacy in recent years, the incorporation of registration of persons records into Electronic Records Programme to enable direct access by internal and external stakeholders, as originally planned in the feasibility study stage, had not been implemented. Instead, it was considered that such kind of requests for registration of persons records needed to be assessed on a case-by-case basis by the Registration of Persons (Records) Office. Therefore, the manpower required in handling registration of persons records enquiries from other government departments could not be saved as planned; and
- (b) the Intelligent Character Recognition technology, as recommended for adoption during the feasibility stage with a view to reducing the amount of manual data entry for the capture of inputted information from documents/records, was found not mature enough during the implementation stage in providing a reasonably high recognition rate to meet the operational needs. The document scanning and indexing processes were subsequently revised and thus part of the savings from the document scanning and indexing processes could not be realised.

2.32 ***Need to be vigilant in estimating realisable savings.*** The saving of 33 posts (with an annual staff cost of \$9.6 million (19%)) could not be realised because of the operational issues relating to personal data privacy protection requirements and information technologies, i.e. Intelligent Character Recognition technology (see para. 2.31(a) and (b)). Audit considers that in developing similar systems in future, ImmD needs to improve its market research to ascertain the latest developments in operational requirements and information technologies. ImmD also needs to be vigilant in estimating realisable savings to ensure that such savings quantified in FC papers are achievable.

***Computer systems at Shenzhen Bay Control Point
and at Lok Ma Chau Spur Line Control Point***

2.33 ImmD obtained funding approval of \$176.6 million in April 2004 to install computer systems (including the Automated Passenger Clearance System (APCS) and Automated Vehicle Clearance System (AVCS)) for 91 passenger immigration counters (consisting of traditional and automated ones) and 118 vehicle kiosks at the Shenzhen Bay Control Point (i.e. item 8 in Table 2 of para. 2.9). In May 2005, ImmD also obtained funding approval of \$93.3 million for installing computer systems to 66 traditional passenger immigration counters and 70 automated passenger clearance channels at the Lok Ma Chau (LMC) Spur Line Control Point (i.e. item 4 in Table 2).

2.34 In the meantime, the implementation of APCS and AVCS also started to roll out at other immigration control points in December 2004 and April 2005 respectively under a contract (Contract C) awarded to Contractor C as recommended by CTB in March 2004. As stipulated in Contract C, the Contractor undertook to supply additional items as and when required by the Government within a period of 48 months from the contract date in order to meet the requirements of new control points. However, taking into consideration CTB's advice on ensuring fairness to potential service providers when acquiring additional requirements for future control points, ImmD decided to procure APCS and AVCS for Shenzhen Bay Control Point and LMC Spur Line Control Point by means of open tender.

2.35 ***Tender exercise.*** A tender for the supply and installation of APCS for 101 passenger clearance channels (Category A in the tender document — Note 32) and AVCS for 80 vehicle kiosks (Category B in the tender document — Note 33) was prepared and issued in November 2005. A tenderer could submit its tender for either category or both. In the event, 316 suppliers from Hong Kong and 32 suppliers outside Hong Kong were invited (as the invitation to tender was subject to the Agreement on Government Procurement of the World Trade Organization —

Note 32: *Of the 101 automated passenger clearance channels, 29 would be provided for Shenzhen Bay Control Point, 70 for LMC Spur Line Control Point and 2 for system development and user acceptance test.*

Note 33: *Of the 80 vehicle kiosks, 78 would be provided for Shenzhen Bay Control Point and 2 for system development and user acceptance test.*

Note 34). When the tender closed in January 2006, four offers from four tenderers were received. For APCS, two of three offers received were conforming. Tenderer D offered a total price higher than PTE and Tenderer E offered a total price lower than PTE. For AVCS, the only one offer received was non-conforming.

2.36 ***Tender evaluation.*** After evaluation, Tenderer D obtained a higher combined score than Tenderer E. However, Tenderer D's tender price was higher than PTE. In TAP's report submitted to GLD in March 2006, ImmD recommended that Tenderer D's offer should be accepted subject to the result of tender negotiations.

2.37 ***Tender negotiations.*** In April 2006, the Director of Government Logistics gave approval to conduct tender negotiations with Tenderer D in accordance with SPR 385 requirements (Note 35) in order to obtain a better price for the high-value purchase. After negotiations, Tenderer D agreed in June 2006 to reduce the tender price, which was still higher than PTE. In the event, ImmD also obtained a reference price of supplying the service from Contractor C, which was lower than PTE (see para. 2.34).

2.38 ***Cancellation of tender.*** ImmD considered that the negotiation result was not favourable to the Government in that the revised total price of Tenderer D's offer was still higher than PTE and the reference price of supplying the service from Contractor C. Moreover, the total price of Tenderer E's offer was also higher than Contractor C's reference price. After seeking the Department of Justice's advice, ImmD sought CTB's approval in July 2006 to cancel the tender on the grounds of public interest for APCS and having no conforming offer for AVCS. In July 2006, CTB approved the cancellation of the tender. In the event, ImmD requested Contractor C to supply APCS to LMC Spur Line Control Point and Shenzhen Bay Control Point in July 2006 and February 2007 respectively. In August 2007, ImmD

Note 34: *The Agreement applies to procurement contracts of goods and specified services of all government B/Ds with a value of not less than 130,000 Special Drawing Rights (equivalent to \$1.4 million for the period 1 January 2018 to 31 December 2019).*

Note 35: *SPR 385 stipulates, among others, that where it would be in the Government's best interest to negotiate with a tenderer or tenderers, such negotiations shall be conducted in a non-discriminatory manner among different tenderers.*

issued acceptance certificates for the roll-out of APCS at the two Control Points (Note 36).

2.39 ***Re-tendering of AVCS.*** In September 2006, AVCS (Category B) for 40 lanes at Shenzhen Bay Control Point was re-tendered. In the second tender exercise, some of the mandatory requirements in the original tender exercise became optional requirements (e.g. private car passenger clearance solution). At the close of tender, three offers from two tenderers were received. After evaluation, three offers were all conforming. In March 2007, the contract was awarded to the tenderer with highest combined score at a one-off cost of \$53.8 million and an annual recurrent cost of \$4.7 million for mandatory requirements and at a one-off cost of \$29.3 million and an annual recurrent cost of \$6.4 million for optional requirements for private car passenger clearance solution and set-up of AVCS Training Centre. In April 2008, ImmD informed the Contractor that AVCS at the Shenzhen Bay Control Point passed the system acceptance tests under the mandatory requirements (Note 37) in February 2008.

2.40 ***Audit examination.*** Audit appreciates the efforts made by ImmD/GLD to conduct tender negotiations with Tenderer D and cancel the tender on the grounds of public interest after the negotiations could not obtain the intended result with a view to protecting the Government's interest. Audit examination found that:

- (a) according to the Tender Report of March 2006 submitted to GLD, ImmD recommended tender negotiations with Tenderer D in order to obtain a better price (i.e. the reference price). However, ImmD also expressed that APCS was scheduled for roll-out at Shenzhen Bay Control Point and LMC Spur Line Control Point in October 2006. In view of the extremely tight project schedule, ImmD intended to go for Tenderer E in the event that the negotiation items could not be resolved with Tenderer D timely. If Tenderer E also failed to meet the target estimated project cost after tender negotiations, ImmD recommended to perform contract variation with Contractor C. In the event, three months (from April to June 2006) were spent on the tender negotiations; and

Note 36: *The actual commission dates for Shenzhen Bay Control Point and LMC Spur Line Control Point were July and August 2007 respectively.*

Note 37: *According to ImmD, the optional requirements of passenger clearance solution and set-up of AVCS Training Centre were not pursued.*

- (b) before CTB gave approval to cancel the tender, FSTB asked why ImmD did not consider conducting tender negotiations with Tenderer E after the unsuccessful negotiations with Tenderer D. In response, ImmD said that Tenderer E would unlikely offer a great price concession and in view of the tight time frame (with target commission date of LMC Spur Line Control Point in November 2006). Besides, it could not afford to conduct another round of negotiations which might take months. However, Audit could not find any documentation supporting ImmD's comments that Tenderer E would unlikely offer a great price concession.

2.41 *Need to consider setting a price ceiling as a reserve price.* Both the prices offered by Tenderer D (with highest combined score) after tender negotiations and Tenderer E (with second highest combined score) were higher than the reference price offered by Contractor C. According to SPR 347(a), Government departments should not normally disclose the estimated contract value to the tenderers as it might become a main guiding factor in the preparation of their tender proposals, which might be reduced or expanded unnecessarily, thus undermining the principles of competition and value for money. In this case, the main purpose of the tender exercise was to obtain a better value-for-money offer from the market than that offered by Contractor C (i.e. to obtain an equivalent if not better offer). Given the financial and time constraints and the alternative of requiring Contractor C to supply the service under Contract C, a better option could be setting a price ceiling equal to Contractor C's reference price as a reserve price for internal reference at the outset (i.e. the tender exercise would be cancelled if the price of the most advantageous tender was higher than the reserve price). While noting that setting a price ceiling as a reserve price is not a norm, such arrangement would help ImmD identify the best value-for-money offer in future similar tender exercises.

2.42 *Need to critically review the need for including stringent tender requirements as mandatory requirements.* For AVCS (Category B), there was only one non-conforming offer received in the first tender exercise (see para. 2.35) and the tender exercise had to be cancelled. With the approval of CTB, a new tender was issued in September 2006. In August 2006, before issuing the new tender, GLD requested ImmD to review the tender requirements with a view to drawing up the revised requirements with pragmatic terms. In response, ImmD re-classified the tender requirements into mandatory and optional requirements with a view to attracting more bidders:

- (a) in the cancelled tender exercise, tenderers were mandatorily required to propose private car passenger clearance solution which had not been implemented in the then existing control points. In the re-tender exercise, it was included as an optional requirement (see para. 2.39); and
- (b) in the cancelled tender exercise, tenderers were required to use multi-biometrics verification solution (i.e. fingerprint and face recognition) which had not been implemented at other control points before. Such requirement became optional in the new tender document.

With the changes from mandatory requirements to optional ones, ImmD considered that there would be sufficient qualified suppliers for the second tender. In the second tender of September 2006, three offers were received and they were all conforming offers (see para. 2.39).

2.43 According to SPR 109(c), over-specification and over-prescription in product requirements or mode of service delivery should be avoided. In future tender exercises, ImmD needs to include only essential requirements and avoid imposing stringent requirements in the tender documents which may deter suppliers to submit their bids.

Audit recommendations

2.44 **Audit has *recommended* that the Director of Immigration should:**

- (a) **after completion of main contracts of an ICT project, continue to report project activities to OGCIO until closure of the project subhead;**
- (b) **initiate actions to close an ICT project subhead when all the project expenditures are settled after project completion;**
- (c) **strengthen control over the use of surplus project funds in ICT project subheads and inform FSTB of funds surplus to requirements under an ICT project subhead so that the surplus may be reserved in accordance with F&AR 320;**

Procurement of information and communications technology systems

- (d) report to FSTB when identifying surplus funds arising from lower-than-estimated tender prices in an ICT project approved by LegCo in future;**
- (e) clearly define the scope of an ICT project in the funding application and state clearly in the funding paper if any surplus funds would be used for implementing new ICT systems at new control points in future;**
- (f) in future tender exercises of ICT projects:**
 - (i) take into account relevant factors including the market condition and economy of scale in determining PTEs;**
 - (ii) follow up with major vendors to obtain required information as far as practicable in order to work out realistic PTEs;**
 - (iii) where there are financial and time constraints in project implementation and there is an alternative of requiring a contractor to provide the ICT systems under an existing contract, consider setting a price ceiling equal to the contractor's reference price as a reserve price for internal reference; and**
 - (iv) include only essential requirements in the tender documents and avoid imposing stringent requirements which may deter suppliers to submit their bids;**
- (g) in making recommendations on conducting PIR when preparing PIDR for submission to OGCIO, take due consideration of significant delays and non-achievement of savings as stated in FC papers, where appropriate;**
- (h) in developing ICT systems in future, improve market research to ascertain the latest developments in operational requirements and information technologies; and**
- (i) be vigilant in estimating realisable savings from implementing ICT systems to ensure that such savings quantified in FC papers are achievable.**

Response from the Government

2.45 The Director of Immigration generally agrees with the audit recommendations.

PART 3: PROCUREMENT OF OTHER GOODS AND SERVICES

3.1 This PART examines ImmD's procurement of goods and services (other than ICT projects the procurement of which is covered in PART 2).

Procurement by tender

3.2 According to SPR 220, B/Ds shall follow tender procedures when making purchases of goods and services exceeding \$1.4 million. From 2014-15 to 2018-19, ImmD conducted seven tender exercises for goods such as hardware and software for ICT systems, government office automation system and electronic cabinets for the Electronic Passport System. Total contract value of goods procured through the seven tender exercises was \$26.4 million. In addition, during the same period, ImmD concluded 58 service tenders with a total contract value of \$689.2 million. Such services included: (a) security guard services; (b) information technology services; (c) transport services; (d) medical services; (e) catering services; and (f) provision of uniform services.

Areas for improvement

3.3 *Audit examination.* Audit examined 33 (51%) of the 65 (7 + 58) procurement exercises of goods and services by tender and found the following areas for improvement:

- (a) provision of transport services to the Castle Peak Bay Immigration Centre (paras. 3.4 to 3.13);
- (b) provision of catering services at the Castle Peak Bay Immigration Centre (paras. 3.14 to 3.17);
- (c) provision of uniform services (paras. 3.18 to 3.24); and
- (d) procurement guidelines (para. 3.25).

***Provision of transport services to
the Castle Peak Bay Immigration Centre***

3.4 The Castle Peak Bay Immigration Centre (CIC) is an immigration detention facility for detaining immigration offenders (18 years old or above) who are awaiting repatriation/removal/deportation in accordance with the Immigration Ordinance. From time to time, officers of CIC need to escort detainees outside the Centre for different purposes such as medical appointment, court attendance, and bedside guard. Taking into account the cost-effectiveness and the flexibility in service deployment, ImmD has outsourced the transport services.

3.5 ***Tender exercise in 2017.*** From April 2016 to September 2017, transport services for CIC were procured by two separate quotations for a period of about 18 months at a total cost of some \$970,000 (Note 38). With a view to achieving better economy of scale and saving the administrative costs, ImmD decided to procure the transport services by tender (instead of quotation) and extend the contract period to 36 months from 15 September 2017 to 14 September 2020. The successful contractor is responsible for the provision of transport services, namely regular transport service (i.e. from 8 am to 5:30 pm, Monday to Friday, except public holidays) and additional transport services (e.g. extension of service hours). The contractor is required to provide a vehicle (with a minimum seating capacity of 16 passengers) with hydraulic platform for wheelchair with a driver in accordance with the service conditions specified in the tender document. A tender notice of the 36-month service was gazetted in March 2017. Tender notifications were sent out to 36 local service providers and the Trade Commissioners of overseas countries in Hong Kong (as the invitation to tender was subject to the Agreement on Government Procurement of the World Trade Organization — see Note 34 to para. 2.35). Upon the close of tender on 2 May 2017, two tenderers submitted their bids. The two offers received were both significantly lower than PTE. In August 2017, the contract was awarded to the lower conforming

Note 38: *A quotation exercise covering a 12-month period from 1 April 2016 to 31 March 2017 was conducted in early 2016 at a cost of some \$650,000. ImmD conducted another quotation exercise and the contract covered a six-month period from 1 April 2017 to 30 September 2017 at a cost of some \$320,000. However, the commitment of the 12-month contract would be used up before the contract end date (i.e. 31 March 2017). To ensure continuity of the transport services, it was agreed to commence the new 6-month contract on 15 March 2017. According to ImmD, the 6-month contract was a stop-gap measure to allow sufficient time for preparing the tender exercise covering the period from 15 September 2017 to 14 September 2020.*

Procurement of other goods and services

bidder at an estimated total amount of \$2.79 million for a period of 36 months commencing from 15 September 2017.

3.6 ***Basis of PTE.*** In January 2017, CIC raised a funding request for the procurement of the transport services. According to the funding request form, PTE was based on the estimated contract value of a cancelled quotation for provision of a vehicle with hydraulic platform with a 15% allowance for annual price increase (comprising 4% for annual inflation, 6.7% for annual salary adjustment and 4% for contingency) over the 36-month period.

3.7 ***Queries raised by SSD.*** In the course of preparing the tender document, SSD informed CIC in February 2017 that from the experience of four ImmD's renewed transport service contracts, the new contract prices, on average, were 25% lower than their preceding contracts. SSD also commented that the underlying inflation rate as indicated in the 2017-18 Budget was expected to be 2.5% per annum (i.e. lower than the 4% used by CIC). Besides, SSD reminded CIC that according to SPRs, a user section needed to explain why it considered realistic to accept a tender if the tendered sum was significantly higher or lower than PTE or the sum allowed for the contract in the approved project estimate. As such, SSD advised CIC to adjust PTE. In late February 2017, CIC informed SSD that after some internal discussions, PTE should remain unchanged with no justifications given. SSD further consulted the Transport Unit which had no further comment on PTE. The PTE was therefore accepted for the tender exercise.

3.8 ***Tender report.*** In July 2017, TAP submitted a tender report to DTC recommending acceptance of the lower conforming offer. According to the report, PTE was based on the estimated contract value of a cancelled quotation for provision of a vehicle with hydraulic platform with a 15% allowance for annual salary adjustment and a one-off 7.5% allowance for contingency (for possible upsurge of contract price). In explaining the significant difference between the estimated contract value (submitted in the lower conforming tender) and PTE, TAP said that:

- (a) the significant difference might attribute to the lower monthly investment cost of installation of a hydraulic platform over a longer span of 36 months; and

- (b) owing to greater competition in the market, the new competitor might have taken more aggressive approach to join the market and offered lower prices.

Audit examination of the tendering on the provision of transport services to CIC revealed scope for improvement as elaborated in paragraphs 3.9 to 3.13.

3.9 *Need to take measures to improve the accuracy of PTE.* In August 2017, in approving the award of the contract, DTC noted that there was a significant over-estimation of PTE and commented that:

- (a) the mark up of PTE by 15% per year with an additional 7.5% for contingency was not well justified;
- (b) wage had been the dominating consideration in drawing up PTE. DTC suggested that other relevant factors (such as the recent market trend, the demand and supply of the transport services, the oil prices and the projected inflation rate) should also be taken into account as appropriate; and
- (c) the subject section was recommended to consider conducting a pre-tender market research for a more realistic PTE in future.

Similar to the audit findings in paragraph 2.20, ImmD needs to take measures to improve the accuracy of PTEs (e.g. consider conducting more thorough market research and taking more factors into account when determining PTEs) (see also para. 3.25(a) and (b)).

3.10 *Need to properly document justifications for major decisions and changes.* As shown in paragraphs 3.6 and 3.8, the basis in estimating PTEs as stated in the funding request form (i.e. including a 15% allowance for annual price increase) and that in the tender report submitted to DTC by TAP (i.e. including a 15% allowance for annual salary adjustment and a one-off 7.5% allowance for contingency) was not consistent. However, there were no documented justifications for such change. Besides, there was also no documentation on the justifications for not adjusting PTE downwards by CIC despite SSD's advice (see para. 3.7). In Audit's view, to facilitate the evaluation of the tender by the approving authority, ImmD needs to properly document the justifications for major changes for management review and future reference.

Procurement of other goods and services

3.11 *Transport services using a vehicle equipped with a hydraulic platform.* Since April 2011, ImmD had requested contractors to provide a vehicle equipped with a hydraulic platform to facilitate transportation of wheelchair users and window bars (Note 39). However, ImmD noted that a vehicle equipped with a hydraulic platform was scarce in the market. Subsequently, CIC reviewed the need for a hydraulic platform as well as the cost-effectiveness of the equipment. In the event, such requirement was relaxed in the quotation exercise in 2016. In 2016, there were two non-urgent cases requiring the use of vehicle equipped with a hydraulic platform (the records for urgent cases were not complete). To meet the requirement, ImmD had either made arrangements in advance for procuring such service through a separate quotation or used the ambulance services for urgent cases (e.g. detainees requiring medical attention).

3.12 *2017 tender exercise.* When preparing the tender exercise for 2017, CIC further reviewed the need for transport services for a vehicle equipped with a hydraulic platform and considered that such requirement was essential to meet the operational needs because: (a) urgent escort of disabled, injured and/or emotionally unstable detainees did not allow CIC to arrange coaches with hydraulic platform seven days prior to the escort duties; and (b) staff and detainees were highly vulnerable to injury during escort duties without the assistance of a hydraulic platform. As a result, the requirement was included in the 2017 tender exercise. The additional costs on the regular services to be provided over the 36-month contract period would be \$414,000 (averaging some \$11,500 per month).

3.13 *Need to evaluate different options for procurement of transport services using a vehicle equipped with a hydraulic platform.* According to CIC, during the period from November 2015 to November 2016, requests for using a vehicle equipped with a hydraulic platform were only made in three booking orders in normal cases. In this connection, Audit reviewed all the 4,514 booking orders for escorting detainees at CIC from January 2017 to June 2019 and noted that the demand for using a vehicle equipped with a hydraulic platform remained low (only 6 cases (0.1%) over the 30 months, i.e. averaging 0.2 case per month). In light of the average monthly cost of \$11,500 (see para. 3.12) for the service, ImmD needs to consider conducting a cost and benefit analysis to evaluate all the options available (e.g. arranging a separate quotation for such service) before the next tender exercise, taking into account CIC's

Note 39: *According to ImmD, vehicles equipped with window bars were desirable from security and safety points of view.*

operational needs and the low demand for such service. This will help improve the cost-effectiveness in procuring the service.

Provision of catering services at the Castle Peak Bay Immigration Centre

3.14 The detainees in CIC are provided with meals daily including breakfast, lunch, dinner and night snack. Since April 2010, ImmD has contracted out the catering service and conducted five tender exercises for the provision of catering services at the Centre.

3.15 ***Tender exercise in 2015.*** In October 2015, ImmD invited suppliers to submit tenders for a 36-month service contract (i.e. from 15 April 2016 to 14 April 2019) for the provision of catering services at CIC. Tender notifications were sent to 35 potential local service providers (Note 40). By the close of tender on 13 November 2015, three offers were received. After completion of tender evaluation, the service contract was awarded to the lowest conforming offer from the incumbent contractor (Contractor F) since April 2013 at an estimated contract price of \$47.4 million, which was significantly lower than PTE. According to the analysis conducted by TAP and submitted to CTB in January 2016, the difference was attributable to the following factors:

- (a) Contractor F had been the service provider since April 2013, which might have gone through the learning curve in the past years, and could attain cost savings through higher working efficiency in the coming contract;
- (b) it was believed that the tenderers could enjoy significant benefit from economy of scale through bulk purchase of food (with larger quantities of meals in the contract) and the depreciation of Renminbi, which might enable the tenderers to attain a lower overall purchasing cost. These factors had not been taken into account in PTE. With hindsight, the three offers received were all significantly lower than PTE and it reflected that PTE was likely to be over-conservative; and

Note 40: *The tender was not covered by the Agreement on Government Procurement of the World Trade Organization.*

Procurement of other goods and services

- (c) it was revealed from the 2015-16 interim report of the holding company of Contractor F that the overall performance of catering business for the period had, to some extent, reflected a downturn in retail sentiments, driven by the weakening economy. Contractor F had made efforts to secure new projects and extend its existing contracts.

3.16 ***Tender exercise in 2018.*** In December 2018, ImmD invited suppliers to submit tenders for a 36-month service contract (i.e. from 15 April 2019 to 14 April 2022) for the provision of catering services to CIC. Tender notifications were sent to 39 potential local service providers. By the close of tender on 4 January 2019, three offers were received. The service contract was awarded to the lowest conforming offer from Contractor F in March 2019 at an estimated contract price of \$43.1 million, which was lower than PTE.

3.17 ***Areas for improvement.*** Audit noted that there were areas for improvement in ImmD's tender process, as follows:

- (a) ***CTB's observations.*** In March 2019, while approving the award of the contract to Contractor F, CTB made the following comments:
 - (i) ImmD had substantially increased the value of contract for counting tenderer's experience in providing catering services with a contract period of not less than 12 months, from \$1.43 million in the previous tender exercise to \$10 million in the current exercise. Such a high threshold of annual contract value for the subject contract was over-stringent and uncommon in other government tenders involving catering services;
 - (ii) ImmD would need to remove the experience essential requirements for future tender exercises in line with the new pro-innovation government procurement policy to be effective from 1 April 2019 (see para. 1.4(d)); and
 - (iii) the successful tenderer would have been the incumbent contractor for some nine years upon completion of the new contract. From a risk management angle, the Board urged ImmD to take action to map out a tendering strategy to enhance competition and avoid over-reliance on a single contractor.

According to Financial Circular No. 2/2019, to encourage competition in procurement and minimise entry barriers, as a general rule, tenderer's experience should not be set as essential requirement, irrespective of the value of procurement. However, the experience, qualification or certification may still be one of the assessment criteria and are capped at 15% of the total technical marks of Standard Marking Scheme Framework set out in the Financial Circular. Audit considers that ImmD needs to take into account CTB's comments in preparing for future tender exercises and incorporate the relevant principles in ImmD's procurement guidelines where appropriate;

- (b) ***Need to improve market research work.*** In February 2019, FSTB asked ImmD whether pre-tender market research had been conducted to ascertain the number of potential tenderers who could meet all the essential requirements and would be interested in participating the tender exercise with a view to ensuring sufficient competition. In response, ImmD said that as three tenderers had submitted their offers in the 2015 tender exercise, it was expected that there would be sufficient potential tenderers which were interested in the current tender. As such, no pre-tender market research work had been conducted; and
- (c) ***Significant difference between PTE and contract price.*** In explaining the difference between PTE and the contract price in the tender report for the tender exercise in 2015, CIC said that the economy of scale through bulk purchase of food, depreciation of Renminbi and competition in the catering industry were important factors that might affect the tender price of a bidder. However, PTE used by ImmD in the 2018 tender exercise was solely based on the contract price of the 2015 tender exercise plus an annual increase of about 3% to cater for increase in workers' salaries and general inflation in the coming three years. As far as Audit could ascertain, factors identified by CIC in the 2015 tender exercise were not included in determining PTE. Audit noted similar inadequacies in the tendering of ICT systems (see para. 2.20 and the recommendation for improvement in para. 2.44(f)(i)).

Provision of uniform services

3.18 The provision of uniform services for service grade staff of ImmD includes taking measurements and making the uniform. From November 2014 to March 2019, ImmD conducted four tender exercises for the provision of uniform services.

3.19 ***First tender exercise in November 2014.*** In November 2014, ImmD invited tenderers to bid for the services for a period of 24 months from 2 April 2015 to 1 April 2017. Tender notifications were sent to seven potential local service providers. According to the tender documents, a tenderer:

- (a) should have at least 5 aggregate years of experience in the provision of uniform services for government disciplined services within the past 10 years immediately prior to the tender closing date;
- (b) should have completed one or more contracts with a contract period of at least 12 consecutive months and with an annual contract value of not less than \$1 million in the provision of uniform services; and
- (c) should employ, among others, at least 200 staff for production, 10 tailors, and 5 staff for quality assurance/control (Note 41).

By the close of tender in December 2014, only one conforming offer from the incumbent contractor (Contractor G) was received and the price offered was \$3.99 million. TAP noted that the overall average unit price had increased by 19.5% when compared with the last quotation exercise. TAP considered that the price increase was too high and recommended conducting price negotiations with the tenderer in accordance with SPR 385 (see Note 35 to para. 2.37). In the event, DTC's approval was obtained in accordance with SPR 385 for conducting the negotiations. After negotiations, the tenderer agreed to reduce the tender price by \$176,000 to \$3.81 million. While approving the acceptance of the recommended offer, DTC commented that the tender specifications as well as the essential requirements should

Note 41: *There was no change in the essential capacity requirements in all four tender exercises with tender documents issued during 2014 to 2018.*

be reviewed and refined with a view to encouraging competition in accordance with the then SPR 350(j) (Note 42) when conducting tender exercises in future.

3.20 *Second tender exercise in July 2016.* In July 2016, ImmD invited tenderers to bid for the services for a period of 24 months from 2 April 2017 to 1 April 2019. Tender notifications were sent to 18 potential local service providers. Taking into account DTC's advice and operational needs, the minimum tenderer's experience was changed from at least an aggregate of five years to two years in the provision of uniform services for government disciplined services within 10 years immediately prior to the original tender closing date. However, the annual contract value for completed contract of not less than \$1 million (see para. 3.19(b)) had been revised upwards to \$1.43 million. According to the Tender Report, the increase in the annual contract value was to tally with other service tenders of ImmD. By the close of tender in August 2016, two offers were received (including the higher offer from Contractor G).

3.21 *Cancellation of the second tender exercise in November 2016.* After tender assessment, TAP found that the two tenderers failed to comply with the essential requirements that they had completed one or more contracts with an annual contract value of not less than \$1.43 million in the provision of uniform services. The annual contract values for the two tenderers were \$1.06 million and \$1.42 million respectively. With the approval of DTC, the tender exercise was cancelled on 15 November 2016.

3.22 *Third tender exercise in November 2016.* After cancelling the unsuccessful tender exercise on 15 November 2016, ImmD relaxed the essential requirement on annual contract value from "not less than \$1.43 million" to "over \$1.3 million" (Note 43). On 25 November 2016, SSD arranged an open tender for the supply of the services. By close of tender on 10 January 2017, two offers were received

Note 42: *The then SPR 350(j) has been replaced by SPR 350(m) but the requirements are the same. According to SPR 350(m), in case of re-tender, departments should, in the light of the degree of market competition in the past procurement exercises, review and refine the tender specifications as well as essential requirements and marking scheme with a view to encouraging competition.*

Note 43: *ImmD considered that by reducing the financial limit, some tenderers should be able to pass the threshold.*

Procurement of other goods and services

(including the higher offer from Contractor G). After the tender assessment, the lower-offer tenderer failed to meet the essential requirement on the annual contract value for completed contract and was disqualified. On 23 February 2017, ImmD awarded a contract to the only conforming offer from Contractor G at a contract sum of \$4.8 million.

3.23 *Fourth tender exercise in December 2018.* In December 2018, ImmD invited tender for the services for a period of 24 months commencing from 2 April 2019 or from the tender acceptance date, whichever was the earlier. Tender notifications were sent to 59 potential local service providers. By close of tender on 24 January 2019, three offers were received. After tender assessment, the lowest bid failed to meet the essential requirements on experience and working capacity (see para. 3.19(c)), and was disqualified. On 6 March 2019, the contract was awarded to Contractor G. Its bid was the lowest conforming offer at a contract sum of \$2.96 million (Note 44).

3.24 *Areas for improvement.* Audit noted areas for improvement in the four tender exercises, as follows:

- (a) ***Need to consider reviewing tender requirements in accordance with SPRs.***
Audit noted that DTC made comments in the first tender exercise in November 2014 that tender specifications as well as the essential requirements should be reviewed and refined with a view to encouraging competition in accordance with the then SPR 350(j) (now SPR 350(m)) when conducting tender exercises in future. In the second tender exercise in July 2016, the essential experience requirement of a tenderer in terms of annual contract value for the completed contract was revised upwards by 43% from not less than \$1 million in the first tender exercise to \$1.43 million. According to ImmD, the revision was made to ensure that the bidders possessed adequate tender experience to be capable of performing the uniform services contract to the Department's satisfaction, and to tally with other service tenders of the Department. Audit considers that each service tender may have different requirements and needs to be

Note 44: *The original price schedule submitted by Contractor G was \$4.37 million. On 23 January 2019 (i.e. one day before tender closing date), Contractor G submitted a revised price schedule and the tender price was revised downwards to \$2.96 million. Contractor G stated that the revised tender price was worked out after re-estimation of the workmanship and logistics costs.*

considered on a case-by-case basis. ImmD needs to consider reviewing tender requirements in each tender exercise in accordance with SPRs in future;

- (b) ***Need to consider conducting more thorough market research.*** In the second tender exercise in July 2016, ImmD had not conducted market research to ascertain whether there were adequate suppliers which could fulfil the revised essential experience requirement. In the event, the tender exercise had to be cancelled because no tenderer (including the incumbent contractor) could fulfil the revised requirement;
- (c) ***Need to consider conducting price negotiations to obtain the most advantageous terms for the Government.*** In the second and third tender exercises in July and November 2016, the offer price from Contractor G (the incumbent contractor) was \$4.8 million in both cases which was significantly higher than the offers from the unsuccessful tenderers. While these bids were disqualified because of their failure to comply with the essential requirement (see paras. 3.21 and 3.22), they could give an indication on the market price and price negotiations with Contractor G might be warranted. Based on past experiences, Contractor G was willing to reduce its tender price (see para. 3.19 and Note 44 to para. 3.23); and
- (d) ***Need to monitor compliance with essential requirement in warranted cases and take follow-up actions.*** As mentioned in paragraph 3.19(c), the tender documents in the four tender exercises had specified the working capacity of a contractor (in terms of number of staff) (see Note 41 to para. 3.19). Audit noted that in August 2018, ImmD conducted a quotation exercise for the urgent provision of uniform services to new recruits of 14 induction courses, specifying the same essential working capacity in the quotation. The offer from Contractor G (incumbent contractor) was the preferred offer but according to the quotation document submitted, its working capacity fell short of the minimum requirements (e.g. only 100 staff for production instead of 200 as required). However, there was no evidence showing that ImmD had taken any follow-up actions. In response to Audit's enquiry in July 2019, ImmD said that:
 - (i) an honour system had been adopted in the quotation/tender exercises for provision of uniform services by requesting the suppliers to declare their working capacity;

Procurement of other goods and services

- (ii) in case the contractor failed to perform the services to ImmD's satisfaction, it had the right to reject the services and withhold payment until the defects had been rectified and to claim all losses, costs and expenses in accordance with the provisions of the contract;
- (iii) having regard to the stated working capacity of 200 staff in a re-quotation issued on 24 August 2018, which was the same as that provided in the third tender exercise in November 2016, ImmD considered it reasonable to believe that Contractor G might have made a typographical mistake (e.g. 100 staff in the previous quotation which was eventually cancelled on 20 August 2018); and
- (iv) since the re-quotation was issued on 24 August 2018, which closely followed the cancellation of the previous quotation on 20 August 2018, ImmD considered it not desirable to contact Contractor G at that time to avoid giving it any perceived interest/advantage over other bidders.

While noting ImmD's explanations, Audit considers that ImmD needs to take measures to ensure that all the essential requirements are always complied with during the contract period. In particular, when suspected non-compliance was revealed from other sources, ImmD needs to take follow-up actions where appropriate (e.g. request the contractor to provide evidence of working capacity to meet the relevant requirements).

Procurement guidelines

3.25 ImmD has issued and updated departmental circulars to promulgate procedures for procurement. The circular on Departmental Procurement of Stores, Services and Revenue Contracts was last updated in February 2018. Audit examination revealed the following areas for improvement:

- (a) ***Need to consider including requirements of conducting a market research in departmental guidelines.*** As pointed out by DTC in paragraph 3.9, one of the reasons for over-estimation of PTE was inadequate market research. Apart from the cases mentioned in paragraphs 3.9, 3.17(b) and 3.24(b), Audit examination of 33 tender exercises revealed that ImmD had not approached potential tenderers for conducting market research work for

26 (79%) tender exercises. In this connection, Audit noted that according to SPR 350(e) and Financial Circular No. 2/2019, departments are encouraged to reach out to the market and conduct a market research to better understand the goods or services likely to be available in the market, technological trends, number of potential bidders, etc. To meet this requirement, ImmD needs to consider including the requirements of conducting a market research (where appropriate) in its guidelines with a view to improving the procurement process in future;

- (b) *Need to work out realistic PTEs.* As mentioned in paragraphs 3.9 and 3.17(c), DTC and CIC commented that apart from salary increase and inflation, other factors were also useful in determining PTEs (e.g. oil price and foreign currency exchange rate). In this connection, Audit examination revealed that of the 33 procurement exercises examined, the discrepancy between PTEs and the contract prices had exceeded 20% in 19 (58%) exercises, and most of them mainly used the current contract prices adjusted by estimated inflation rates to determine PTEs. Audit noted similar inadequacies in the tendering of ICT systems (see para. 2.20 and the recommendation for improvement in para. 2.44(f)(i)); and
- (c) *Need to incorporate new requirements in procurement guidelines.* In March 2019, FSTB issued Financial Circular No. 2/2019 to promulgate details of the new pro-innovation government procurement policy, revisions to SPRs and measures to facilitate the participation of market players in government procurement. In this connection, many new measures are related to procurement by tender, e.g. more extensive use of marking schemes and the concept of value for money in procurement. In this regard, ImmD needs to incorporate the new requirements and formulate the relevant guidelines in its departmental circulars.

Audit recommendations

3.26 **Audit has recommended that the Director of Immigration should:**

- (a) **in future tender exercises:**
 - (i) **properly document the justifications for major decisions and changes for management review and future reference;**

Procurement of other goods and services

- (ii) **conduct a cost and benefit analysis to evaluate different options for procuring vehicle transport services with a hydraulic platform, taking into account the operational need and the low demand for such services;**
 - (iii) **take into account CTB's comments mentioned in paragraph 3.17 (e.g. removing essential requirements on experience) and incorporate the relevant principles into ImmD's procurement guidelines where appropriate;**
 - (iv) **review tender requirements where appropriate in accordance with SPRs; and**
 - (v) **conduct price negotiations in warranted cases;**
- (b) **when suspected non-compliance with the essential requirements in a contract is revealed from other sources, take follow-up actions where appropriate to ensure that all the essential requirements are always complied with during the contract period; and**
- (c) **review and update the procurement guidelines where appropriate, taking into account the audit findings in paragraph 3.25, including incorporating into the guidelines the new requirements on the new pro-innovation government procurement policy as laid down in Financial Circular No. 2/2019.**

Response from the Government

3.27 The Director of Immigration generally agrees with the audit recommendations.

Procurement by quotation

3.28 For procurement of goods and services not exceeding \$1.4 million (or \$1.43 million prior to January 2018), procurement department may invite

verbal/written quotations from prospective suppliers instead of conducting tender exercises (see Figure 1 in para. 1.8). According to ImmD's procedures:

- (a) procurement with a value not exceeding \$50,000 shall be approved by the Assistant Supplies Officer or above; and
- (b) procurement with a value exceeding \$50,000 but not exceeding \$1.4 million shall be approved by the Supplies Officer, Senior Supplies Officer, Chief Executive Officer or Principal Executive Officer.

Areas for improvement

Need to enhance competition in procurement by quotation

3.29 According to SSD's records, there were 1,046 purchases of goods and services involving quotation exercises from 2016-17 to 2018-19 with values exceeding \$50,000 each and the total contract value involved was \$410.8 million. Of the 1,046 purchases by quotation, Audit selected 200 for examination and found limited competition in 122 (61%) purchases, as follows:

- (a) in 77 (38.5%) purchases, although bid invitations had been sent to 5 to 36 suppliers, only one bid was received; and
- (b) in 45 (22.5%) purchases, although bid invitations had been sent to 5 to 41 suppliers, only two bids were received.

3.30 According to SPRs (Note 45), for procurement with limited competition in past exercises, departments should explore measures to enhance competition and satisfy themselves that the tendering or consultants selection strategy to attract new bidders is effective. In view of the limited competition in 61% (38.5% + 22.5%) of the 200 quotation exercises, ImmD needs to explore measures to enhance competition, including enhancing attractiveness to potential bidders by avoiding over-specifications (see para. 3.32) and extending contract period (see para. 3.31(a)).

Note 45: *SPR 109(a)(iv) (which took effect from April 2019) and the then SPR 126(a)(i) (for period prior to April 2019) are relevant.*

Need to consolidate procurement requirements to achieve better economy of scale

3.31 According to ImmD, it had complied with SPR 246 requirements of not making repeated purchases of the same items within 12 months with cumulative value of purchases exceeding the quotation limit of \$1.43 million. According to SPR 205, Controlling Officers should consolidate requirements of stores and services of similar nature as far as possible to achieve better economy of scale. This can be done by bundling requirements for longer period or larger quantity:

- (a) ***Procurement of items with cumulative values exceeding \$1.43 million (Note 46) within 24 months.*** As shown in Appendix D, seven items were purchased by quotation (3 quotation exercises for each item, totalling 21 quotation exercises) and the cumulative contract value for each item exceeded \$1.43 million within 24 months. Audit considers that the requirements for the same or similar items could be bundled to form a longer contract period for issuing an open tender to encourage competition with a view to achieving better economy of scale. In future procurement exercises by quotation, ImmD needs to arrange purchase in bulk as far as practicable to achieve better economy of scale; and
- (b) ***Procurement of items in bulk to obtain a lower unit price.*** As shown in Appendix E, 12 items were purchased by quotation (2 to 5 quotations exercises for each item, totalling 36 quotation exercises) within a short period. According to the User Guide to Contract Management issued by the then Efficiency Unit (now renamed as the Efficiency Office), contract size is an important factor that affects the interest of potential bidders and procuring departments should consider bundling logically related services into a single, sizeable contract to reduce the cost of contract administration and make it more attractive to potential bidders. Audit considers that the requirements for the same or similar items could be bundled together to save procurement efforts. This could also facilitate ImmD to bargain for a better price since bulk purchase could lead to a reduction of unit price (see items 1 to 9 and 11 in Appendix E). In this regard, ImmD needs to remind procuring staff to comply with SPR 205 requirements of consolidating

Note 46: *While the quotation limit was reduced from \$1.43 million to \$1.4 million with effect from January 2018, the higher quotation limit of \$1.43 million was used in Audit's analyses for simplicity.*

requirements of stores and services of similar nature as far as possible to achieve better economy of scale.

***Need to provide justifications
for not complying with SPR 350(b)***

3.32 According to the Supplies Survey and Stock Verification Exercises on ImmD conducted by GLD in August 2013 and December 2016, GLD noted that the brand products were purchased without justifications provided. GLD recommended that specifications of stores to be purchased by quotation exercises should, as far as practicable, be prepared in general terms, based on the functional and performance requirements of the products required for compliance with the basic government procurement principles of transparency, openness and fairness. ImmD accepted GLD's recommendation and said that all staff concerned had been reminded that procurement of stores on particular brand name or model without providing justifications was not allowed. In the circumstances, generic instead of proprietary goods and services should be used where appropriate (SPR 350(b) is relevant — Note 47). If there is no intelligible way of describing the product without mentioning the brand name, words such as “or equivalent” should be included in the quotation documents. Audit examination revealed that justifications for not complying with SPR 350(b) had not been documented in the following purchases:

- (a) ***Purchase of Equipment A.*** In three quotation exercises conducted in the period from September 2017 to January 2018, the quotation documents specified the model number of Equipment A to be supplied by a specific manufacturer and words such as “or equivalent” were not included in accordance with SPR 350(b). In the event, only one offer from the same supplier was received and eventually accepted in each of these three quotation exercises. There was no documentation on the justifications for specifying the single product and manufacturer; and
- (b) ***Purchase of Equipment B.*** In three quotation exercises conducted in the period from June 2016 to September 2017, the quotation documents

Note 47: *According to SPR 350(b), there shall be no requirement for or reference to a particular trademark or trade name, patent, copyright, design, type, specific origin, producer, supplier or service provider, unless there is no other sufficiently precise or intelligible way of describing the procurement requirements and words such as “or equivalent” are included in the tender documents.*

specified the model number of Equipment B to be supplied by a specific manufacturer and words such as “or equivalent” were not included in accordance with SPR 350(b). Only one conforming offer from the same supplier was received in each of these three quotation exercises (Note 48). There was no documentation on the justifications for specifying the single product and manufacturer.

In Audit’s view, ImmD needs to remind procuring staff to document the justifications for adopting proprietary products which are at variance with SPR 350(b) and include words such as “or equivalent” in the quotation documents where appropriate.

Audit recommendations

3.33 Audit has *recommended* that the Director of Immigration should:

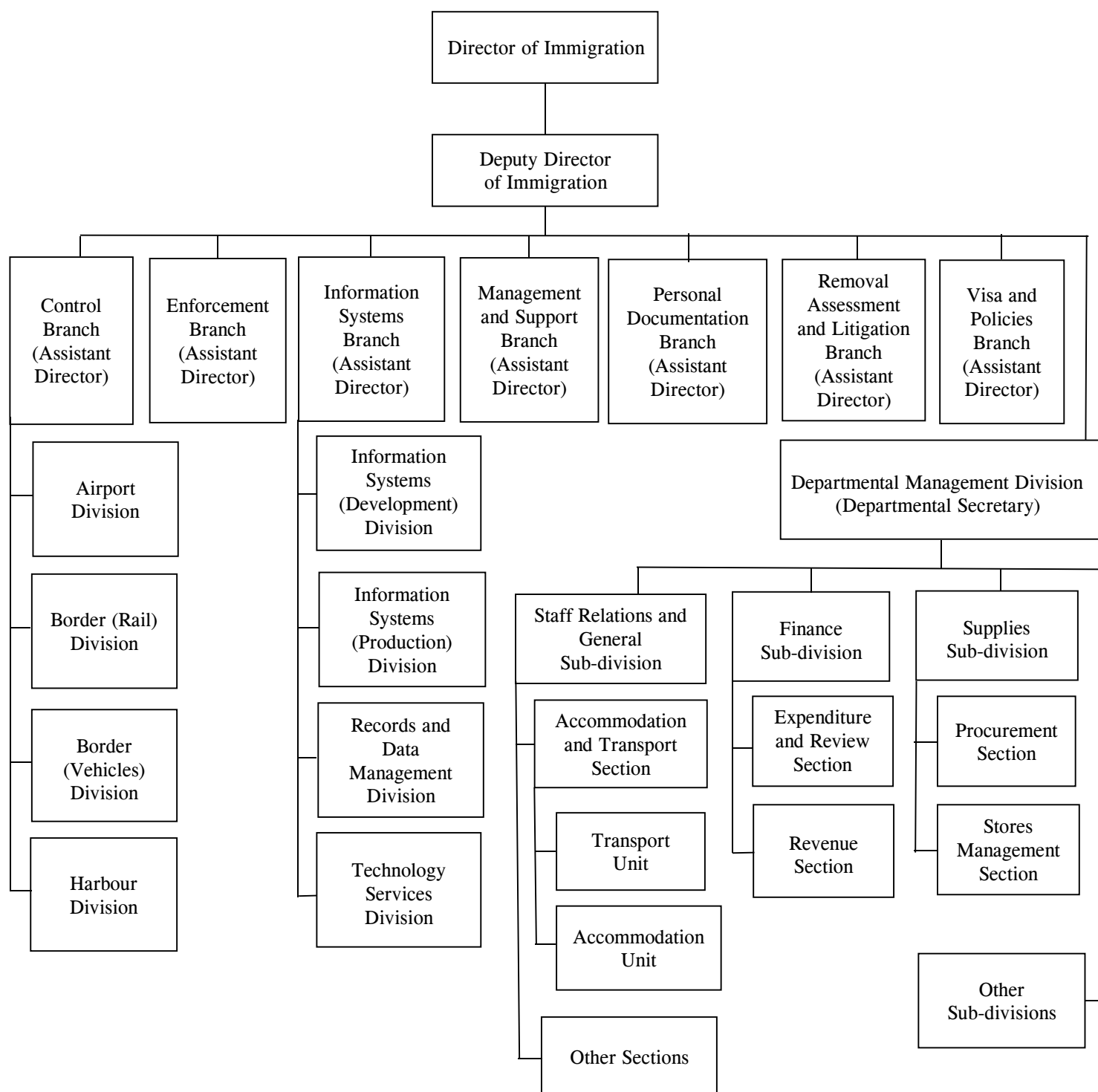
- (a) explore measures to enhance competition in the procurement of goods and services by quotation, including enhancing attractiveness to potential bidders by avoiding over-specifications and extending contract period;**
- (b) consider adopting bulk purchase of regular items as far as practicable to achieve better economy of scale;**
- (c) remind procuring staff to comply with SPR 205 requirements of consolidating requirements of stores and services of similar nature as far as possible to achieve better economy of scale; and**
- (d) remind procuring staff to document the justifications for adopting proprietary products and include words such as “or equivalent” if proprietary names are specified in the quotation documents in accordance with SPR 350(b).**

Note 48: *Although there was another offer received in the quotation exercise conducted in September 2016, the sizes of Equipment B offered in the bid were slightly different from the quotation specifications and the offer was considered non-conforming.*

Response from the Government

3.34 The Director of Immigration generally agrees with the audit recommendations.

**Immigration Department:
Organisation chart (extract)
(30 June 2019)**



Source: ImmD records

Appendix B
(paras. 1.7(a) and
2.8 refer)

**14 ImmD's ICT projects recorded in
the Capital Works Reserve Fund project expenditure report
(June 2019)**

Item	Project name	Approval date	Approved project estimate (\$ million)	Actual expenditure (\$ million)	Unspent balance (\$ million)
<i>Eight completed projects</i>					
1	Hong Kong Special Administrative Region Identity Card (Note 1)	Mar 2001	1,225.6	801.8	423.8
2	Implementation of Phase I of the updated Information Systems Strategy	Jan 2002	362.1	337.2	24.9
3	Implementation of Phase II of the updated Information Systems Strategy	Jan 2003	352.8	324.8	28.0
4	Computer systems at the new control point for the Hong Kong-Shenzhen Western Corridor	Apr 2004	176.6	114.9	61.7
5	Implementation of Phase III of the updated Information Systems Strategy (Note 2)	May 2004	336.8	333.3	3.5
6	Introduction of Biometric Hong Kong Special Administrative Region Passport and Strategic Enhancement of the Travel Document Information System	Mar 2005	152.8	139.0	13.8
7	Computer systems at the new control point for the Lok Ma Chau Terminus of the Sheung Shui to Lok Ma Chau Spur Line	May 2005	93.3	67.3	26.0
8	Enhancement of computer systems to process electronic Exit-Entry Permit for Travelling to and from Hong Kong and Macao and extension of e-Channel service	Jul 2010	247.5	195.6	51.9

Appendix B
(Cont'd)
(paras. 1.7(a) and
2.8 refer)

Item	Project name	Approval date	Approved project estimate (\$ million)	Actual expenditure (\$ million)	Unspent balance (\$ million)
<i>Six on-going projects</i>					
9	New Information Technology Infrastructure	Dec 2011	862.2	382.6	479.6
10	New Immigration Control System	Feb 2013	912.2	689.4	222.8
11	Next Generation Smart Identity Card System	May 2015	1,448.8	150.2	1,298.6
12	Next Generation Electronic Passport System	May 2016	357.8	28.5	329.3
13	Computer systems at Control Points	Jun 2016	168.5	83.7	84.8
14	Next Generation Application and Investigation Easy Systems	May 2018	453.0	0.9	452.1
Total			7,150.0	3,649.2	3,500.8

Source: ImmD records

Note 1: According to ImmD, tender records and contract files of the project were disposed of in 2018 in accordance with the general administrative records disposal schedules.

Note 2: It comprised the Application and Investigation Easy System and the Electronic Records Programme.

Appendix C
(paras. 2.3 and
2.9 refer)

Brief description of ImmD's eight completed ICT projects

Item	Project name	Project description
1	Hong Kong Special Administrative Region Identity Card	The project aimed to develop and implement the infrastructure and application system for issuing smart identity cards and to supply blank smart cards with biometric identification technology for the Automated Passenger Clearance System (APCS).
2	Implementation of Phase I of ISS-2	The project aimed to develop the Information Technology Infrastructure Upgrade Programme which was to cope with the increasing workload and to lay the foundation for implementing various application system projects under ISS-2 and the Immigration Control Automation System Enhancement Programme which was to enhance the existing system and to raise the technology platform to support and interface with other initiatives of ISS-2.
3	Implementation of Phase II of ISS-2	The project aimed to develop the APCS which was to enable the clearance of passengers securely using smart identity cards and biometrics technologies, and the Automated Vehicle Clearance System (AVCS) which was to automate vehicle clearance at land crossing points through the establishment of self-service kiosks using vehicle identification and biometrics technologies.
4	Computer systems at the new control point for the Lok Ma Chau Terminus of the Sheung Shui to Lok Ma Chau Spur Line	The project aimed to develop and install computer systems which comprised Entry/Exit Processing and Records System and APCS for supporting the operation of immigration counters/e-Channels, and eight systems for supporting the operation of back offices.
5	Introduction of Biometric Hong Kong Special Administrative Region Passport and Strategic Enhancement of the Travel Document Information System	The project aimed to develop a computer system for issuing the biometric passports and other travel documents and to incorporate biometric identifier into the passports.

Appendix C
(Cont'd)
(paras. 2.3 and
2.9 refer)

Item	Project name	Project description
6	Implementation of Phase III of ISS-2	The project aimed to develop the Application and Investigation Easy System which supported the processing of applications for visas, permits, travel passes, registration matters relating to births, deaths, marriage and investigation cases and the Electronic Records Programme which put in place the necessary technical architecture to provide for a paperless environment through the employment of imaging, workflow and document management technologies.
7	Enhancement of computer systems to process electronic Exit-Entry Permit for Travelling to and from Hong Kong and Macao and extension of e-Channel service	The project aimed to enhance ImmD's computer systems and install clearance facilities to process electronic Exit-Entry Permit for travelling to and from Hong Kong and Macao, and to enable eligible holders of the Permits to use the e-Channel.
8	Computer systems at the new control point for the Hong Kong-Shenzhen Western Corridor	The project aimed to install computer systems which comprised the enhanced Immigration Control Automation System, APCS and AVCS for supporting the operation of immigration counters/passenger and vehicle e-Channels, and five systems for supporting the operation of back offices.

Source: ImmD records

Appendix D
(para. 3.31(a) refers)

**Quotation exercises for items with cumulative values
exceeding \$1.43 million within 24 months
(2016-17 to 2018-19)**

Item	Description	Quotation issue date	Contract period	Contract value (\$)	Time lapse between quotation exercises (month)	Cumulative value (\$)
1	Provision of services for handling and transportation of departmental stores, furniture and equipment	20/5/2016	1/7/2016 – 30/6/2017	922,600	11.9	1,845,200
		18/5/2017	1/7/2017 – 30/6/2018	922,600		
		31/5/2018	1/7/2018 – 30/6/2019	959,450	12.4	1,882,050
2	Provision of transport and dispatch service to Accommodation and Transport Section	1/3/2016	18/4/2016 – 17/4/2017	1,289,340	10.8	2,578,680
		24/1/2017	18/4/2017 – 17/4/2018	1,289,340		
		31/1/2018	18/4/2018 – 17/4/2019	1,343,340	12.2	2,632,680
3	Provision of transport service to Kai Tak Cruise Terminal Section	4/3/2016	1/5/2016 – 30/4/2017	971,700	10.7	1,772,100
		23/1/2017	1/5/2017 – 30/4/2018	800,400		
		5/2/2018	1/5/2018 – 30/4/2019	847,700	12.4	1,648,100
4	Provision of transport service to Lo Wu Section	2/9/2016	9/1/2017 – 8/1/2018	846,000	14.5	1,770,250
		16/11/2017	9/1/2018 – 8/1/2019	924,250		
		22/11/2018	9/1/2019 – 8/1/2020	959,000	12.2	1,883,250
5	Provision of transport service to LMC Spur Line Section	3/5/2016	1/7/2016 – 30/6/2017	788,800	10.5	1,559,600
		17/3/2017	1/7/2017 – 30/6/2018	770,800		
		6/4/2018	1/7/2018 – 30/6/2019	815,200	12.7	1,586,000
6	Provision of transport service to Removal Section and Clearance Section	7/10/2016	21/11/2016 – 20/11/2017	876,600	12.0	2,150,630
		6/10/2017	21/11/2017 – 20/11/2018	1,274,030		
		16/10/2018	21/11/2018 – 20/11/2019	1,339,360	12.3	2,613,390
7	Provision of labour services for handling stores, furniture and equipment	22/6/2016	1/9/2016 – 31/8/2017	958,800	11.1	2,040,300
		25/5/2017	1/9/2017 – 31/8/2018	1,081,500		
		6/7/2018	1/9/2018 – 31/8/2019	1,200,570	13.4	2,282,070

Source: Audit analysis of ImmD records

Appendix E
(para. 3.31(b) refers)

**Repeated quotation exercises within a short period
(2016-17 to 2018-19)**

Item	Description	Quotation issue date	Quantity	Unit price (\$)	Contract value (\$)	Time lapse between quotation exercises (month)
1	Supply and installation of metal detectors	16/2/2017	1	66,000.00	66,000	8.3
		27/10/2017	5	50,000.00	250,000	
2	Supply of anti-riot helmets	2/5/2017	160	2,585.00	413,600	4.9
		28/9/2017	100	2,619.00	261,900	
		27/6/2018	150	2,585.00	387,750	8.9
3	Supply of archway metal detectors	16/1/2018	5	39,600.00	198,000	0.5
		30/1/2018	8	36,875.00	295,000	
4	Provision of winter shirts for male Immigration Officers	28/2/2017	5,000	35.40	177,000	9.5
		15/12/2017	1,000	68.00	68,000	5.2
		23/5/2018	8,000	39.90	319,200	7.9
		17/1/2019	4,000	34.90	139,600	
5	Supply of blue drill shirts long sleeve and trousers for Immigration Officers (suits)	17/3/2016	600	180.00	108,000	7.1
		20/10/2016	403	225.00	90,675	6.9
		19/5/2017	400	243.00	97,200	6.1
		20/11/2017	400	243.00	97,200	4.6
		10/4/2018	1,200	198.00	237,600	
6	Supply of long service medals	3/6/2016	200	427.00	85,400	7.8
		27/1/2017	500	402.00	201,000	
7	Supply of stamp barrels	27/6/2018	2,000	92.00	184,000	6.5
		11/1/2019	10,000	90.00	900,000	

Appendix E
(Cont'd)
(para. 3.31(b) refers)

Item	Description	Quotation issue date	Quantity	Unit price (\$)	Contract value (\$)	Time lapse between quotation exercises (month)
8	Supply of steel kit lockers	9/8/2017	50	1,198.00	59,900	2.3
		19/10/2017	68	1,228.00	83,504	0.5
		3/11/2017 (Note)	500	1,110.00	555,000	
		23/4/2018	100	1,199.00	119,900	5.6
9	Supply of steel security lockers	3/11/2017 (Note)	42	1,980.00	83,160	2.0
		3/1/2018	52	1,885.00	98,020	4.0
		4/5/2018	34	2,085.00	70,890	
		24/7/2018	34	2,239.00	76,126	2.7
10	Supply of jungle boots	1/8/2017	200	390.00	78,000	3.4
		13/11/2017	200	420.00	84,000	8.0
		13/7/2018	200	420.00	84,000	
11	Supply of summer shirts for male Immigration Officers	17/8/2017	1,200	73.00	87,600	6.0
		14/2/2018	9,200	61.50	565,800	2.8
		11/5/2018	4,000	66.50	266,000	
		9/10/2018	5,840	66.50	388,360	5.0
12	Supply, delivery and installation of Treasury Grade 4 safes with stand	8/12/2017	4	34,230.00	136,920	1.3
		16/1/2018	2	23,010.00	46,020	

Source: *Audit analysis of ImmD records*

Note: *The two purchases were under the same quotation exercise.*

Acronyms and abbreviations

APCS	Automated Passenger Clearance System
APPLIES	Application and Investigation Easy System
Audit	Audit Commission
AVCS	Automated Vehicle Clearance System
B/Ds	Bureaux and departments
CIC	Castle Peak Bay Immigration Centre
CTB	Central Tender Board
CWRF	Capital Works Reserve Fund
DTC	Departmental Tender Committee
F&ARs	Financial and Accounting Regulations
FC	Finance Committee
FSTB	Financial Services and the Treasury Bureau
GFMIS	Government Financial Management Information System
GLD	Government Logistics Department
ICT	Information and communications technology
ImmD	Immigration Department
ISB	Information Systems Branch
ISS	Information Systems Strategy
ISS-2	Updated Information Systems Strategy
LegCo	Legislative Council
LMC	Lok Ma Chau
OGCIO	Office of the Government Chief Information Officer
PIDRs	Post Implementation Departmental Returns
PIRs	Post Implementation Reviews
PTEs	Pre-tender estimates
SMARTICS	First Generation Smart Identity Card System
SMARTICS 2	Next Generation Smart Identity Card System
SPRs	Stores and Procurement Regulations
SSD	Supplies Sub-division
TAP	Tender Assessment Panel

CHAPTER 9

**Environment Bureau
Drainage Services Department**

Harbour Area Treatment Scheme Stage 2A

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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HARBOUR AREA TREATMENT SCHEME STAGE 2A

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.11
Audit review	1.12 – 1.13
Acknowledgement	1.14
PART 2: CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM	2.1
Sewage conveyance system	2.2 – 2.3
Management of Bills of Quantities items	2.4 – 2.16
Audit recommendations	2.17
Response from the Government	2.18
Other contract management issues	2.19 – 2.30
Audit recommendations	2.31
Response from the Government	2.32
PART 3: EXPANSION AND UPGRADING OF STONECUTTERS ISLAND SEWAGE TREATMENT WORKS	3.1
Expansion and upgrading of Stonecutters Island Sewage Treatment Works	3.2 – 3.4

	Paragraph
Design and provision of deodourisation facilities	3.5 – 3.17
Audit recommendations	3.18
Response from the Government	3.19
Other contract management issues	3.20 – 3.26
Audit recommendations	3.27
Response from the Government	3.28
PART 4: UPGRADING OF PRELIMINARY TREATMENT WORKS	4.1
Upgrading of preliminary treatment works	4.2 – 4.3
Site access for upgrading works	4.4 – 4.8
Audit recommendation	4.9
Response from the Government	4.10
Cost increase of contract variations	4.11 – 4.15
Audit recommendation	4.16
Response from the Government	4.17
Appendices	Page
A : Water quality of the harbour after commissioning of Harbour Area Treatment Scheme Stage 2A	62 – 63
B : Scope for better ascertaining the presence of government structures in the vicinity of the works sites under Contracts I, L and M	64 – 66
C : Acronyms and abbreviations	67

HARBOUR AREA TREATMENT SCHEME STAGE 2A

Executive Summary

1. The Harbour Area Treatment Scheme (HATS) is one of the most important environmental protection programmes undertaken in Hong Kong to improve the water quality of Victoria Harbour (hereinafter referred to as the harbour). HATS is an integrated sewerage system for collecting and treating sewage generated from the harbour catchment in an efficient, effective and environmentally sustainable manner. A three-phase implementation strategy is adopted for HATS (i.e. Stages 1, 2A and 2B). HATS Stages 1 and 2A were commissioned in December 2001 and December 2015 respectively, and all sewage generated from the harbour catchment is transferred to the Stonecutters Island Sewage Treatment Works (SCISTW) for centralised chemically-enhanced primary treatment (CEPT) and disinfection before discharging into the harbour. For HATS Stage 2B, there is no firm plan for implementation at present. The Drainage Services Department (DSD) is responsible for the design, construction and operation of HATS. The Environmental Protection Department (EPD) is responsible for planning HATS and monitoring the marine water quality. The Environment Bureau (ENB) is responsible for overseeing the provision of sewerage and sewage treatment services by DSD and EPD.

2. Between December 2005 and April 2010, the Finance Committee (FC) of the Legislative Council and the Secretary for Financial Services and the Treasury (under delegated authority from FC) approved funding of \$17,591.7 million in total for the investigations, detailed design and construction of HATS Stage 2A. The construction of HATS Stage 2A commenced in April 2008 and was implemented through awarding 14 works contracts (Contracts A to N). The design and construction supervision work of HATS Stage 2A were conducted under Consultancy X (for Contracts A to C by Consultant X) and Consultancy Y (for Contracts D to N by Consultant Y). After the substantial completion of the main works, HATS Stage 2A was commissioned in December 2015, which was one year later than the target commissioning date stated in the FC funding papers. As of July 2019, the Government had incurred \$16,868.7 million for HATS Stage 2A. According to ENB and EPD, after the commissioning of HATS Stage 2A, the water quality of the harbour has shown further improvement. The Audit Commission

Executive Summary

(Audit) has recently conducted a review to examine the Government's work in managing the implementation of HATS Stage 2A.

Construction of sewage conveyance system

3. The sewage conveyance system (SCS) under HATS Stage 2A comprises a network of: (a) vertical shafts for collecting sewage from the existing eight preliminary treatment works (PTWs) at the northern and south-western parts of Hong Kong Island; and (b) deep sewage tunnels for conveying the collected sewage to SCISTW. Contracts A to C (which had been completed with accounts finalised at a total final contract sum of \$7,151 million) covered the construction of SCS (paras. 1.5, 2.2 and 2.3).

4. *Works items in tenderers' design were omitted in the Bills of Quantities (BQ).* Audit examination revealed that works items (involving temporary works) in tenderers' design were omitted in the respective BQ of Contracts A and B. In the course of subsequent contract administration of Contracts A and B, omissions of BQ items were claimed by the pertinent contractors and assessed by Consultant X, leading to payments of \$188.8 million to Contractor A and \$177.4 million to Contractor B for carrying out the works of the related omitted items. According to DSD, while a Technical Circular (prevailing at the time of tender invitations for Contracts A and B in December 2008) required that a tenderer's design should be priced as a lump sum item included in BQ, it was only applicable to permanent works but not "works of a short limited lifespan or temporary in nature" (which were subsequently included in the latest version of the Technical Circular in 2014). In Audit's view, in implementing a works project in future, DSD needs to include works items in a tenderer's design as a lump sum item in BQ (paras. 2.9 to 2.11).

5. *Need to critically check the completeness of BQ items.* According to Contract A, for the purposes of measurement of excavation in shafts, three types of excavated materials were defined in contract clauses and separate items should be provided in BQ for different types of excavated materials. However, under BQ of Contract A, items were provided for two of the three types of excavated materials. Consultant X assessed that the remaining type of excavated material was omitted in BQ. In the event, DSD paid \$68.5 million to Contractor A for carrying out the works of the omitted items. According to DSD, since November 2015, it has required an independent checking of BQ of its works contracts. In Audit's view, in implementing

Executive Summary

a works project in future, DSD needs to continue to make efforts to strengthen checking of BQ for ensuring the completeness and accuracy of BQ (paras. 2.13 to 2.16).

6. ***Scope for better ascertaining the presence of government structures in the vicinity of the works sites before inviting tenders.*** Audit examination revealed that, under Contract B, some government structures (an existing trunk sewer and an abandoned underground reinforced concrete structure of DSD) in the vicinity of the works sites for constructing a shaft were identified after contract award. Audit noted that: (a) at the design stage, Consultant X requested as-built drawings of structures near the shaft locations from DSD. However, DSD was unable to provide as-built drawings showing that the abovementioned underground structures existed at the works sites; and (b) after Contractor B encountered the underground reinforced concrete structure, Consultant X tried to obtain the then as-built drawings of that structure from DSD again and discovered that such drawings were kept in the records of DSD. In the event, extensions of time (EOTs) ranging from 95 to 411.5 days were granted for completion of various sections of works under Contract B, leading to prolongation costs of \$323.3 million. In this connection, for Contracts I, L and M, Audit also noted similar issues relating to variations to the works due to the identification of government structures in the vicinity of the works sites after contract awards, resulting in significant prolongation costs and EOTs granted (paras. 2.20 and 2.21).

7. ***Scope for enhancing pre-tender site investigations.*** The works under Contract C, covering the construction of deep sewage tunnels by a relatively new construction method at that time, commenced in August 2009 and were completed in May 2014, about 33 months (1,004 days) later than the original completion date of August 2011 (of which 130 days were due to inclement weather). Audit noted that the delays were mainly due to adverse ground conditions undetected in pre-tender site investigations, leading to granting of EOTs of 741 days for completing each of two sections of works under Contract C (para. 2.24).

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

8. SCISTW (constructed under HATS Stage 1) was expanded and upgraded under HATS Stage 2A to increase its design daily treatment capacity and to provide

Executive Summary

disinfection facilities. DSD awarded eight works contracts (Contracts D to K) for the related works. Except Contract K which was awarded in July 2019 with scheduled contract completion date of May 2021, all the other seven works contracts (Contracts D to J) had been completed with a total expenditure of \$6,286.8 million as of July 2019 (paras. 3.2 and 3.3).

9. ***Need to draw on the experience gained in design changes of deodourisation (DO) facilities.*** Under Contract H, Contractor H was required to construct DO facilities at SCISTW. There were design changes of DO facilities during the construction stage of Contract H, including: (a) construction of double door enclosure systems for two buildings for handling sludge to enable better odour control; and (b) approval of Contractor H's cost saving design for reducing odour loading from the two buildings and issuing a variation order (VO) which included constructing two additional DO units adopting a more environmentally friendly DO system for serving the two buildings (with an estimated saving of about \$49.5 million for recurrent cost over the design life of 15 years). According to DSD, the DO design was progressively made more cost effective. Audit considers that DSD needs to draw on the experience gained in design changes of DO facilities at SCISTW to further improve the design of DO facilities for sewage treatment works in future (paras. 3.8 to 3.11).

10. ***Need to continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW.*** To ensure no adverse air quality impact to the air sensitive receivers, in December 2014, DSD engaged Consultant Y to conduct an odour study for enhancing the odour management at SCISTW. In July 2017, the odour study was completed. Consultant Y found that certain odour sources at SCISTW had emitted high hydrogen sulphide (often highlighted as the indication of odour from sewage treatment works) levels as compared to the specified design requirements of the DO facilities and proposed further enhancement works to the existing DO facilities at SCISTW to cater for the worst case scenario. As it transpired, in July 2019, DSD awarded Contract K at a contract sum of \$169 million for carrying out further odour reduction measures at SCISTW with a view to mitigating potential odour nuisance to the surrounding air sensitive receivers in future. Audit noted that odour emission from SCISTW was the main environmental concern during the operation phase and odour issue was complicated due to its dynamic and transient nature. In Audit's view, DSD needs to continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW (paras. 3.7, 3.12 to 3.15 and 3.17).

Executive Summary

11. *Scope for better assessing the ground conditions of existing structures before inviting tenders.* The Dilution Water Pumping Station (DWPS), an underground reinforced concrete structure built under HATS Stage 1 to serve the CEPT process, was a key facility of SCISTW resting on reclaimed fill materials without any piling support and there was little provision in the DWPS design to accommodate excessive settlement. During the construction stage of Contract F, DWPS had undergone more-than-expected settlement. In order to safeguard DWPS from further settlement and to provide long term stability and integrity of DWPS, Consultant Y issued a VO (later valued at a cost of \$9.5 million) to Contractor F for carrying out permanent stabilisation works for DWPS. In Audit's view, in implementing a works project in future, DSD and its consultants need to take further measures to better assess the ground conditions of existing structures before inviting tenders with a view to further mitigating the impact of construction works causing settlement of such structures as far as practicable (paras. 3.21 to 3.24).

12. *Scope for better ascertaining the presence of underground utilities and buried underground structures in the vicinity of the works sites.* After the commencement of Contract G, DSD conducted a comprehensive review of the original design of the Centrate Pipe Return System and then modified the design so as to further enhance its functionality and performance with due regard to the site constraints and the evolving operation needs. Notwithstanding that examination of all available site records for existing underground utilities and structures had been conducted at the design stage and site constraints had been considered when modifying the design of the system, during the excavation works, Contractor G encountered various uncharted underground utilities including cable ducts and other unforeseeable underground obstructions (e.g. sheet piles) which caused delay to the progress of works. In the event, EOTs of 88 days were granted for completion of a section of works, leading to prolongation costs of \$16.4 million. Audit considers that, in implementing a works project in future, there is scope for better ascertaining the presence of underground utilities and structures in the vicinity of the works sites (paras. 3.25 and 3.26).

Upgrading of preliminary treatment works

13. Sewage is preliminarily treated at PTWs to remove large solids and grits to avoid deposition in the deep sewage tunnels and to protect downstream facilities from damage or blockage. The existing eight PTWs at the northern and south-western parts of Hong Kong Island were upgraded to cater for the technical requirements of HATS Stage 2A as well as future development and population growth of the

Executive Summary

respective districts. Contracts L to N (which had been completed with a total expenditure of \$1,546.2 million as of July 2019) covered mainly the upgrading works for the eight PTWs (paras. 4.2 and 4.3).

14. *Delays in handover of works sites and completed civil works.* Before carrying out the upgrading works at PTWs under Contracts L and M, certain portions of works sites or completed civil works were required to be handed over from contractors responsible for the construction works of SCS under Contracts A to C. The late handover of works sites and completed civil works (partly due to inclement weather) from Contractor A to Contractor L and the late handover of works sites (partly due to inclement weather) from Contractors B and C to Contractor M consequentially resulted in: (a) EOTs ranging from 196 to 496 days for completing three sections of works and prolongation costs totalling \$56.2 million granted under Contract L; and (b) EOTs of 272 and 542 days respectively for completing two sections of works and prolongation costs totalling \$56.4 million granted under Contract M (para. 4.5).

15. *Need to notify appropriate higher-rank approving officer of the reasons for cost increase of contract variations as appropriate.* According to DSD's Technical Circular, after a proposed variation has been approved by an approving officer, if it is anticipated that the estimated net value of the proposed variation will for reasons other than change in scope increase to the extent of exceeding the approval limit of that approving officer, then the appropriate higher-rank approving officer shall be notified with explanations of such increase as soon as it is known. As far as could be ascertained, for 5 VOs under Contract L (with an estimated cost of less than \$0.3 million each and issued by Consultant Y within its financial authority), the up-to-date costs as of July 2019 exceeded the estimated costs by 130% to 969%. Audit noted that the up-to-date costs for the 5 VOs exceeded the financial authority (i.e. \$0.3 million) of Consultant Y. However, DSD had no documentation showing that the appropriate higher-rank approving officer had been notified of reasons for the cost increase of the 5 VOs (paras. 4.12 to 4.14).

Executive Summary

Audit recommendations

16. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Director of Drainage Services should:**

Construction of SCS

- (a) in implementing a works project in future:**
 - (i) include works items in a tenderer's design as a lump sum item in BQ (para. 2.17(a));**
 - (ii) continue to make efforts to strengthen checking of BQ for ensuring the completeness and accuracy of BQ (para. 2.17(b)); and**
 - (iii) better ascertain the presence of government structures in the vicinity of the works sites before inviting tenders (para. 2.31(a));**
- (b) when implementing a works contract involving tunnelling works in future, further enhance pre-tender site investigations with a view to providing better information on site conditions as far as practicable (para. 2.31(b));**

Expansion and upgrading of SCISTW

- (c) draw on the experience gained in design changes of DO facilities at SCISTW to further improve the design of DO facilities for sewage treatment works in future (para. 3.18(a));**
- (d) continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW (para. 3.18(b));**
- (e) in implementing a works project in future:**

Executive Summary

- (i) **take further measures to better assess the ground conditions of existing structures before inviting tenders (para. 3.27(a)); and**
- (ii) **better ascertain the presence of underground utilities and buried underground structures in the vicinity of the works sites (para. 3.27(b));**

Upgrading of PTWs

- (f) **in implementing a multi-contract works project in future, consider taking further measures as appropriate to better minimise the impact arising from delays in handover of works sites and completed civil works between the contractors (para. 4.9); and**
- (g) **in implementing a works project in future, take measures to ensure compliance with the requirements relating to notifying the appropriate higher-rank approving officer with explanations of cost increase of contract variations (para. 4.16).**

Response from the Government

17. The Director of Drainage Services agrees with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 The Harbour Area Treatment Scheme (HATS), formerly known as the Strategic Sewage Disposal Scheme (Note 1), was launched in 1989. It is one of the most important environmental protection programmes undertaken in Hong Kong to improve the water quality of Victoria Harbour (hereinafter referred to as the harbour) (Note 2). HATS is an integrated sewerage system for collecting and treating sewage generated from the harbour catchment in an efficient, effective and environmentally sustainable manner. It has the capacity to provide proper sewage treatment to serve 5.7 million people living at the two sides of the harbour.

1.3 The Drainage Services Department (DSD) is responsible for the design, construction and operation of HATS. The Environmental Protection Department (EPD) is responsible for planning HATS and monitoring the marine water quality. The Environment Bureau (ENB — Note 3) is responsible for policy matters on environmental protection and for overseeing the operation of DSD and EPD on the provision of sewerage and sewage treatment services.

Note 1: *The Strategic Sewage Disposal Scheme was renamed as HATS in March 2001.*

Note 2: *Before the commissioning of HATS, sewage generated from the harbour catchment was discharged into the harbour after preliminary treatment (i.e. screening and degritting) at local preliminary treatment works. This was a major pollution source which had a significant impact on the water quality of the harbour.*

Note 3: *In July 2007, ENB was formed to take over the policy responsibility for environmental matters. Before July 2007, the policy responsibility rested with the then Environment, Transport and Works Bureau (July 2002 to June 2007), the then Environment and Food Bureau (January 2000 to June 2002), the then Planning, Environment and Lands Bureau (July 1997 to December 1999) and the then Planning, Environment and Lands Branch (before July 1997).*

Introduction

1.4 A three-phase implementation strategy is adopted for HATS (i.e. Stages 1, 2A and 2B). HATS Stages 1 and 2A were commissioned in December 2001 and December 2015 respectively, and all sewage generated from the harbour catchment is transferred to the Stonecutters Island Sewage Treatment Works (SCISTW) for centralised chemically-enhanced primary treatment (CEPT — Note 4) and disinfection before discharging into the harbour. HATS Stage 2B involves the provision of an underground secondary treatment facility (Note 5) adjacent to the existing SCISTW. At present, there is no firm plan for implementing HATS Stage 2B (Note 6). According to the Government, it would keep under review the implementation of HATS Stage 2B taking into account the water quality situation and the latest technological development in biological treatment.

HATS Stages 1 and 2A

1.5 HATS Stage 1 was commissioned in December 2001 (with construction works commenced in January 1995 and completed in December 2001). Under HATS Stage 1, sewage generated from Kowloon, Kwai Tsing, Tsuen Wan,

Note 4: *In Hong Kong, there are five types of sewage treatment facilities, namely preliminary treatment, primary treatment, CEPT, secondary treatment and tertiary treatment. The primary treatment includes screening, removal of grit and a sedimentation process with solid waste and settleable suspended solids being removed from the sewage. CEPT enhances primary treatment through the addition of chemicals (coagulant and flocculating agents) to enable quicker and better settlement of suspended solids in the sewage. In SCISTW, ferric chloride and polymer are used as the coagulant and flocculating agents respectively.*

Note 5: *Under the secondary treatment, the sewage is purified by means of a biological treatment process after the primary treatment. The organic matter and nutrient in the settled sewage are decomposed by micro-organisms in the biological treatment process.*

Note 6: *In April 2005, the Chief Executive-in-Council approved to commence HATS Stage 2B upon the completion of HATS Stage 2A subject to a review in 2010-11. In June 2010, EPD commissioned a consultancy study to review the implementation of HATS Stage 2B. The study found that HATS Stage 2A would provide adequate capacity to handle the projected sewage flow and the water quality in most parts of the harbour would be in compliance with the Water Quality Objectives (established under the Water Pollution Control Ordinance (Cap. 358) to lay down water quality requirements for the water body) upon its commissioning, while the upgrading of treatment level from CEPT to biological treatment would not result in an observable improvement of the water quality of coastal waters. The study concluded that the implementation of HATS Stage 2B was not critical in terms of Water Quality Objectives compliance.*

Tseung Kwan O and north-eastern Hong Kong Island (representing about 75% of the total sewage generated from the harbour catchment) is collected and transferred via the sewage conveyance system (SCS — Note 7) with 23.6-kilometre (km) deep sewage tunnels to SCISTW for centralised CEPT before discharging into the harbour (without disinfection — Note 8). The construction of HATS Stage 2A commenced in April 2008. After the substantial completion of the main works, HATS Stage 2A was commissioned in December 2015. Under HATS Stage 2A:

- (a) sewage generated from the northern and south-western parts of Hong Kong Island (representing the remaining 25% of the total sewage generated from the harbour catchment) is collected and transferred via SCS with 20.8-km deep sewage tunnels to SCISTW for centralised CEPT and disinfection (see item (b) below) before discharging into the harbour;
- (b) SCISTW was expanded and upgraded to increase its design daily treatment capacity (from 1.7 million cubic metres (m³) to 2.44 million m³ to cater for the additional sewage flows from the future development and population growth in HATS catchment) and to provide disinfection facilities (Note 9); and

Note 7: *SCS comprises a network of vertical shafts to collect sewage from preliminary treatment works and interconnected sewage tunnels to convey the collected sewage to SCISTW.*

Note 8: *Disinfection facilities were not provided at SCISTW under HATS Stage 1.*

Note 9: *After the commissioning of HATS Stage 1, there had been a substantial increase in the bacteria level in the Tsuen Wan beaches due to effluent discharged from SCISTW without disinfection. As a result, 4 more Tsuen Wan beaches, in addition to the 3 already closed in the mid-1990s, had been closed since the 2003 bathing season. As requested by the Public Accounts Committee of the Legislative Council when deliberating on Chapter 3 of the Director of Audit's Report No. 42 (see para. 1.12) in 2004, part of the disinfection facilities under HATS Stage 2A was advanced so as to reduce the bacteria level in the western harbour water and facilitate the early reopening of the closed beaches. With disinfection facilities at SCISTW provided under HATS Stage 2A, the chemically treated effluent undergoes disinfection treatment before discharging into the harbour to reduce the bacteria level. The advance disinfection facilities under HATS Stage 2A were commissioned in March 2010 and subsequently modified into final disinfection facilities with additional structures constructed during the upgrading works at SCISTW. With the commissioning of the advance disinfection facilities in March 2010, the water quality at the 7 Tsuen Wan beaches had shown improvement such that all of them had become suitable for swimming and were reopened in phases (4, 1 and 2 beaches were reopened in 2011, 2013 and 2014 respectively).*

Introduction

- (c) the existing eight preliminary treatment works (PTWs) at the northern and south-western parts of Hong Kong Island for collecting sewage and providing preliminary treatment by screening and degritting process were upgraded to cater for the technical requirements of HATS Stage 2A as well as future development and population growth of the respective districts.

1.6 Regarding HATS Stages 1 and 2A, Table 1 shows their major works components and Figure 1 shows their catchment areas and alignment of SCS. Figure 2 shows the sewage collection and treatment process of HATS Stage 2A.

Table 1

HATS Stages 1 and 2A

Stage	Major works component	Works commenced	Works completed	Project commissioned
1	- Construction of SCS - Construction of SCISTW and submarine outfall - Upgrading of seven PTWs at Kwai Chung, Tsing Yi, To Kwa Wan, Kwun Tong, Tseung Kwan O, Shau Kei Wan and Chai Wan	January 1995	December 2001	December 2001
2A	- Construction of SCS - Expansion and upgrading of SCISTW - Upgrading of eight PTWs at North Point, Wan Chai East, Central, Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	April 2008	Main works: December 2015 Other works: January 2018 Further enhancement works: In progress (Note)	December 2015 (Note)

Source: DSD records

Note: HATS Stage 2A was commissioned in December 2015 after the substantial completion of the main works. Some enhancement works at SCISTW are scheduled for completion in May 2021.

Figure 1

Catchment areas and alignment of SCS of HATS Stages 1 and 2A



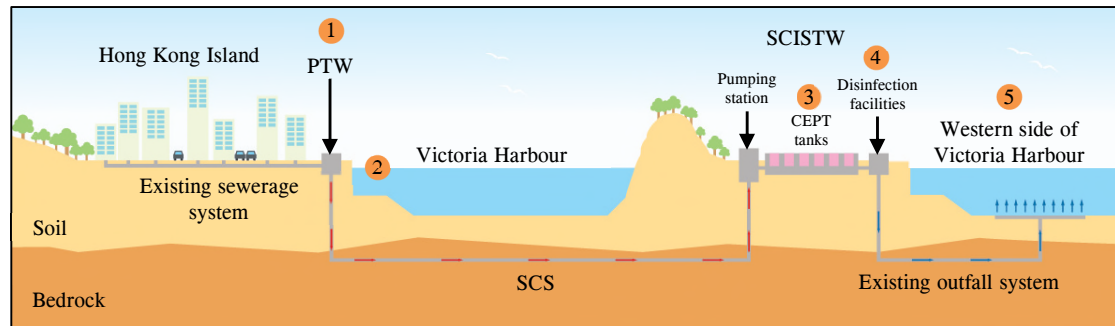
- Legend:
- Stage 1 catchment area
 - Stage 2A catchment area
 - Stage 1 SCS
 - Stage 2A SCS
 - SCISTW
 - Stage 1 PTW
 - Stage 2A PTW

Source: DSD records

Remarks: Sewage from Northwest Kowloon is pumped direct to a PTW adjacent to SCISTW for preliminary treatment before transferring to SCISTW for further treatment.

Figure 2

Sewage collection and treatment process of HATS Stage 2A



- Legend:
- ① Sewage is collected and preliminarily treated by screening and degritting process
 - ② Sewage is conveyed to SCISTW via SCS
 - ③ Sewage undergoes CEPT at SCISTW
 - ④ Sewage undergoes disinfection treatment
 - ⑤ Treated effluent is discharged to the western side of Victoria Harbour

Source: DSD records

Implementation of HATS Stage 2A

1.7 HATS Stage 2A is implemented under five projects (Projects A to E). The approved project estimate (APE) of these projects totalled \$17,591.7 million (see Table 2), comprising:

- (a) a funding of \$17,581.9 million in total approved by the Finance Committee (FC) of the Legislative Council between December 2005 and April 2010 for the investigations, detailed design and construction of HATS Stage 2A; and
- (b) an increase in APE of Project C by \$9.8 million or 8.9% (from \$109.9 million to \$119.7 million) approved by the Secretary for Financial Services and the Treasury (under delegated authority from FC) in April 2008.

Table 2

**Funding approvals for HATS Stage 2A
(December 2005 to April 2010)**

Date	Particulars	Approved amount (\$ million)
<i>Investigations and detailed design</i>		
Project A		
December 2005	Environmental impact assessment (EIA), investigations and tunnel conveyance system design	166.5
Project B		
July 2007	Planning and design of the upgrading works of SCISTW and PTWs	105.6
<i>Construction works</i>		
Project C		
January 2008	Construction of advance disinfection facilities at SCISTW	109.9
April 2008	Increase in APE to cover increased construction costs as a result of higher-than-expected tender prices	9.8 (Note 1)
Project D		
June 2009	Construction of SCS and advance works for upgrading of SCISTW (Note 2)	9,286.5
Project E		
April 2010	Upgrading of SCISTW and PTWs (Note 2)	7,913.4
Total		17,591.7

Source: DSD records

Note 1: Under delegated authority from FC, the Secretary for Financial Services and the Treasury approved this increase in APE.

Note 2: Projects D and E included the works for expansion of SCISTW.

Introduction

1.8 Between January 2006 and September 2009, DSD awarded four consultancies relating to HATS Stage 2A (see Table 3), as follows:

- (a) two consultancies for the design and construction supervision work of HATS Stage 2A which involved 14 works contracts (Contracts A to N — see para. 1.9);
- (b) one consultancy for the EIA study; and
- (c) one consultancy for the independent environmental checker (Note 10).

Table 3
Consultancies for HATS Stage 2A
(July 2019)

Consultancy	Consultant	Cost as of July 2019 (\$ million)	Design and construction supervision work required
X (Awarded in January 2006)	X	69.1	SCS (Contracts A to C)
Y (Awarded in August 2007)	Y	98.8	SCISTW (Contracts D to K) PTWs (Contracts L to N)
EIA study (Awarded in February 2006)		8.2	N/A
Independent environmental checker (Awarded in September 2009)		4.9	N/A
Total		181.0	

Source: DSD records

Note 10: *An independent environmental checker is responsible for checking, reviewing, verifying and validating the overall environmental performance of a project, including the implementation of environmental protection and mitigation measures, submissions relating to environmental monitoring and auditing, and any other submissions required under the environmental permit for a project (which is issued by the Director of Environmental Protection under the Environmental Impact Assessment Ordinance (Cap. 499)).*

1.9 Between April 2008 and July 2019, DSD awarded 14 works contracts to 13 contractors (Note 11) for the implementation of HATS Stage 2A (see Table 4), comprising:

- (a) 3 contracts for the construction of SCS (Contracts A to C);
- (b) 8 contracts for the expansion and upgrading of SCISTW (Contracts D to K);
and
- (c) 3 contracts for the upgrading of PTWs (Contracts L to N).

For the 14 works contracts, the works under all contracts have been completed except Contract K (involving enhancement works at SCISTW) which was awarded in July 2019 with scheduled contract completion date of May 2021. For the 13 completed works contracts, 12 works contracts (i.e. except Contract B) were completed 1 to 33.3 months later than the respective original contract completion dates (see Table 4). According to DSD, extensions of time (EOTs — Note 12) due to various reasons, including inclement weather, had been granted to the contractors in accordance with the terms of the contracts for completion of works later than the original contract completion dates (except for 133 days under Contract C subject to

Note 11: *Contracts L and M were awarded to the same contractor.*

Note 12: *According to the General Conditions of Contract for Civil Engineering Works, regarding contract works commencement, completion and delays: (a) the works and any section thereof shall be completed within the time or times stated in the contract calculated from and including the date for commencement notified by the Engineer or such extended time as may be determined; (b) if the contractor fails to complete the works or any section of works within the time for completion or such extended time as may be granted, then the Employer shall be entitled to recover from the contractor liquidated damages for delay; and (c) if in the opinion of the Engineer, the cause of any delay to the progress of the works or any section of works is any of those stipulated in the General Conditions of Contract (e.g. inclement weather, a variation order (see Note 24 to para. 2.24(a)) issued by the Engineer, the contractor not being given possession of site, etc.), then the Engineer shall within a reasonable time consider whether the contractor is entitled to an EOT for completion of the works or any section thereof. According to the Project Administration Handbook for Civil Engineering Works issued by the Civil Engineering and Development Department, an EOT for completion in effect deprives the Government of the right to liquidated damages for delay in completion of the works for the period of the extension and therefore has a financial implication.*

Introduction

liquidated damages (see Note 4 to Table 7 in para. 2.3) and 59 days under Contract M being assessed by Consultant Y). In the event, HATS Stage 2A was commissioned in December 2015, which was one year later than the target commissioning date of December 2014 as stated in the papers seeking funding approvals from FC.

Table 4
Contracts A to N for HATS Stage 2A
(July 2019)

Contract	Works	Commencement date	Original contract completion date	Actual completion date (Note 1)	No. of months later than original contract completion date (Note 2)
A	Construction of SCS	31.7.2009	5.1.2015	11.11.2016	22.2
B		31.7.2009	5.1.2015	15.12.2014	N/A
C		17.8.2009	16.8.2011	16.5.2014	33.0
D	Expansion and upgrading of SCISTW	29.4.2008	26.8.2009	4.12.2009	3.3
E		30.10.2009	27.6.2012	8.9.2012	2.4
F		17.9.2009	18.12.2011	6.7.2012	6.6
G		24.2.2011	23.7.2016	31.8.2017	13.3
H		25.8.2010	19.5.2016	5.9.2017	15.6
I		30.6.2011	26.1.2015	21.1.2017	23.9
J		5.7.2013	3.2.2015 (Note 3)	4.3.2015 (Note 3)	1.0
K		9.7.2019	4.5.2021	In progress	
L	Upgrading of PTWs	6.1.2011	29.10.2014	30.6.2016	20.1
M		31.8.2011	31.3.2015	8.1.2018	33.3
N		31.8.2016	26.6.2017	15.12.2017	5.7

Source: DSD records

Note 1: Actual completion date refers to the completion of all works under a contract. Some of the works were not main works (e.g. landscaping works) and would not affect the commissioning of HATS Stage 2A. After the substantial completion of the main works under the contracts, HATS Stage 2A was commissioned in December 2015. Enhancement works at SCISTW under Contract K are scheduled for completion in May 2021.

Table 4 (Cont'd)

- Note 2: For the 13 completed works contracts (i.e. except Contract K which is still in progress), 12 works contracts (i.e. except Contract B) were completed later than the respective original contract completion dates. According to DSD, the contractors of the 12 completed works contracts were granted EOTs for completion of works later than the original contract completion dates due to various reasons, including inclement weather. EOTs for inclement weather, which did not attract prolongation costs (see Note 19 to para. 2.21), were granted for 11 of the 12 works contracts, ranging from 0.4 to 1.4 months for Contracts J and M, 1.5 to 4.9 months for Contracts C, D, E and G, and 5 to 8.7 months for Contracts A, F, H, I and L. When comparing with the extended contract completion dates due to inclement weather, 10 of the 11 works contracts (i.e. except Contract E) were completed later than the respective extended dates, ranging from 0.6 to 31.9 months.*
- Note 3: Contract J was a design-build-operate contract (relating to sludge handling and disposal facilities). The original contract completion date and actual completion date were related to the design and build portion. The operation period (10 years plus an optional extension of 5 years) commenced on the day following the completion date of the construction works.*

Costs of HATS Stage 2A

1.10 As of July 2019, \$16,868.7 million (96%) of APE totalling \$17,591.7 million (see para. 1.7) for HATS Stage 2A had been incurred. Of the \$16,868.7 million, \$14,874 million (88%) was related to expenditures for HATS Stage 2A under various works contracts (see Note 4 to Table 5) for:

- (a) construction of SCS (\$7,151 million);
- (b) expansion and upgrading of SCISTW (\$6,191.3 million); and
- (c) upgrading of PTWs (\$1,531.7 million).

The remaining \$1,994.7 million (12%) mainly included resident site staff costs, consultancy fees and expenditures for works carried out by other government departments (see Table 6).

Introduction

Table 5

**Contract sums/expenditures of various works contracts under HATS Stage 2A
(July 2019)**

Contract	Original contract sum (a) (\$ million)	Final contract sum/ up-to-date contract expenditure (Note 1) (b) (\$ million)	Increase/ (decrease) (c) = (b) – (a) (\$ million)	Increase/(decrease) in provision for price fluctuation adjustment (Note 2) (d) (\$ million)	Increase/ (decrease) after price fluctuation adjustment (e) = (c) – (d) (\$ million)
Construction of SCS					
A	3,763.1	4,043.8	280.7 (7.5%)	167.7 (4.5%)	113.0
B	2,544.8	2,827.2	282.4 (11.1%)	10.3 (0.4%)	272.1
C	236.5	280.0	43.5 (18.4%)	8.8 (3.7%)	34.7
Total	6,544.4	7,151.0	606.6 (9.3%)	186.8 (2.9%)	419.8 (6.4%)
Expansion and upgrading of SCISTW					
D	108.0	105.1	(2.9) (-2.7%)	—	(2.9)
E	188.8	188.2	(0.6) (-0.3%)	5.5 (2.9%)	(6.1)
F	533.8	604.5	70.7 (13.2%)	50.0 (9.4%)	20.7
G	2,385.7	2,711.9	326.2 (13.7%)	(97.5) (-4.1%)	423.7
H	1,358.5	1,448.9	90.4 (6.7%)	28.7 (2.1%)	61.7
I	680.0	864.1	184.1 (27.1%)	1.5 (0.2%)	182.6
J (Note 3)	432.3	364.1	(68.2) (-15.8%)	(45.4) (-10.5%)	(22.8)
Total	5,687.1	6,286.8	599.7 (10.5%)	(57.2) (-1.0%)	656.9 (11.6%)
Upgrading of PTWs					
L	625.0	767.4	142.4 (22.8%)	25.0 (4.0%)	117.4
M	528.4	767.4	239.0 (45.2%)	18.8 (3.6%)	220.2
N	11.5	11.4	(0.1) (-0.9%)	(0.7) (-6.1%)	0.6
Total	1,164.9	1,546.2	381.3 (32.7%)	43.1 (3.7%)	338.2 (29.0%)
All completed works contracts					
Overall	13,396.4	14,984.0 (Note 4)	1,587.6 (11.9%)	172.7 (1.3%)	1,414.9 (10.6%)
Enhancement works at SCISTW (scheduled for completion in May 2021)					
K	169.0	N/A (No expenditure incurred as of July 2019)			

Source: DSD records

Table 5 (Cont'd)

- Note 1: The accounts of 9 contracts (Contracts A to F, I, J and N) were finalised between July 2012 and March 2019. As of July 2019, the accounts of 4 contracts (Contracts G, H, L and M) had not been finalised and the respective amounts were the up-to-date contract expenditures.*
- Note 2: The original contract sums of Contracts A to C, E to J and L to N included provisions for price fluctuation adjustments. Contract D did not include a provision for price fluctuation adjustments.*
- Note 3: Contract J was a design-build-operate contract (relating to sludge handling and disposal facilities). The amounts shown in this Table were related to the design and build portion only.*
- Note 4: Of the \$14,984 million, \$14,863.9 million was related to HATS Stage 2A, \$80.4 million was operating expenditure and funded under DSD departmental vote, \$25.2 million was funded under block allocation relating to drainage works, and \$14.5 million was related to works for public works laboratory and funded by the Civil Engineering and Development Department. After adding expenditure of \$10.1 million which was construction in nature and incurred during the operation phase of Contract J, the total expenditures for HATS Stage 2A under various works contracts amounted to \$14,874 million (\$14,863.9 million + \$10.1 million).*

Table 6

**Other expenditures for HATS Stage 2A
(July 2019)**

Item	Amount (\$ million)
Resident site staff costs (Note 1) paid to Consultants X and Y	1,559.6
Consultancy fees	181.0
Works carried out by other government departments (Note 2)	83.2
Miscellaneous costs (Note 3)	170.9
Total	1,994.7

Source: DSD records

- Note 1: Consultants are required to employ resident site staff of different grades (e.g. professional grade and technical grade) for supervising contractors' works. The Government reimburses consultants for the personal emoluments of resident site staff and pays an on-cost to consultants to cover their costs in managing the resident site staff.*
- Note 2: Works carried out by other government departments mainly included public works laboratory services provided by the Civil Engineering and Development Department and post-project monitoring of water quality improvement in the harbour due to the commissioning of HATS Stage 2A carried out by EPD.*
- Note 3: Miscellaneous costs mainly included expenditures on ground investigation works, excavation permits and hiring of services and equipment.*

Water quality of the harbour after commissioning of HATS Stage 2A

1.11 According to ENB and EPD:

- (a) with the phased implementation of HATS, the water quality of the harbour has been significantly improved. After the commissioning of HATS Stage 2A in December 2015, the water quality of the harbour has shown further improvement;
- (b) the bacteria level in the western side of the harbour has been largely reduced following the commissioning of the advance disinfection facilities in March 2010, leading to the reopening of 7 closed Tsuen Wan beaches between 2011 and 2014 (see Note 9 to para. 1.5(b));
- (c) the cross-harbour swimming race, suspended since 1979 because of poor water quality and resumed since 2011 on the eastern side of the harbour, has moved to the legendary route in the central harbour since 2017 as a result of further water quality improvement achieved by the commissioning of HATS Stage 2A; and
- (d) the improvements in water quality during the period from 2016 to 2018 in the harbour were largely in agreement with the predicted water quality benefits of HATS Stage 2A (see Appendix A for details).

Audit review

1.12 In 2004, the Audit Commission (Audit) completed a review on the implementation of HATS Stage 1 and reported the results in Chapter 3 of the Director of Audit's Report No. 42 of March 2004.

1.13 In April 2019, Audit commenced a review to examine the Government's work in managing the implementation of HATS Stage 2A. The audit review has focused on the following areas:

- (a) construction of SCS (PART 2);

- (b) expansion and upgrading of SCISTW (PART 3); and
- (c) upgrading of PTWs (PART 4).

Audit has found room for improvement in the above areas and has made a number of recommendations to address the issues.

Acknowledgement

1.14 Audit would like to acknowledge with gratitude the full cooperation of the staff of ENB, DSD and EPD during the course of the audit review.

PART 2: CONSTRUCTION OF SEWAGE CONVEYANCE SYSTEM

2.1 This PART examines DSD's work in managing contracts for the construction of SCS, focusing on:

- (a) management of Bills of Quantities (BQ) items (paras. 2.4 to 2.18); and
- (b) other contract management issues (paras. 2.19 to 2.32).

Sewage conveyance system

2.2 SCS under HATS Stage 2A comprises a network of interconnected sewage tunnels (see Photograph 1 for an example) and vertical shafts (see Photograph 2 for an example). The vertical shafts collect sewage from eight PTWs in North Point, Wan Chai East, Central, Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau. The collected sewage is conveyed to SCISTW via deep sewage tunnels with a total length of 20.8 km and depths varying from 70 to 160 metres below sea level.

Photograph 1

Sewage tunnel



Photograph 2

Vertical shaft



Source: DSD records

Construction of sewage conveyance system

2.3 Contracts A to C (with a total final contract sum of \$7,151 million) were remeasurement contracts (Note 13) covering the construction of SCS (see Table 7). Consultant X was the Engineer responsible for supervising the contract works.

Table 7

**Construction of SCS under Contracts A to C
(May 2018)**

Contract	Alignment of SCS	Tunnel length (km)	Final contract sum (Note 1) (\$ million)
A (Note 2)	North Point to Stonecutters Island	12.0	4,043.8
B (Note 3)	Aberdeen to Sai Ying Pun	7.5	2,827.2
C (Note 4)	Ap Lei Chau to Aberdeen	1.3	280.0
Total		20.8	7,151.0

Source: DSD records

Note 1: The accounts of Contracts A to C were finalised in April 2018, May 2018 and December 2015 respectively.

Note 2: DSD awarded Contract A to Contractor A in July 2009 at a contract sum of \$3,763.1 million. The works commenced in July 2009 with a contract period of about 65 months. In the event, the contract works were completed in November 2016, about 22.2 months (676 days) later than the original completion date of January 2015 with EOTs (see Note 12 to para. 1.9) for the whole period granted to Contractor A (of which 151.5 days were due to inclement weather).

Note 3: DSD awarded Contract B to Contractor B in July 2009 at a contract sum of \$2,544.8 million. The works commenced in July 2009 with a contract period of about 65 months. In the event, the contract works were completed in December 2014, about 0.7 month (21 days) earlier than the original completion date of January 2015.

Note 4: DSD awarded Contract C to Contractor C in August 2009 at a contract sum of \$236.5 million. The works commenced in August 2009 with a contract period of about 24 months. In the event, with 110 days recovered from delay mitigation measures implemented by Contractor C as approved by DSD at a cost of \$44.5 million under Contract C, the contract works were completed in May 2014, about 33 months (1,004 days) later than the original completion date of August 2011. Of the 1,004 days, EOTs of 871 days were granted to Contractor C (of which 130 days were due to inclement weather) whereas the remaining 133 days were the delays subject to liquidated damages (see Note 12 to para. 1.9) of \$4.4 million recovered from Contractor C.

Note 13: Under a remeasurement contract, the costs of works are based on the actual quantities of works done to be remeasured and the prices of different works items as priced by the contractor in BQ (see paras. 2.4 to 2.6) according to the contract.

Management of Bills of Quantities items

2.4 According to the Project Administration Handbook for Civil Engineering Works (hereinafter referred to as the Project Administration Handbook) issued by the Civil Engineering and Development Department (CEDD):

- (a) BQ are a list of items giving brief identifying descriptions and estimated quantities of the works to be performed; and
- (b) the main functions of BQ are to:
 - (i) allow a comparison of tender prices; and
 - (ii) provide a means of valuing the works.

Compilation of BQ

2.5 For a remeasurement contract, BQ are prepared after completing the works design. The nature and extent of works to be performed are based on the drawings, specifications and conditions of the works contracts, with reference to the Standard Method of Measurement for Civil Engineering Works (Note 14). Related works items are grouped into BQ sections. For each BQ item, an estimated quantity of works to be performed is included in BQ. During the tendering of the contract, tenderers are required to indicate in BQ:

- (a) a rate for each BQ item;
- (b) the amount of each BQ item (i.e. estimated quantity $\times$ BQ rate); and
- (c) the sum of amounts for the BQ items.

Note 14: *The Standard Method of Measurement for Civil Engineering Works lays down the method and criteria for the measurement of civil engineering works undertaken for the Government.*

2.6 After the award of the contract, BQ form part of the contract. Upon completion of the BQ item works, payments are made to the contractor based on the actual quantity of works carried out and the BQ rate of the item.

Omitted items

2.7 An omitted item refers to the omission of an appropriate item in BQ for the works which are shown/provided in the contract drawings or specifications. According to the General Conditions of Contract for Civil Engineering Works, for an omitted item:

- (a) the contractor is required to carry out the works of the omitted item;
- (b) the Engineer shall correct any such omission, and ascertain and certify the value of the works actually carried out;
- (c) if there is a similar item in BQ, the omitted item should be valued at the rate of the similar BQ item; and
- (d) if there is no similar item in BQ, the omitted item should be valued at a rate:
 - (i) based on the rates in the contract so far as may be reasonable and failing which, at a rate agreed between the Engineer and the contractor; and
 - (ii) fixed by the Engineer in the event that the Engineer and the contractor fail to reach an agreement on a rate.

2.8 Audit noted that there was room for improvement in DSD's work in management of BQ items (see paras. 2.9 to 2.17).

Works items in tenderers' design were omitted in BQ

2.9 Audit examination revealed that works items in tenderers' design were omitted in the respective BQ of Contracts A and B. In the course of subsequent contract administration of Contracts A and B, omissions of BQ items were claimed by the pertinent contractors and assessed by Consultant X, leading to payments of \$188.8 million to Contractor A (see Case 1) and \$177.4 million to Contractor B (see Case 2) for carrying out the works of the related omitted items.

Case 1

Omitted items under Contract A

1. The tender drawings of Contract A showed an indicative design which included the construction of two temporary adits (commonly defined as a temporary, mostly horizontal passage into a mine, for access or drainage). A tenderer was asked to take the indicative design for reference and derive a final design (hereinafter referred to as adapted design) based on the specific methods it would use for construction. According to Contractor A's adapted design in its tendered technical submission, in addition to the two temporary adits shown on the tender drawings, there were three horizontal passages to provide safer and more flexible access from the opposite directions of the sewage tunnels. After the award of Contract A to Contractor A, the technical submission formed part of the contract.

2. Contractor A contended that works items for the horizontal passages were omitted in BQ. According to Consultant X's assessment on Contractor A's contention, the horizontal passages had not been measured in BQ so that a correction to BQ was required. DSD agreed with Consultant X's assessment. According to DSD, items for temporary adits in BQ were not applicable because they only referred to the temporary adits as shown on the tender drawings and did not cover the horizontal passages in Contractor A's technical submission. In the event, DSD paid \$188.8 million to Contractor A for carrying out the works of the related omitted items.

Audit comments

3. Works items for three additional horizontal passages under Contractor A's adapted design in its tendered technical submission were omitted items and not included in BQ.

Source: Audit analysis of DSD records

Case 2

Omitted items under Contract B

1. The tender drawings of Contract B showed an indicative design which included the construction of two temporary adits. A tenderer was asked to take the indicative design for reference and derive a final design (i.e. adapted design) based on the specific methods it would use for construction. According to Contractor B's tendered technical submission, it adapted the indicative design into a final design by deleting the two temporary adits shown on the tender drawings and adding three new temporary adits at other site locations (hereinafter referred to as the new temporary adits). After the award of Contract B to Contractor B, the technical submission formed part of the contract.

2. Contractor B contended that works items for the new temporary adits were omitted in BQ and submitted a claim for the costs of performing the related works. According to Consultant X's assessment on Contractor B's contention, the new temporary adits had not been measured in BQ so that a correction to BQ was required. DSD agreed with Consultant X's assessment and considered that:

- (a) the new temporary adits included in the technical submission made by Contractor B in the tender were part of the works under Contract B. This was because according to a contract clause of Contract B, the technical submission shall form part of the contract and Contractor B shall execute the works in accordance with the said submission; and
- (b) there should be separate measurement items for temporary adits and the new temporary adits were omitted in BQ.

3. In the event, DSD paid \$177.4 million to Contractor B for carrying out the works of the related omitted items.

4. Audit noted that:

- (a) according to DSD, Contractor B entered "Not Applicable" in BQ for the two temporary adits in the indicative design as the concerned works items would not be constructed as proposed under Contractor B's technical submission;
- (b) according to Consultant X, in the indicative design there were two temporary adits, which were measured and included under the BQ items. Contractor B priced BQ items as "Not Applicable", which maintained competitiveness of Contractor B's tender; and

Case 2 (Cont'd)

- (c) according to Consultant X's assessment on Contractor B's contention, Contractor B introduced the new temporary adits in its technical submission and such adits were not measured and included under BQ items.

Audit comments

- 5. Works items for three new temporary adits under Contractor B's adapted design in its tendered technical submission were omitted items and not included in BQ.

Source: Audit analysis of DSD records

2.10 In response to Audit's enquiries about the requirements for dealing with a tenderer's design in BQ under the Project Administration Handbook and relevant technical circular, in September 2019, CEDD and DSD informed Audit that:

CEDD

- (a) Development Bureau Technical Circular (Works) No. 3/2014 of April 2014 on "Contractors' Designs and Alternative Designs" (hereinafter referred to as the 2014 Technical Circular) set out the requirements on the matter. According to the 2014 Technical Circular, a tenderer's design shall be priced as a lump sum item supported by a fully priced and detailed Schedule of Rates. The lump sum item should be included in BQ;
- (b) the temporary works in the adapted designs of Contractors A and B (see Cases 1 and 2 in para. 2.9) appeared to fall within the definition of tenderer's design under the 2014 Technical Circular; and

DSD

- (c) while the previous version of the 2014 Technical Circular (prevailing at the time of tender invitations for Contracts A and B in December 2008 — Note 15) had set out the requirements in (a) above, it was only applicable to permanent works in a tenderer’s design, but not “works of a short limited lifespan or temporary in nature” (which were subsequently included in the 2014 Technical Circular). As a result, the Circular at that time was not applicable to the temporary works in the adapted designs of Contractors A and B (see Cases 1 and 2 in para. 2.9) which involved temporary adits used solely by the pertinent contractors as construction method to facilitate their construction works.

2.11 In Audit’s view, in implementing a works project in future, DSD needs to include works items in a tenderer’s design as a lump sum item in BQ.

Need to critically check the completeness of BQ items

2.12 Audit examination revealed that the omission of BQ items for excavation in shafts involving one type of excavated materials led to payment of \$68.5 million to Contractor A for carrying out the works of the related omitted items (see paras. 2.13 to 2.16).

2.13 Under Contract A, Contractor A was required to carry out excavation in shafts by either blasting method or mechanical/manual method. According to Contract A, for the purposes of measurement of excavation in shafts:

- (a) different types of excavated materials were defined in contract clauses, as follows:
 - (i) for each length along the centreline of the permanent shaft covered by one round of blasting or excavation, the whole length shall be

Note 15: *Environment, Transport and Works Bureau Technical Circular (Works) No. 25/2004 of August 2004 on “Contractors’ Designs and Alternative Designs” was replaced by the 2014 Technical Circular.*

Construction of sewage conveyance system

classified as “bedrock” (hereinafter referred to as Type 1 material) if not less than 75% of the area of the exposed ground surfaces on the bottom and sides of the shaft is formed by decomposition Grades I, II or III rock (Note 16), otherwise the whole length shall be classified as “ground other than bedrock” (hereinafter referred to as Type 2 material); and

- (ii) where the ground condition requires excavation using mechanical/manual method (Note 17) that length of excavation will be measured as “material other than bedrock” (hereinafter referred to as Type 3 material); and
- (b) separate items should be provided in BQ for excavation of different types of excavated materials in shafts.

2.14 Under BQ of Contract A, items were provided for excavation of Types 1 and 2 materials in shafts but not Type 3 material. Contractor A contended that works items for excavation of Type 3 material in shafts were omitted in BQ and submitted a claim for the costs of performing the related works. After an initial assessment, Consultant X rejected Contractor A’s claim on the grounds that:

- (a) the whole length of the shaft would fall into the definition of either Type 1 or Type 2 material; and
- (b) Type 3 material had been adequately covered under the classification of Type 2 material.

2.15 Contractor A did not agree with Consultant X’s assessment. Consultant X then conducted a further review of Contractor A’s claim and assessed that excavation

Note 16: *Decomposition grades of rock material are classified into Grades I to VI (with descending rock hardness) under the Guide to Rock and Soil Descriptions issued by the Geotechnical Engineering Office of CEDD.*

Note 17: *Excavation using mechanical/manual method is adopted unless blasting method is permitted by the Mines Division of CEDD. In addition, in soil or when the rock content is low, blasting method would not be applicable and excavation can only be carried out using mechanical/manual method.*

of Type 3 material in shafts by mechanical/manual method had not been measured in BQ so that a correction to BQ was required. DSD agreed with Consultant X's assessment and considered that BQ items for Type 2 material did not include Type 3 material in view of the following:

- (a) Types 2 and 3 materials were referring to two totally different types of excavation method, namely blasting method and mechanical/manual method; and
- (b) excavation by mechanical/manual method did not involve separate working cycles and there was no "area of the exposed ground surfaces" as in the case of excavation by blasting method. This implied that the contract clause mentioned in paragraph 2.13(a)(i) was not intended to be applicable for the measurement of excavation in shafts by mechanical/manual method.

In the event, DSD paid \$68.5 million to Contractor A for carrying out the works of the related omitted items.

2.16 Audit noted that, in February 2010 (after the awards of Consultancy X and Contract A in January 2006 and July 2009 respectively), CEDD amended the Project Administration Handbook concerning preparation of BQ as follows:

- (a) all works items should be included in BQ and omitted items should be minimised as far as practicable;
- (b) BQ should undergo a checking process to ensure the completeness and accuracy of BQ and elimination of major errors; and
- (c) the above measures would facilitate competitive tendering, reduce resources for valuation of omitted items and minimise the disputes arising from the valuation of omitted items.

According to DSD, since November 2015, it has required an independent checking of BQ of its works contracts. In Audit's view, in implementing a works project in future, DSD needs to continue to make efforts to strengthen checking of BQ for ensuring the completeness and accuracy of BQ.

Audit recommendations

2.17 Audit has *recommended* that, in implementing a works project in future, the Director of Drainage Services should:

- (a) include works items in a tenderer's design as a lump sum item in BQ; and
- (b) continue to make efforts to strengthen checking of BQ for ensuring the completeness and accuracy of BQ.

Response from the Government

2.18 The Director of Drainage Services agrees with the audit recommendations.

Other contract management issues

2.19 Apart from the management of BQ items, Audit noted that there was scope for DSD to enhance contract management work in other areas (see paras. 2.20 to 2.31).

Scope for better ascertaining the presence of government structures in the vicinity of the works sites before inviting tenders

2.20 Under Contract B, Contractor B was required to construct a shaft at the Aberdeen PTW. Audit examination revealed that some government structures in the vicinity of the works sites were identified after the award of Contract B in July 2009. The salient points are as follows:

- (a) prior to the commencement of excavation works, Contractor B informed Consultant X in August 2009 that the location of the shaft at the Aberdeen PTW was in conflict with the actual alignment of an existing trunk sewer of DSD (based on the paper-based construction records created in 2003). To resolve the conflict, the alignments of the location of the shaft, connection channel and tunnel had to be revised. According to Consultant X, the revised works reduced the working space available

around the shaft at the Aberdeen PTW (including the areas for temporary storage of excavated materials and access by dump trucks to remove excavated materials) and the planned working efficiency (unable to achieve the blasting cycle of two blasts per day at the shaft), thereby causing delay to the progress of works;

- (b) after the commencement of excavation works, Contractor B identified in October 2009 an abandoned underground reinforced concrete structure that belonged to DSD within the works site of the Aberdeen PTW. To enable the excavation works at the shaft to proceed, additional works had to be carried out to demolish and excavate through part of the structure, thereby causing delay to the progress of the excavation works; and
- (c) Audit noted that:
 - (i) the possibility of underground government structures was investigated at the design stage by Consultant X who requested as-built drawings of structures near the shaft locations from DSD (i.e. Sewage Treatment Division and Hong Kong and Islands Division (Buildings/Civil Maintenance Team)). However, DSD was unable to provide as-built drawings showing that the underground structures (i.e. the trunk sewer and the reinforced concrete structure) existed at the works site of the Aberdeen PTW before inviting the tender; and
 - (ii) after Contractor B encountered the underground reinforced concrete structure (see item (b) above), Consultant X tried to obtain the then as-built drawings of that structure from DSD again and discovered in early October 2013 that such drawings were kept in the records of the Project Management Division of DSD. The underground reinforced concrete structure was the remaining structure of a screw pumping station inlet chamber that had been partially demolished, backfilled and grassed in 1998 under a DSD works contract and the related as-built drawings were submitted to DSD in 2004 (i.e. before the tendering of Contract B in 2009).

Construction of sewage conveyance system

2.21 In the event, EOTs ranging from 95 to 411.5 days were granted for completion of various sections of works under Contract B (Note 18), leading to prolongation costs (Note 19) of \$323.3 million. In this connection, for Contracts I, L and M, Audit also noted similar issues relating to variations to the works due to the identification of government structures in the vicinity of the works sites after contract awards, resulting in significant prolongation costs and EOTs granted (see Appendix B for details).

2.22 According to Environment, Transport and Works Bureau Technical Circular (Works) No. 17/2004 on “Impossibility/Unforeseen Ground Conditions/Utility Interference”, project officers should:

- (a) investigate the existence of any buried underground structures such as abandoned old seawalls, pile caps, etc. within or in the vicinity of the works site and verify the accuracy of the records of these buried structures; and
- (b) satisfy themselves that the utility records obtained from utility undertakings or other sources are reasonably accurate before the completion of the detailed design. Depending on the scale and nature of the contract, project officers should conduct desk search and, if necessary, site inspection for the purpose of verifying the utility records.

2.23 In Audit’s view, in implementing a works project in future, DSD and its consultants need to better ascertain the presence of government structures in the

Note 18: *Although EOTs were granted for completion of various sections of works under Contract B, there was no delay for the overall completion of Contract B as the extended times for completion of these sections of works were earlier than the original contract completion date of January 2015.*

Note 19: *Prolongation costs are generally the time related costs (e.g. the costs of a contractor’s site establishment, site overheads and general plant) that are typically affected by a delay to the critical path of construction works. Works contracts include provisions for granting EOTs for completion due to events covered by the contract provisions, such as additional works, inclement weather, etc. The Engineer would assess the actual situation of each case, with the prolongation costs calculated as the time related costs additionally incurred for the relevant delay duration of those events for which prolongation costs are grantable.*

vicinity of the works sites before inviting tenders (e.g. through collecting and reviewing as-built drawings of structures from the related divisions of DSD).

Scope for enhancing pre-tender site investigations

2.24 The works under Contract C, covering the construction of 1.3-km deep sewage tunnels between Ap Lei Chau and Aberdeen by the Horizontal Directional Drilling (HDD) method (Note 20), commenced in August 2009 with a contract period of about 24 months. In the event, the contract works were completed in May 2014, about 33 months (1,004 days) later than the original completion date of August 2011 (of which 130 days were due to inclement weather — see Note 4 to Table 7 in para. 2.3). The delays were mainly due to adverse ground conditions undetected in pre-tender site investigations relating to three events, as follows:

- (a) construction works under Contract C involved the installation of steel casings (for supporting the soft ground for subsequent drilling operations) at the entry and exit points of the sewage tunnels at the Ap Lei Chau and Aberdeen PTWs. Contractor C encountered underground obstructions (large boulders and reinforced concrete slab — Note 21) that rendered the installation of steel casings by a trenchless placement technique (Note 22)

Note 20: *According to DSD, HDD method was:*

- (a) *a relatively new construction method at that time especially with such length of sewage tunnel involved. HDD is a surface-launched and remotely controlled drilling technique. The three-stage operation consists of drilling a pilot hole along the proposed alignment of the tunnel, then enlarging the pilot hole by reaming (see Note 26 to para. 2.24(b)), and followed by jointing and pulling of high density polyethylene pipes into the enlarged hole forming the tunnel; and*
- (b) *used under Contract C (instead of the drill-and-blast method under Contracts A and B) to allow better control of the curving vertical and horizontal alignments of sewage tunnels.*

Note 21: *According to DSD, there was no record showing whether the obsolete reinforced concrete slab was a structure belonged to DSD or other government departments.*

Note 22: *Trenchless placement technique refers to a construction method with most excavation works conducted underground that requires minimum or no excavation from the ground surface. The technique is being used for the installation of new, replacement or rehabilitation of existing underground infrastructure with minimal disruption to surface traffic, business and other activities.*

Construction of sewage conveyance system

(a construction method specified under Contract C) at tunnel exit points at the Ap Lei Chau and Aberdeen PTWs physically impractical, and had to use an open trench technique (Note 23) to remove the boulders and slab. In the event, a variation order (VO — Note 24) (later valued at a cost of \$9.5 million) was issued for revising the construction method and EOTs of 264.5 days were granted for completion of two sections of works, leading to prolongation costs of \$6.3 million;

- (b) cavities in rock led to two incidents of rapid loss of bentonite drilling fluid (Note 25) during the reaming (Note 26) and cleaning process of drilled holes along the sewage tunnels. Contractor C had to perform localised grouting (i.e. ground stabilisation works) to rectify the situation. In the event, EOTs of 116.5 days were granted for completion of two sections of works (Note 27); and
- (c) increased hardness of rock caused delays in the drilling and reaming process along the sewage tunnels. Based on the site tests conducted after the commencement of works, the level of hardness of the rock encountered on site was significantly higher than that of the samples obtained during the

Note 23: *Open trench technique is a traditional and common construction method for excavation works that involves digging a trench along the proposed pipeline route, placing the pipe in the trench on a suitable bedding material, and then backfilling.*

Note 24: *The Engineer shall order any variation to any part of the works that is necessary for the completion of the works or for any other reason shall in the Engineer's opinion be desirable for or to achieve the satisfactory completion and functioning of the works. The Engineer shall also determine the sum which in his opinion shall be added to or deducted from the contract sum as a result of issuing a VO.*

Note 25: *Bentonite drilling fluid is utilised in tunnelling works during drilling of pilot holes and their subsequent enlargement by reaming (see Note 26 to para. 2.24(b)) to lubricate the equipment, transport cuttings from the tunnels and provide support for the excavated tunnel walls.*

Note 26: *Reaming is a process used to enlarge the tunnel bore to facilitate installation of high density polyethylene pipes after the completion of pilot hole drilling.*

Note 27: *According to DSD, for the EOTs granted, Contractor C was not entitled to claim for additional payments of carrying out localised grouting and prolongation costs.*

pre-tender site investigations. In the event, EOTs of 360 days were granted for completion of two sections of works (Note 28).

In the event, EOTs totalling 741 days (264.5 days + 116.5 days + 360 days) were granted for completing each of two sections of works under Contract C due to adverse ground conditions undetected in pre-tender site investigations.

2.25 In September 2019, DSD informed Audit that:

- (a) in anticipation of the complicated ground conditions in the construction of the 20.8-km long deep sewage tunnels under HATS Stage 2A, substantial pre-tender site investigations had been conducted to facilitate the construction works; and
- (b) pre-tender site investigations included 116 vertical/inclined boreholes (totalling 16 km in length) and the use of the state-of-the-art Horizontal Directional Coring technique (Note 29) to extract horizontal cores at 6 sections of the tunnel alignment (totalling 5 km in length).

2.26 Audit noted that, in January 2005, the Geotechnical Engineering Office of CEDD issued GEO Technical Guidance Note No. 24 on “Site Investigation for Tunnel Works” providing guidance on site investigation for tunnelling works in Hong Kong (Note 30). According to the Technical Guidance Note, pre-tender site investigation should be as comprehensive as possible to provide adequate information for the design of tunnelling works and contract preparation.

Note 28: *According to DSD, for the EOTs granted, Contractor C was not entitled to claim for additional payment of prolongation costs.*

Note 29: *Horizontal Directional Coring technique provides a continuous core sample and more reliably identifies the extent of problematic ground and groundwater conditions along the tunnel alignment. Hence, the risk of unforeseen tunnelling conditions can be minimised compared to using only conventional vertical and inclined boreholes.*

Note 30: *The Technical Guidance Note was issued in response to an audit recommendation (included in Chapter 3 on “Harbour Area Treatment Scheme Stage 1” of the Director of Audit’s Report No. 42 of March 2004) relating to the promulgation of guidelines for improving site investigations, particularly for tunnel projects.*

Construction of sewage conveyance system

2.27 In the light of the experience gained under Contract C, Audit considers that, when implementing a works contract involving tunnelling works in future, DSD and its consultants need to further enhance pre-tender site investigations, particularly for works at critical locations, with a view to providing better information on site conditions for design and tender purposes as far as practicable.

Need to conduct post-completion review

2.28 According to the Project Administration Handbook:

- (a) a post-completion review is a useful project management tool and shall be conducted upon the substantial completion of a major consultancy agreement or a major works contract on projects under the Public Works Programme;
- (b) as a broad guideline, post-completion reviews are generally not warranted for consultancy agreements and works contracts of a project which has a total cost less than \$500 million or of a project which does not involve complicated technical and management issues;
- (c) indicators that a project involves complicated issues may include, among others, project involving a claim of a substantial sum, say over \$1 million;
- (d) works contracts with a significant amount of omitted items should be reviewed upon substantial completion of the contracts with a view to identifying areas for improvement in preparation of BQ;
- (e) a post-completion review should be carried out within a reasonable period, say six months, after the substantial completion of a consultancy agreement or a works contract;
- (f) for a project that comprises a number of contracts/consultancy agreements, the project office may elect, in view of the benefit of an overall review, to conduct a single post-completion review upon the substantial completion of the last contract; and

- (g) upon the completion of a post-completion review, the department shall prepare a report documenting all concerned issues, findings, conclusions and recommendations for future reference by the department.

2.29 DSD completed a post-completion review for HATS Stage 1 in March 2004. The review found that, with the valuable experience gained in HATS Stage 1, various aspects (Note 31) in future delivery of similar projects could be improved.

2.30 Audit noted that HATS Stage 2A involved a significant project expenditure of \$16,868.7 million as of July 2019 (see para. 1.10). Some of the works contracts under the project involved significant amounts of claims or omitted items (e.g. Contracts A and B involved omitted items for measurement of temporary adits of \$188.8 million and \$177.4 million respectively — see para. 2.9). As of September 2019, while all works contracts (except Contract K — see para. 1.9) of HATS Stage 2A had been substantially completed and it had been commissioned for some 3.7 years, no post-completion review was conducted. According to DSD:

- (a) for a project that comprises a number of contracts/consultancy agreements, the project office may elect to conduct a single post-completion review upon the substantial completion of the last contract (see para. 2.28(f)); and
- (b) while one works contract (i.e. Contract K) under HATS Stage 2A was still on-going and the post-completion review was intended to be conducted after the completion of this remaining works contract, DSD considered that conducting a post-completion review for those completed works contracts first would help identify areas for early improvement.

As post-completion review is a useful project management tool and such review was also conducted for HATS Stage 1 in 2004, Audit considers that it is an opportune time for DSD to conduct a post-completion review for those completed works contracts of HATS Stage 2A first with a view to identifying areas for early improvement.

Note 31: *The aspects included: (a) planning and design of deep tunnels; (b) risk management of underground works; (c) selection and management of contractors; and (d) the use of multiple contracts.*

Audit recommendations

- 2.31 **Audit has *recommended* that the Director of Drainage Services should:**
- (a) **in implementing a works project in future, better ascertain the presence of government structures in the vicinity of the works sites before inviting tenders (e.g. through collecting and reviewing as-built drawings of structures from the related divisions of DSD);**
 - (b) **when implementing a works contract involving tunnelling works in future, further enhance pre-tender site investigations, particularly for works at critical locations, with a view to providing better information on site conditions for design and tender purposes as far as practicable; and**
 - (c) **consider conducting a post-completion review for those completed works contracts of HATS Stage 2A first with a view to identifying areas for early improvement.**

Response from the Government

2.32 The Director of Drainage Services agrees with the audit recommendations. He has said that:

- (a) DSD is currently developing a system through the use of Building Information Modelling, Geographical Information System and Point Cloud techniques to strengthen the communication amongst parties concerned and the record-keeping of utilities and obsolete underground structures; and
- (b) substantial pre-tender site investigations had already been conducted for the construction of the deep sewage tunnels under HATS Stage 2A. In future projects, in the light of the experience gained, more site investigations will be carried out as far as practicable to provide better information on site conditions. However, it should be noted that the risks of unexpected ground conditions cannot be removed completely even with more comprehensive site investigations.

PART 3: EXPANSION AND UPGRADING OF STONECUTTERS ISLAND SEWAGE TREATMENT WORKS

3.1 This PART examines DSD's work in managing contracts for the expansion and upgrading of SCISTW, focusing on:

- (a) design and provision of deodourisation (DO) facilities (paras. 3.5 to 3.19); and
- (b) other contract management issues (paras. 3.20 to 3.28).

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

3.2 SCISTW (see Photograph 3), constructed under HATS Stage 1, occupies an area of 10.6 hectares and was expanded and upgraded under HATS Stage 2A to increase its design daily treatment capacity and to provide disinfection facilities (see para. 1.5(b)).

Photograph 3

SCISTW



Source: DSD records

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

3.3 DSD awarded eight works contracts (Contracts D to K) for the expansion and upgrading works for SCISTW. Except Contract K which was awarded in July 2019 with scheduled contract completion date of May 2021, all the other seven works contracts (Contracts D to J) had been completed between December 2009 and September 2017 (see Table 4 in para. 1.9) with a total expenditure of \$6,286.8 million as of July 2019. Consultant Y was the Engineer responsible for supervising the contract works. Table 8 shows the works and expenditures under Contracts D to K. Figure 3 shows the locations of such works.

Table 8

Expansion and upgrading works for SCISTW under Contracts D to K (July 2019)

Contract	Contract type	Works	Final contract sum/ up-to-date contract expenditure (Note 1) (\$ million)
D	Lump sum contract (Note 2)	Construction of advance disinfection facilities (see Note 9 to para. 1.5(b))	105.1
E		Provision of covers and DO facilities to the existing sedimentation tanks (Note 3)	188.2
F	Remeasurement contract	Construction of interconnection tunnel and diaphragm wall for Main Pumping Station (MPS) No. 2	604.5
G		Upgrading works – MPS No. 2, sedimentation tanks and ancillary facilities (Note 3)	2,711.9
H		Upgrading works – sludge dewatering facilities (Note 3)	1,448.9
I		Upgrading works – effluent tunnel and disinfection facilities (Note 3)	864.1
J	Design-build-operate contract (Note 4)	Upgrading works – sludge handling and disposal facilities	364.1 (Note 5)
K	Remeasurement contract	Enhancement of DO system	— (Note 6)
Total			6,286.8

Source: DSD records

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

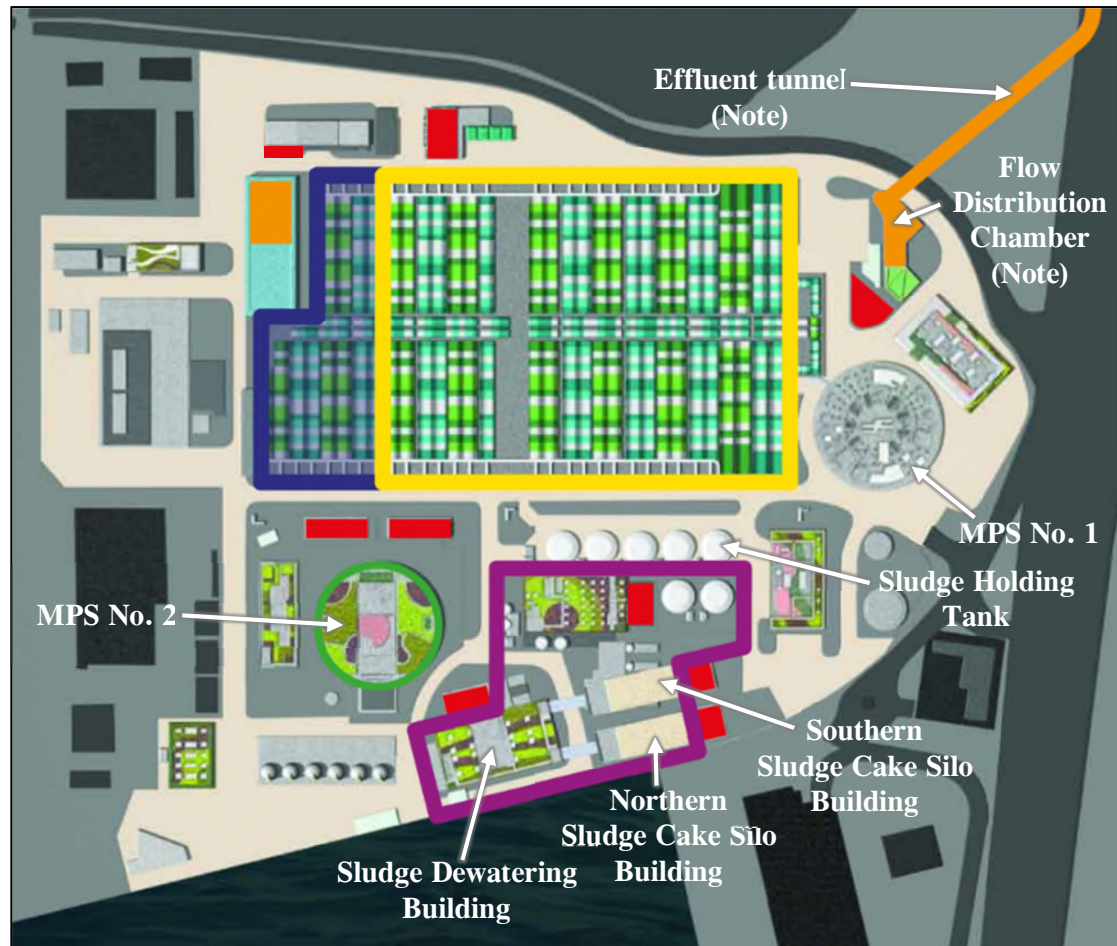
Table 8 (Cont'd)

- Note 1: The accounts of five contracts (Contracts D to F, I and J) were finalised between July 2012 and March 2019. As of July 2019, the accounts of two contracts (Contracts G and H) had not been finalised and the respective amounts were the up-to-date contract expenditures.*
- Note 2: Under a lump sum contract, the quantities of various works items are substantially measured firm and the final price to be paid is ascertained by adding to/deducting from the contractor's accepted tender price the value of variations and other specified items (e.g. provisional quantities and contingency items).*
- Note 3: A total of 11 DO units were constructed under Contracts E (2 units), G (2 units), H (4 units) and I (3 units).*
- Note 4: Under a design-build-operate contract, the contractor takes on full responsibility for the design, construction, operation and maintenance of the works but the Government retains the ownership of the works.*
- Note 5: The amount was related to the design and build portion only.*
- Note 6: Contract K was awarded in July 2019 at a contract sum of \$169 million with scheduled contract completion date of May 2021.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

Figure 3

Expansion and upgrading works for SCISTW



- Legend:
- Disinfection facilities
 - Covers installation at sedimentation tanks
 - DO units (with several sets of DO facilities inside each unit)
 - MPS No. 2
 - Expansion of sedimentation tanks
 - Sludge dewatering facilities

Source: DSD records

Note: The chemically treated effluent is conveyed to the Flow Distribution Chamber where bleach (sodium hypochlorite) is added for disinfection. The treated effluent undergoes disinfection process in the effluent tunnel to reduce the bacteria level in the effluent.

Remarks: Two DO units located at the end of the effluent tunnel and the underground interconnection tunnel transferring sewage between MPS No. 1 and MPS No. 2 are not shown in this Figure.

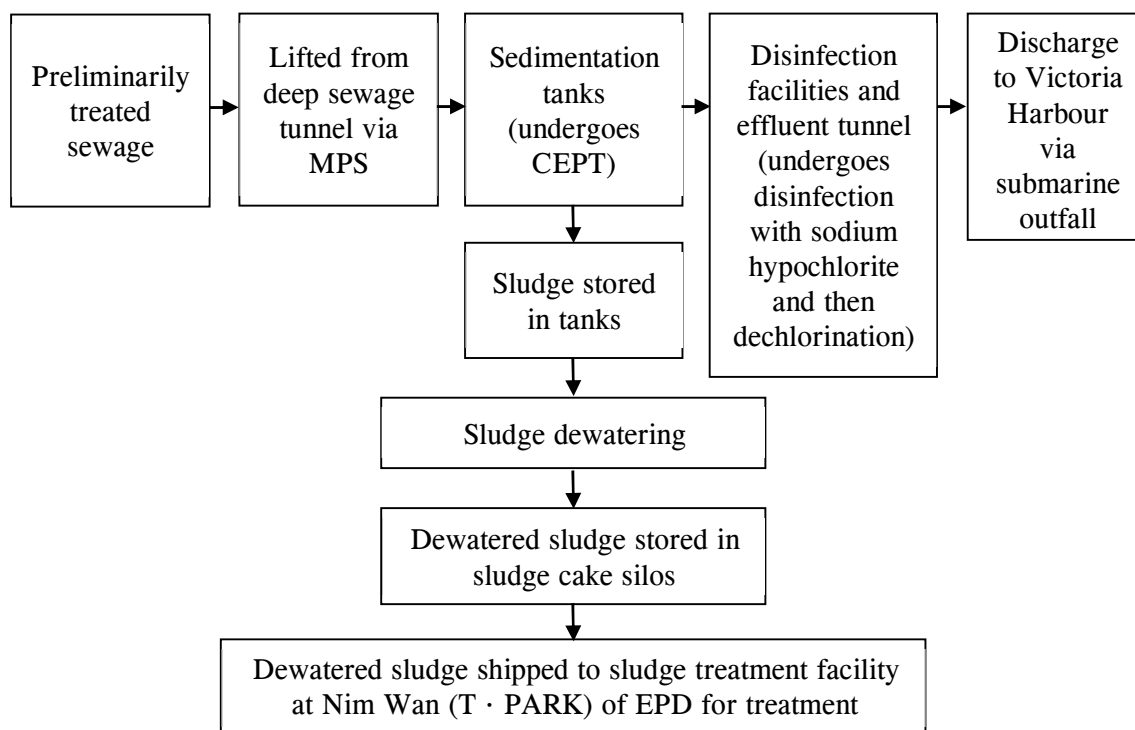
3.4 All sewage generated from the harbour catchment is transferred via deep sewage tunnels to SCISTW for centralised CEPT and disinfection before discharging into the harbour (see Figure 4 for the sewage treatment process at SCISTW). The discharge from SCISTW is required to comply with the conditions of discharge licence issued by the Director of Environmental Protection under the Water Pollution Control Ordinance (Cap. 358). The conditions include limitations on the quantity and composition (i.e. suspended solids, *Escherichia coli*, biochemical oxygen demand and total residual chlorine) of discharge. According to DSD:

- (a) the monitoring data relating to the quantity and composition of discharge from SCISTW is uploaded onto its website; and
- (b) SCISTW generally complied with the conditions of discharge licence since the commissioning of HATS Stage 2A in December 2015 (Note 32).

Note 32: *According to DSD, there were four non-compliance cases (exceeding the percentile standard for biochemical oxygen demand of discharge) in August, November and December 2016 and one non-compliance case (exceeding the upper limit for total residual chlorine of discharge) in July 2017. There had not been any non-compliance with the conditions of discharge licence since August 2017 and up to July 2019.*

Figure 4

Sewage treatment process at SCISTW



Source: Audit analysis of DSD records

Design and provision of deodourisation facilities

3.5 Pursuant to the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499 — Note 33), DSD commissioned a consultant to conduct an EIA study for HATS Stage 2A in February 2006. The study was completed in June 2008 and the EIA report was approved by the Director of Environmental Protection in October 2008. An environmental permit was issued in November 2008.

Note 33: *Under EIAO, a person who wishes to carry out a designated project needs to submit a project profile to the Director of Environmental Protection for issuing an EIA study brief. Thereafter, he needs to prepare an EIA report based on the EIA study brief for submission to the Director for approval, and to obtain an environmental permit before constructing or operating the project. HATS Stage 2A was a designated project (sewage collection, treatment, disposal and reuse) under EIAO.*

3.6 According to the EIA report, odour emission from sewage treatment works, including SCISTW, would be the main concern during the operation phase of the project. According to DSD, to contain the odour problem, all potentially odourous facilities at SCISTW, including the pumping stations, Sludge Dewatering Building (SDB), sludge cake silo buildings, sedimentation tanks, etc. are enclosed and controlled to provide an odour-free environment. The foul air inside the enclosures is extracted and ducted to designated DO facilities to undergo treatment using chemical scrubber, bio-trickling filter and activated carbon filter technology (Note 34) before it is released into the open air.

3.7 According to the criteria for evaluating air quality impact stipulated in the technical memorandum (Note 35) issued under EIAO, the odour level at an air sensitive receiver (Note 36) should not exceed 5 odour units (OU) based on an averaging time of five seconds (hereinafter referred to as the odour criterion). According to Consultant Y (who subsequently specified the design requirements of the DO facilities based on the EIA findings — Note 37), hydrogen

Note 34: *Three commonly used DO technologies are as follows: (a) chemical scrubber allows the contact of odourous gas with a scrubbing solution. Odour contaminants are transferred from the gas stream to the scrubber liquid through adsorption, thereby oxidised by the scrubbing chemicals; (b) bio-trickling filter uses biological odour treatment technology for treating odourous gas. In bio-trickling filter, the micro-organism plays the main role for the entire DO process. The micro-organisms live in the air-permeable inert media inside the bio-trickling filter tower. When the air stream passes through the media, the micro-organisms can absorb and dissolve the smelly compounds to make the air clean; and (c) activated carbon filter is more commonly adopted for low hydrogen sulphide or odour level environment or used as secondary polishing unit in sewage treatment works. The odourous gas is introduced in the adsorber vessel and blown through the caustic impregnated activated carbon bed where the contaminants are entrained and oxidised.*

Note 35: *The technical memorandum sets out the principles, procedures, guidelines, requirements and criteria for compiling a project profile, an EIA study brief and an EIA report, and issuing an environmental permit.*

Note 36: *Any domestic premises, hotel, hostel, hospital, clinic, nursery, temporary housing accommodation, school, educational institution, office, factory, shop, shopping centre, place of public worship, library, court of law, sports stadium or performing arts centre shall be considered to be an air sensitive receiver.*

Note 37: *According to DSD, for the purpose of studying the effectiveness of the proposed odour mitigation measures, an in-situ odour sampling was conducted and computational modelling technique was used in the EIA study to assess the air quality impact at the air sensitive receivers.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

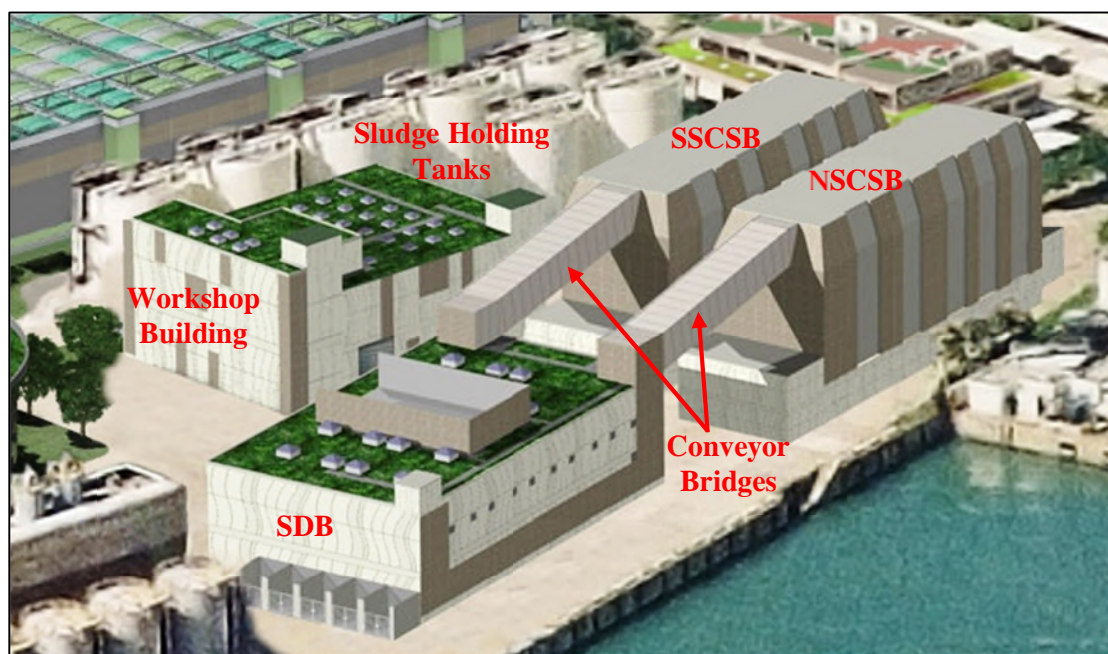
sulphide (H_2S — Note 38) is often highlighted as the indication of odour from sewage treatment works and 5 OU are roughly equivalent to 0.0025 part per million HS by volume.

Need to draw on the experience gained in design changes of DO facilities

3.8 Under Contract H, Contractor H was originally required to construct a DO unit as a centralised system for treating foul air extracted from SDB (including the Conveyor Bridges), the Northern Sludge Cake Silo Building (NSCSB) and the Southern Sludge Cake Silo Building (SSCSB) (see Figure 5). The original design of the DO unit (located at SDB) adopted chemical scrubber treatment with activated carbon filter technology due to the relatively high odour (HS) loading from the three buildings and the limited space available for accommodating the DO unit.

Figure 5

Schematic diagram of sludge dewatering facilities under Contract H



Source: DSD records

Note 38: H_2S is a toxic gas and can be a health hazard especially in confined spaces. As H_2S is relatively easy to measure and particularly detected by the human nose, it is often used as a target indicator for odour.

3.9 There were design changes of DO facilities after the award of Contract H. The salient points are as follows:

Tender stage

- (a) according to DSD, notwithstanding the approval of the EIA report in accordance with EIAO before the tender invitation, during the tender stage of Contract H, key stakeholders requested tightening the odour control measures to further reduce the odour released from NSCSB and SSCSB when sludge container vehicles enter the buildings. As the tender would soon close at that time, DSD issued a tender addendum (Note 39) for incorporating a provisional sum (Note 40) in the tender which required the contractor to design and construct a double door enclosure system (Note 41) for each of NSCSB and SSCSB during the construction stage; and

Construction stage

- (b) during the construction stage:
 - (i) Consultant Y issued site instructions to Contractor H to implement the works under the provisional sum (later valued at a cost of \$18.3 million). Under the site instructions, Contractor H was required to design and construct one-storey reinforced concrete framed structures as extensions to the buildings (i.e. NSCSB and SSCSB), and the double door enclosure systems to enable better odour control;

Note 39: *If amendments to tender documents are found necessary after they have been issued to tenderers, such amendments shall be processed as a tender addendum to all tenderers.*

Note 40: *Provisional sum means a sum provided for works or expenditure which has not been quantified or detailed at the time the tender documents are issued.*

Note 41: *The construction of a double door enclosure system achieved better odour control by enclosing the air space within NSCSB and SSCSB for DO when sludge container vehicles enter the buildings.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

- (ii) Contractor H proposed and DSD approved a cost saving design (Contractor H estimated that there would be a saving of \$1.5 million for construction cost and about \$24.7 million for recurrent cost over the design life of 15 years) under which all the dewatered sludge from SDB would be transferred to NSCSB and SSCSB in air sealed pipework, thereby reducing a considerable amount of the odour loading from NSCSB and SSCSB;
- (iii) with the additional space made available at the roof of the double door enclosure systems (see item (b)(i) above) and the reduced odour loading (see item (b)(ii) above), Consultant Y took the initiative to revisit the use of bio-trickling filter treatment technology (which was considered infeasible during the design stage given the space limitations) and to review the original design of the DO unit. The review found that bio-trickling filter system (a more environmentally friendly system that uses less chemical and electricity as compared to a chemical scrubber system of the same DO capacity) was technically applicable for NSCSB and SSCSB; and
- (iv) in the event, Consultant Y issued a VO (later valued at a cost of \$28.2 million) to Contractor H for constructing a smaller size DO unit for serving SDB only, and two additional DO units adopting bio-trickling filter treatment with activated carbon filter technology for serving NSCSB and SSCSB. By carrying out the works under the VO, Consultant Y estimated that there would be a saving of about \$49.5 million for recurrent cost over the design life of 15 years.

3.10 Regarding consultation with key stakeholders on odour control measures and design changes of DO facilities during the construction stage of Contract H, in September 2019, DSD informed Audit that:

- (a) DSD had kept communicating with the nearby stakeholders and the public throughout project delivery (Note 42). Nearby stakeholders had been invited to visit SCISTW. Views and concerns were collected and addressed expeditiously. DSD had undertaken a prudent approach in respect of consultation; and
- (b) the DO design was progressively made more cost effective (see para. 3.9(b)).

3.11 In the light of DSD's experience gained in progressively making the DO design at SCISTW more cost effective (see para. 3.10(b)), Audit considers that DSD needs to draw on the experience gained in design changes of DO facilities at SCISTW to further improve the design of DO facilities for sewage treatment works in future.

Need to continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW

3.12 In 2014, DSD observed that based on the actual on-site measurements, the maximum H₂S concentration measured at some enclosed inlets (Note 43) of DO units within SCISTW exceeded the maximum design inlet H₂S concentration. To ensure no adverse air quality impact to the air sensitive receivers, in December 2014, DSD engaged Consultant Y to conduct an odour study (additional services under Consultancy Y) for enhancing the odour management at SCISTW. The study included

Note 42: *According to DSD, the work included, for example, that representatives from DSD had attended regularly the meetings of the Environmental and Hygiene Committee of the Sham Shui Po District Council to introduce HATS Stage 2A project and report the design and progress of DO enhancement works since January 2007, i.e. at the time of the EIA study.*

Note 43: *Inlet is the enclosed part of the odour emission facilities and located at the upstream of a DO unit. The foul air inside the inlet has not yet been treated by the DO unit.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

an odour review and monitoring to assess the odour strength at various locations within SCISTW and a review on the design of the existing DO facilities at SCISTW to identify enhancement measures for further odour abatement.

3.13 In July 2017, the odour study was completed (Note 44). Consultant Y found that:

- (a) certain odour sources (e.g. pumping stations and sedimentation tanks) at SCISTW had emitted high H₂S levels as compared to the specified design requirements of the DO facilities (Note 45). Some of the measured maximum H₂S concentration from inlets of DO units exceeded their design maximum values by about 2 to 13 times during the sampling period; and
- (b) based on the projection of the computer odour dispersion model using updated on-site measurements, the odour criterion (see para. 3.7) might be exceeded in future in the worst case scenario (Note 46). Further enhancement works to the existing DO facilities at SCISTW were therefore required to cater for the worst case scenario.

3.14 In August 2018, DSD approved to carry out further odour reduction measures at SCISTW (including enhancement works on 5 existing DO units constructed under Contracts E (2 units), G (1 unit), H (1 unit) and I (1 unit), and

Note 44: *The odour study had been suspended between September 2015 and June 2016 due to HATS Stage 2A commissioning works. The study was resumed in July 2016 and completed in July 2017.*

Note 45: *According to DSD, the reasons for the disparity between actual odour levels of odour sources at SCISTW and those in the original design were mainly due to the increasing trend of higher temperature (H₂S generation increased with temperature) caused by climate change (the number of very hot days per annum increased steadily in the past 10 years).*

Note 46: *Outlet is located at the downstream of a DO unit. The air there has been treated by the DO unit and will be released into the open air. The treated air is the determinant whether the odour intensity is acceptable or not. The worst case scenario referred to all outlets of DO units emitting peak H₂S concentration at the same time in summer under certain wind direction.*

construction of a new DO unit for rapid mixing chamber (Note 47) as recommended by the odour study) with a view to mitigating potential odour nuisance to the surrounding air sensitive receivers in future. According to DSD:

- (a) it had adjusted the operation of the DO facilities to increase the odour removal efficiency of the DO facilities. As a result, the odour intensity detected during the regular odour patrol at the site boundary of SCISTW (Note 48) remained non-detectable (86.5%), slight (13.4%) or moderate (0.1%) during the period from April 2016 to August 2019, indicating compliance with the odour criterion (see para. 3.7); and
- (b) further odour reduction measures were required in view of the fact that:
 - (i) despite satisfactory performance of the DO units and the acceptable odour intensity detected during the regular odour patrol (see item (a) above), the odour emission might still be excessive from these facilities in future as revealed from the computer odour dispersion model's worst case scenario; and
 - (ii) there were recently completed new housing developments in the vicinity of SCISTW (Note 49).

3.15 In November 2018, DSD engaged Consultant Y to provide assistance in implementing the enhancement measures for DO system at SCISTW (additional services under Consultancy Y), including design, tender documents preparation and contract supervision work. In March 2019, DSD invited tender for the enhancement of DO system at SCISTW (i.e. Contract K). In July 2019, DSD awarded Contract K to Contractor K at a contract sum of \$169 million. The works commenced in July 2019 and are scheduled for completion in May 2021.

Note 47: *Sewage is mixed with chemicals in rapid mixing chamber before entering the sedimentation tanks.*

Note 48: *According to DSD, regular odour patrol at the site boundary of SCISTW is conducted daily by staff of a laboratory accredited by the Hong Kong Laboratory Accreditation Scheme.*

Note 49: *According to DSD, Hoi Ying Estate and Hoi Lok Court (which are about 750 to 850 metres away from the edge of SCISTW) are examples of nearby housing developments completed recently.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

3.16 In September 2019, DSD informed Audit that:

- (a) odour issue was complicated due to its dynamic and transient nature. The case was further complicated due to the large volume of sewage from both sides of the harbour treated by SCISTW; and
- (b) DSD had adopted a pragmatic and incremental approach to tackle the odour issue by reviewing and monitoring the odour situation continuously. With the design changes and contract variations regarding DO facilities during construction stage and the adjusted operation of the DO facilities, the odour removal efficiency of the DO facilities was increased such that the odour intensity detected during the regular odour patrol remained acceptable (see para. 3.14(a)).

3.17 Audit noted that odour emission from SCISTW was the main environmental concern during the operation phase (see para. 3.6) and odour issue was complicated due to its dynamic and transient nature (see para. 3.16(a)). In Audit's view, DSD needs to continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW.

Audit recommendations

3.18 **Audit has *recommended* that the Director of Drainage Services should:**

- (a) **draw on the experience gained in design changes of DO facilities at SCISTW to further improve the design of DO facilities for sewage treatment works in future; and**
- (b) **continue to make efforts to monitor the odour situation and tackle the odour issue at SCISTW.**

Response from the Government

3.19 The Director of Drainage Services agrees with the audit recommendations.

Other contract management issues

3.20 Apart from the design and provision of DO facilities, Audit noted that there was scope for DSD to enhance contract management work in other areas (see paras. 3.21 to 3.27).

Scope for better assessing the ground conditions of existing structures before inviting tenders

3.21 The Dilution Water Pumping Station (DWPS — Note 50) is an underground reinforced concrete structure built under HATS Stage 1 to serve the CEPT process. According to Consultant Y:

- (a) DWPS was a key facility of SCISTW;
- (b) there was little provision in the DWPS design to accommodate excessive settlement/movement; and
- (c) excessive settlement/movement of DWPS would no doubt compromise the structural integrity of DWPS and damage the pipeworks causing interruptions to the existing SCISTW operation.

3.22 According to DSD:

- (a) at the design stage before the commencement of Contract F, a geotechnical design had been conducted to ascertain the existing soil nature/condition underlying SCISTW, including the location of DWPS, and assess the estimated settlement of the adjacent structures and utilities induced by the proposed excavation during construction. The geotechnical design was checked and approved by the Geotechnical Engineering Office of CEDD;

Note 50: *The function of DWPS is to draw effluent from CEPT tanks by gravity and to pump and inject the effluent into the polymer pipes for mixing and diluting the aqueous polymer for the sewage treatment process.*

Expansion and upgrading of Stonecutters Island Sewage Treatment Works

- (b) while DWPS was resting on reclaimed fill materials without any piling support and was thus prone to settlement/movement by construction works carried out in its vicinity, as assessed, the design report concluded that the induced settlement was considered acceptable and would not have any adverse effect on DWPS; and
- (c) monitoring instrumentation was installed under Contract F in accordance with the recommendation of the design report to assess and control the influence of the induced settlement.

3.23 During the construction stage of Contract F, DWPS had undergone more-than-expected settlement. To address the safety concern, Contractor F put in place mitigation measures to stabilise DWPS. In order to safeguard DWPS from further settlement and to provide long term stability and integrity of DWPS, Consultant Y issued a VO (later valued at a cost of \$9.5 million) to Contractor F for carrying out permanent stabilisation works for DWPS.

3.24 In Audit's view, in implementing a works project in future, DSD and its consultants need to take further measures to better assess the ground conditions of existing structures before inviting tenders with a view to further mitigating the impact of construction works causing settlement of such structures as far as practicable.

Scope for better ascertaining the presence of underground utilities and buried underground structures in the vicinity of the works sites

3.25 Under Contract G, Contractor G was required to complete the works for the Centrate Pipe Return System (Note 51). After the commencement of Contract G, DSD (involving different divisions, including the Sewage Treatment Division and the HATS Division) conducted a comprehensive review of the original design of the Centrate Pipe Return System and then modified the design so as to further enhance its functionality and performance with due regard to the site constraints and the

Note 51: *Centrate solution is generated from the discharges of sludge dewatering process at the sludge dewatering facilities (including SDB and the two sludge cake silo buildings) and from the overflow of Sludge Holding Tanks, and subsequently flows to the two MPSs through the Centrate Pipe Return System.*

evolving operation needs. Two VOs (later valued at a cost of \$3.9 million for one VO and \$0.3 million for the other) were issued for carrying out the works under the modified design (including the diversion of an existing water main to facilitate the construction works). According to DSD, notwithstanding that examination of all available site records for existing underground utilities and structures had been conducted at the design stage and site constraints had been considered when modifying the design of the system, during the excavation works, Contractor G encountered various uncharted underground utilities including cable ducts and other unforeseeable underground obstructions (e.g. sheet piles — Note 52) which caused delay to the progress of works. In the event, EOTs of 88 days were granted for completion of a section of works, leading to prolongation costs of \$16.4 million.

3.26 Environment, Transport and Works Bureau Technical Circular (Works) No. 17/2004 requires project officers to investigate the existence of underground structures and verify the validity of utility records in carrying out the design and in preparing the tender documents (see para. 2.22). In Audit's view, in implementing a works project in future, DSD and its consultants need to better ascertain the presence of underground utilities and buried underground structures in the vicinity of the works sites with a view to further enhancing the planning of the related works as far as practicable.

Audit recommendations

3.27 **Audit has *recommended* that, in implementing a works project in future, the Director of Drainage Services should:**

- (a) **take further measures to better assess the ground conditions of existing structures before inviting tenders with a view to further mitigating the impact of construction works causing settlement of such structures as far as practicable; and**
- (b) **better ascertain the presence of underground utilities and buried underground structures in the vicinity of the works sites with a view to**

Note 52: *According to DSD, the ownership of the concerned sheet piles could not be confirmed.*

further enhancing the planning of the related works as far as practicable.

Response from the Government

3.28 The Director of Drainage Services agrees with the audit recommendations. He has said that:

- (a) in future projects, any previous construction records, if exist, should be reviewed to better assess the ground conditions of existing structures at the design stage with a view to further mitigating the impact of construction works causing settlement of such structures as far as practicable; and
- (b) measures should be taken to maintain proper records of underground utilities and buried structures with a view to diminishing the chance of encountering uncharted objects during construction. In this connection, DSD is currently developing a system through the use of Building Information Modelling, Geographical Information System and Point Cloud techniques to strengthen the communication amongst parties concerned and the record-keeping of utilities and obsolete underground structures.

PART 4: UPGRADING OF PRELIMINARY TREATMENT WORKS

4.1 This PART examines DSD's work in managing contracts for the upgrading of PTWs, focusing on:

- (a) site access for upgrading works (paras. 4.4 to 4.10); and
- (b) cost increase of contract variations (paras. 4.11 to 4.17).

Upgrading of preliminary treatment works

4.2 Sewage is preliminarily treated at PTWs to remove large solids and grits to avoid deposition in the deep sewage tunnels and to protect downstream facilities from damage or blockage. The existing eight PTWs (see Photograph 4 for the Central PTW as an example) at the northern and south-western parts of Hong Kong Island were upgraded to cater for the technical requirements of HATS Stage 2A as well as future development and population growth of the respective districts.

Photograph 4

Central PTW



Source: DSD records

Upgrading of preliminary treatment works

4.3 Contracts L to N (with a total expenditure of \$1,546.2 million as of July 2019) were remeasurement contracts covering mainly the upgrading works for the eight PTWs (see Table 9). The upgrading works included, among others, construction of fine screens and grit traps (FSGT — Note 53), DO rooms, and modification of existing inlet pumping stations at the eight PTWs. Consultant Y was the Engineer responsible for supervising the contract works.

Table 9

**Upgrading works for PTWs under Contracts L to N
(July 2019)**

Contract	Works	Final contract sum/ up-to-date contract expenditure (Note) (\$ million)
L	Upgrading of three PTWs at North Point, Wan Chai East and Central	767.4
M	Upgrading of five PTWs at Sandy Bay, Cyberport, Wah Fu, Aberdeen and Ap Lei Chau	767.4
N	Demolition of CEPT tanks and associated facilities at the Cyberport Sewage Treatment Works	11.4
Total		1,546.2

Source: DSD records

Note: The account of Contract N was finalised in June 2018. As of July 2019, the accounts of Contracts L and M had not been finalised and the respective amounts were the up-to-date contract expenditures.

Note 53: According to DSD, FSGT remove screenings of over 4 millimetres and 95% of grits greater than 0.2 millimetres in size.

Site access for upgrading works

4.4 Certain upgrading works at PTWs under Contracts L and M had interface with the construction works of SCS under Contracts A to C. Audit noted that there were delays in handover of works sites and completed civil works between contractors (see paras. 4.5 to 4.9).

Delays in handover of works sites and completed civil works

4.5 Before carrying out the upgrading works at PTWs under Contracts L and M, certain portions of works sites or completed civil works were required to be handed over from contractors responsible for the construction works of SCS under Contracts A to C (i.e. from Contractor A to Contractor L, and from Contractors B and C to Contractor M). The late handover of works sites and completed civil works from Contractor A to Contractor L and the late handover of works sites from Contractors B and C to Contractor M (Note 54) consequentially resulted in significant EOTs and prolongation costs granted under Contracts L and M (see Tables 10 and 11).

Note 54: *The late handover of works sites and completed civil works was due to the fact that Contractors A, B and C encountered conditions affecting their works progress (e.g. inclement weather, unexpected high groundwater inflow during excavation, underground obstructions and adverse ground conditions) with EOTs granted for completing the construction works (see Notes 2 and 4 to Table 7 in para. 2.3, and para. 2.21).*

Table 10

**Late handover of works sites and completed civil works
from Contractor A to Contractor L**

Item	Incident of delay	Impact
1	Late handover of works sites from Contractor A to Contractor L (Note 1)	It caused delay to the progress of the construction of: (a) effluent pipes at the North Point PTW under a section of works of Contract L, resulting in EOTs of 196 days for completing this section of works and prolongation costs of \$28.4 million; and (b) twin seawater pumping mains at the North Point PTW under another section of works of Contract L, resulting in EOTs of 197 days for completing this section of works and prolongation costs of \$27.8 million.
2	Late handover of completed civil works (i.e. flume channels and drop shaft) from Contractor A to Contractor L (Note 2)	It caused delay to the progress of the installation of electrical and mechanical equipment in these completed civil works at the Wan Chai East PTW under another section of works of Contract L, resulting in EOTs of 496 days for completing this section of works. According to Consultant Y, no prolongation cost was granted as Contractor L had not provided detailed particulars to support its cost claim.

Source: Audit analysis of DSD records

Note 1: According to DSD, the late handover of works sites from Contractor A to Contractor L was partly due to inclement weather of 19.5 days under Contract A which did not attract prolongation costs.

Note 2: According to DSD, the late handover of completed civil works from Contractor A to Contractor L was partly due to inclement weather of 157 days under Contract A which did not attract prolongation costs.

Table 11

Late handover of works sites from Contractors B and C to Contractor M

Item	Incident of delay	Impact
1	Late handover of works sites from Contractor B to Contractor M	It caused delay to the progress of upgrading works at the Cyberport PTW under a section of works of Contract M, resulting in EOTs of 272 days for completing this section of works. According to Consultant Y, no prolongation cost was granted for this EOT.
2	Late handover of works sites from Contractor C to Contractor M (Note)	It caused delay to the progress of upgrading works at the Aberdeen PTW under a section of works of Contract M, resulting in EOTs of 542 days for completing this section of works and prolongation costs of \$56.4 million.

Source: Audit analysis of DSD records

Note: According to DSD, the late handover of works sites from Contractor C to Contractor M was partly due to inclement weather of 130 days under Contract C which did not attract prolongation costs.

4.6 In September and October 2019, DSD informed Audit that:

- (a) at the time of tender invitations for Contracts L and M, Consultant Y had reviewed the risks of delays in handover of works sites and completed civil works from Contractors A, B and C;
- (b) having regard to the works nature and the delay risks, time gaps had been allowed for between the handover dates from Contractor A and site possession dates by Contractor L (e.g. 22 days for the handover of the works sites and completed civil works mentioned in Table 10 in para. 4.5) and 90 days had been allowed in BQ of Contract M for delayed possession of works sites (see para. 4.7);
- (c) Consultant Y had taken appropriate and reasonable measures at the time of preparation of contract documents to reflect the anticipated delays in

Upgrading of preliminary treatment works

handover of works sites between contractors and to minimise the impacts arising from such delays; and

- (d) unexpected events still occurred causing the delays in handover.

4.7 In this connection, Audit noted that, in the tender documents of Contract M, tenderers were required to indicate in BQ the amount of compensation per day payable to the contractor for the first 90 days of delay after the specified site possession dates. Contractor M filled in “included” as the amount for this item (i.e. no compensation is payable for the first 90 days of delay in site possession), which became a BQ item in Contract M. However, in the tender documents of Contract L, there was no BQ item for delayed possession of works sites. According to Consultant Y, as delayed possession of works sites was not contemplated at the time of tendering of Contract L, no BQ item for delayed possession was provided separately in BQ. However, it transpired that there were delayed possession of works sites, resulting in prolongation costs granted to Contractor L (see para. 4.5).

4.8 In Audit’s view, in implementing a multi-contract works project in future, there is merit for DSD to take further measures (e.g. inclusion of a BQ item for delayed possession of works sites) as appropriate to better minimise the impact arising from delays in handover of works sites and completed civil works between the contractors.

Audit recommendation

4.9 Audit has *recommended* that, in implementing a multi-contract works project in future, the Director of Drainage Services should consider taking further measures (e.g. inclusion of a BQ item for delayed possession of works sites) as appropriate to better minimise the impact arising from delays in handover of works sites and completed civil works between the contractors.

Response from the Government

4.10 The Director of Drainage Services agrees with the audit recommendation.

Cost increase of contract variations

Need to notify appropriate higher-rank approving officer of the reasons for cost increase of contract variations as appropriate

4.11 According to DSD requirements, for a proposed VO with an estimated cost of \$0.3 million or below, the Engineer for the contract (i.e. Consultant Y) was the approving authority. For those with an estimated cost exceeding \$0.3 million, Consultant Y was required to provide an estimate of cost for the proposed VO and obtain prior approval from DSD (approving authority based on the estimated cost for the proposed VO) before issuing a VO to contractors for ordering any variations to works.

4.12 According to DSD's Technical Circular No. 5/2015 of October 2015 on "Approval and Related Authorities for Variations and Claims under Works Contracts" (and the circular prevailing at the time from January 2003 to September 2015 — Note 55), if after a proposed variation has been approved by an approving officer, it is anticipated that the estimated net value of the proposed variation will for reasons other than change in scope (such as underestimation, remeasurement, contract price fluctuations and so forth) increase to the extent of exceeding the approval limit of that approving officer, then the appropriate higher-rank approving officer shall be notified (via the original approving officer) with explanations of such increase as soon as it is known.

4.13 As far as could be ascertained, for 5 VOs (VOs A to E) under Contract L, the up-to-date costs as of July 2019 exceeded the estimated costs by 130% to 969% (see Table 12).

Note 55: *Technical Circular No. 5/2015 replaced Technical Circular No. 2/2003 of January 2003 which had set out a similar requirement (i.e. if due to whatever reason the cost of a variation exceeds its estimate made at the time approval was given and the value of this variation turns out to be in excess of the limit of the officer who gave the approval, the project engineer should as soon as the deviation is known notify the appropriate approving officer through the original approving officer the reason for the increase in estimate).*

Table 12

Five VOs issued under Contract L with significant cost increase

VO	Works	Estimated cost per VO (Note 1) (a) (\$)	Up-to-date cost as of July 2019 (Note 2) (b) (\$)	Cost increase (c) = (b) – (a) (\$)
A	Revisions to pile cap and structural layout of FSGT building at Central PTW	286,000	933,599	647,599 (226%)
B	Amendments to boundary wall alignment and associated road works at Wan Chai East PTW	139,000	850,000	711,000 (512%)
C	Revision to pile cap of FSGT building at North Point PTW	153,000	651,586	498,586 (326%)
D	Amendments to boundary wall alignment and landscaping layout at North Point PTW	281,000	647,667	366,667 (130%)
E	Modification of existing outfall chamber at North Point PTW	52,000	556,130	504,130 (969%)

Source: Audit analysis of DSD records

Note 1: VOs A to E with an estimated cost of less than \$0.3 million each were issued within the financial authority of Consultant Y (i.e. no prior approval from DSD was required before issuance).

Note 2: The amounts shown in this column were the up-to-date costs of VOs per the latest interim payment certificate and would be adjusted as necessary in the final account of Contract L.

4.14 Audit noted that the up-to-date costs for VOs A to E exceeded the financial authority (i.e. \$0.3 million) of Consultant Y. However, DSD had no documentation showing that the appropriate higher-rank approving officer (i.e. a Senior Engineer of

DSD — Note 56) had been notified of reasons for the cost increase of the 5 VOs. Audit considers that the appropriate DSD officer should have been notified of reasons for such cost increase in accordance with the requirements in the Technical Circular (see para. 4.12). In October 2019, DSD informed Audit that the appropriate higher-rank approving officer would be notified as necessary in accordance with the requirements in the Technical Circular.

4.15 In Audit's view, in implementing a works project in future, DSD and its consultants need to comply with the requirements in DSD's Technical Circular No. 5/2015 relating to notifying the appropriate higher-rank approving officer with explanations of cost increase of contract variations.

Audit recommendation

4.16 Audit has *recommended* that, in implementing a works project in future, the Director of Drainage Services should take measures to ensure compliance with the requirements in DSD's Technical Circular No. 5/2015 relating to notifying the appropriate higher-rank approving officer with explanations of cost increase of contract variations.

Response from the Government

4.17 The Director of Drainage Services agrees with the audit recommendation. He has said that the appropriate higher-rank approving officer should be notified once the explanations of cost increase of contract variations have come to light.

Note 56: *The approving authority for a proposed VO is determined based on the estimated cost for the VO as follows:*

<i>Estimated cost for proposed VO</i>	<i>Approving authority</i>
<i>\$0.3 million or below</i>	<i>Engineer for the contract</i>
<i>Exceeding \$0.3 million and up to \$1.4 million</i>	<i>Senior Engineer or equivalent or above</i>
<i>Up to \$7 million</i>	<i>Chief Engineer or above</i>
<i>More than \$7 million</i>	<i>Director</i>

**Water quality of the harbour after commissioning of
Harbour Area Treatment Scheme Stage 2A**

1. According to the paper seeking funding approval for Project E from FC in February 2010, HATS Stage 2A, when completed, would provide benefits to the water quality of the harbour further to those achieved in HATS Stage 1, as follows:

- (a) reduce levels of *Escherichia coli* (Note 1) by 90% (as disinfection facilities were provided under HATS Stage 2A but not Stage 1);
- (b) reduce toxic ammonia (Note 2) by 10% on average;
- (c) reduce nutrients in terms of total inorganic nitrogen and phosphorus (Note 3) by 5% and 8% respectively; and
- (d) increase dissolved oxygen (Note 4) levels by 5%.

2. In September 2019, EPD informed Audit that:

- (a) the predicted water quality benefits on the five parameters mentioned in paragraph 1 above were based on best available mathematical modelling tools and techniques. In other words, because of limitations of modelling accuracy, fluctuations in water quality due to weather conditions and climate change, and other external factors like background pollution loading from Pearl River Delta, the numerical value of each of these parameters measured in the years after commissioning of HATS Stage 2A was expected to be spreading over a range above and below the predicted value;
- (b) a more statistically robust conclusion of whether HATS Stage 2A achieved the predicted water quality benefits had to be based on serious statistical analysis on the individual parameters measured for sufficient periods of years before and after its commissioning. EPD had issued reports on annual monitoring results of the water quality of the harbour which gave some early indications of the water quality improvement in the initial years after commissioning;

Appendix A
(Cont'd)
(para. 1.11(d) refers)

- (c) the immediate improvements in water quality during the first three years of full commissioning of HATS Stage 2A (Note 5) were as follows:
 - (i) *Escherichia coli* reduced by 85 % (prediction per FC paper: 90 %);
 - (ii) toxic ammonia reduced by 27 % (prediction per FC paper: 10 %);
 - (iii) nutrients in terms of total inorganic nitrogen and phosphorus reduced by 1.3 % and 22 % respectively (predictions per FC paper: 5 % and 8 % respectively); and
 - (iv) dissolved oxygen increased by 2.7 % (prediction per FC paper: 5 %); and
- (d) as part of its core business, EPD had been actively reviewing the water quality of the harbour and would continue its regular water quality monitoring.

Source: EPD records

Note 1: Escherichia coli is a kind of bacteria found in human faeces, often used as an indicator of sewage pollution. The level of Escherichia coli is a measure of the sewage bacteria in water. A high Escherichia coli count indicates greater faecal contamination and higher health risk. A decrease in Escherichia coli count represents an improvement in water quality.

Note 2: Ammonia is found at quite high levels in sewage. A high concentration of ammonia is toxic to marine life. An increase in ammonia represents a deterioration in water quality whereas a decrease represents an improvement.

Note 3: Total inorganic nitrogen and phosphorus measure the amount of nutrients in water. A large amount of total inorganic nitrogen or phosphorus may stimulate excess algal growth in water. An increase in total inorganic nitrogen or phosphorus represents a deterioration in water quality whereas a decrease represents an improvement.

Note 4: Dissolved oxygen indicates the total amount of oxygen dissolved in water. Most marine organisms need oxygen for respiration and maintenance of life. An increase in dissolved oxygen represents an improvement in water quality whereas a decrease represents a deterioration.

Note 5: The immediate improvements in water quality were based on a direct comparison of the averages of monthly water quality data for the five parameters collected at 10 water quality monitoring stations in the harbour between the post-HATS Stage 1 period (i.e. 2002 to 2015 for four parameters and 2002 to 2009 for the parameter of Escherichia coli as the advance disinfection facilities under HATS Stage 2A were commissioned in 2010 (see Note 9 to para. 1.5(b))) and the short post-HATS Stage 2A period (i.e. 2016 to 2018).

**Scope for better ascertaining the presence of
government structures in the vicinity of the works sites
under Contracts I, L and M**

1. Audit examination revealed that there was scope for better ascertaining the presence of government structures in the vicinity of the works sites under Contracts I, L and M before inviting the tenders, as follows:

Contract I

1. During the excavation works under Contract I in December 2011, Contractor I encountered difficulties in dealing with the rock fill which caused delay to the progress of works. According to DSD:

- (a) at the design stage, Consultant Y duly investigated the underground site conditions by reviewing various records (including as-built drawings, existing ground investigation reports, drillhole records, field measurement records, field test records and laboratory test records) obtained from DSD, CEDD and in-house database of Consultant Y. A borehole log located adjacent to the works site (i.e. riser shaft) showed that there were highly decomposed rock fragments, occasional concrete fragments and refuse. From these records, no buried structure or presence of rock fill at the works site was identified;
- (b) the pre-drilling works carried out by Contractor I in September and October 2011 also did not reveal the presence of rock fill; and
- (c) after Contractor I encountered the rock fill during the excavation works, DSD and Consultant Y conducted further searches and found in 2014 that the rock fill in question was a part of an underground seawall structure constructed under a government contract in the 1980s.

2. In the event, Consultant Y issued a variation order (later valued at a cost of \$35 million) to Contractor I for carrying out additional works to remove part of the underground seawall structure which obstructed the excavation works, resulting in EOTs of 76 days for completing two sections of works and prolongation costs of \$17.6 million.

Contract L

1. Contractor L was required to construct twin seawater pumping mains from the seawater pumping station to the fine screens and grit traps building at the North Point PTW under a section of works of Contract L. According to DSD and Consultant Y:

- (a) in accordance with the arrangement agreed at the design stage, Consultant X was responsible for the design of the twin seawater pumping mains which would be constructed by Contractor L under Contract L. The as-built drawings concerned had been checked at the design stage and no buried structure was identified;
- (b) due to clashing with the actual site location of underground pile cap of the pier of an existing flyover completed in January 1985 and maintained by the Highways Department, the alignment of the twin seawater pumping mains was revised; and
- (c) during the excavation works for the construction of the realigned twin seawater pumping mains, Contractor L encountered underground obstruction (concrete thrust block of two existing sewage mains completed in December 2008 and maintained by DSD) which caused delay to the progress of works.

2. In the event, Consultant Y issued a variation order to Contractor L for carrying out additional works to change the pipe alignment to suit the site constraints, resulting in EOTs of 48.5 days for completing this section of works and prolongation costs of \$6.6 million.

Contract M

1. Contractor M was required to construct flume channels at the Cyberport PTW under a section of works of Contract M. During the construction of the flume channels, Contractor M encountered underground obstruction (concrete cable encasement) which caused delay to the progress of works. According to DSD and Consultant Y:

- (a) in accordance with the arrangement agreed at the design stage, Consultant X was responsible for the design of the flume channels which would be constructed by Contractor M under Contract M. The as-built drawings concerned had been checked at the design stage and no buried structure was identified;
- (b) there were no indications given in the design drawings provided by Consultant X that any existing services, such as power cables, communication cables or water mains, would be directly in conflict with the flume channels and would obstruct the construction of the flume channels; and
- (c) after investigation, Contractor M found that power and communication cables in use linking to the CEPT facility of the Cyberport Sewage Treatment Works (which was completed in 2002, and operated and maintained by the Sewage Treatment Division of DSD) were in the concrete encasement.

2. In the event, Consultant Y issued a variation order to Contractor M for carrying out additional works to remove the concrete encasement and live cables which obstructed the construction works, resulting in EOTs of 214 days for completing this section of works and prolongation costs of \$26.6 million.

2. According to DSD, the above issues were due to some as-built drawings in the past not having adequately recorded the as-built situation of government structures. As the Government is promoting a comprehensive use of Building Information Modelling, the as-built details of government structures would be more accurately shown in the Building Information Modelling records for future reference.

3. In Audit's view, in implementing a works project in future, DSD and its consultants need to better ascertain the presence of government structures in the vicinity of the works sites before inviting tenders (see also para. 2.23).

Acronyms and abbreviations

APE	Approved project estimate
Audit	Audit Commission
BQ	Bills of Quantities
CEDD	Civil Engineering and Development Department
CEPT	Chemically-enhanced primary treatment
DO	Deodourisation
DSD	Drainage Services Department
DWPS	Dilution Water Pumping Station
EIA	Environmental impact assessment
EIAO	Environmental Impact Assessment Ordinance
ENB	Environment Bureau
EOT	Extension of time
EPD	Environmental Protection Department
FC	Finance Committee
FSGT	Fine screens and grit traps
HATS	Harbour Area Treatment Scheme
HDD	Horizontal Directional Drilling
H ₂ S	Hydrogen sulphide
km	Kilometre
m ³	Cubic metres
MPS	Main Pumping Station
NSCSB	Northern Sludge Cake Silo Building
OU	Odour units
PTW	Preliminary treatment works
SCISTW	Stonecutters Island Sewage Treatment Works
SCS	Sewage conveyance system
SDB	Sludge Dewatering Building
SSCSB	Southern Sludge Cake Silo Building
VO	Variation order

CHAPTER 10

**Labour and Welfare Bureau
Social Welfare Department**

Child Development Fund

**Audit Commission
Hong Kong
28 October 2019**

This audit review was carried out under a set of guidelines tabled in the Provisional Legislative Council by the Chairman of the Public Accounts Committee on 11 February 1998. The guidelines were agreed between the Public Accounts Committee and the Director of Audit and accepted by the Government of the Hong Kong Special Administrative Region.

Report No. 73 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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CHILD DEVELOPMENT FUND

Contents

	Paragraph
EXECUTIVE SUMMARY	
PART 1: INTRODUCTION	1.1 – 1.14
Audit review	1.15 – 1.16
General response from the Government	1.17
Acknowledgement	1.18
PART 2: PLANNING THE LAUNCH OF PROJECTS AND COMMISSIONING PROJECT OPERATORS	2.1
Planning the launch of projects	2.2 – 2.16
Audit recommendations	2.17
Response from the Government	2.18
Commissioning project operators	2.19 – 2.32
Audit recommendations	2.33
Response from the Government	2.34
PART 3: IMPLEMENTATION OF PROJECTS	3.1
Practices in project delivery	3.2 – 3.21
Audit recommendations	3.22
Response from the Government	3.23

	Paragraph
Financial monitoring of projects	3.24 – 3.32
Audit recommendations	3.33
Response from the Government	3.34
Attainment of intended outputs and outcomes	3.35 – 3.41
Audit recommendations	3.42
Response from the Government	3.43
PART 4: GOVERNANCE AND OTHER ADMINISTRATIVE MATTERS	4.1
Governance issues	4.2 – 4.11
Audit recommendations	4.12
Response from the Government	4.13
Publicity and other supporting activities	4.14 – 4.26
Audit recommendations	4.27
Response from the Government	4.28
Way forward	4.29 – 4.34
Audit recommendation	4.35
Response from the Government	4.36

Appendices	Page
A : Labour and Welfare Bureau: Organisation chart (extract) (31 March 2019)	73
B : Social Welfare Department: Organisation chart (extract) (31 March 2019)	74
C : Output indicators and standards (for Child Development Fund projects launched in or after 2015)	75
D : Mandatory requirements for Child Development Fund project applications	76 – 77
E : Factors considered in quality assessment of Child Development Fund project applications	78 – 79
F : Child Development Fund projects and participants by districts (30 June 2019)	80
G : Acronyms and abbreviations	81

CHILD DEVELOPMENT FUND

Executive Summary

1. In April 2008, the Government set up the Child Development Fund (CDF) with an initial allocation of \$300 million. CDF seeks to: (a) support the longer-term development of children from a disadvantaged background; (b) encourage these children to plan for the future and cultivate positive attitudes; (c) provide them with more personal development opportunities; and (d) help them formulate and implement personal development plans (PDPs), develop an asset-building habit, and accumulate financial as well as non-financial assets. In 2015, the Government increased the financial commitment on CDF by \$300 million. In 2018, the financial commitment on CDF was further increased by \$300 million. The Government expected that, with a total financial commitment of \$900 million, CDF would benefit some 30,000 children. Non-governmental organisations (NGOs) and schools can apply for funding to operate CDF projects. Children participating in projects are those aged between 10 and 16 (or studying at Primary 4 to Secondary 4), coming from a disadvantaged background, and not having participated in CDF projects before. Each project lasts for 3 years. One of the key components of CDF projects is the targeted savings (TS) programme, under which each participant is required to set a savings target and accumulate savings for realising his/her PDP. Project operators are provided with funding provisions on a per-participant basis.

2. The management of CDF involves different parties, namely: (a) Labour and Welfare Bureau (LWB) which is the policy bureau for CDF; (b) Steering Committee on CDF (SCCDF) which steers the design, and oversees and monitors the implementation of CDF; (c) Vetting Committee which assesses the quality aspects of applications for CDF projects; and (d) Social Welfare Department (SWD) which assists LWB in the day-to-day administration and monitoring of projects. As at 30 June 2019, 193 projects had been launched and 18,140 children had participated in the projects. The Audit Commission (Audit) has recently conducted a review on CDF.

Planning the launch of projects and commissioning project operators

3. *Planning the launch of projects.* According to the information provided to the Legislative Council (LegCo) by LWB in 2008 and 2009, it was envisaged that at least 13,600 children (i.e. participants) would benefit from the first financial commitment of \$300 million created for CDF, and that CDF would be fully implemented by batches in 3 to 5 years (para. 2.5). Audit noted the following issues:

- (a) *Need to provide LegCo with updated information on CDF.* In 2017, the accumulated number of participants in CDF reached 14,796. The envisaged number of 13,600 participants was therefore attained. Meanwhile, 8 years had elapsed since the first batch of CDF projects was launched in 2009. This did not appear to tally with the envisaged time frame of fully implementing CDF in 3 to 5 years. In September 2019, LWB and SWD informed Audit that (paras. 2.6 and 2.7):
 - (i) the time frame which LegCo was informed of (i.e. fully implementing CDF by batches in 3 to 5 years) was only a very rough estimate. The schedule for launching subsequent batches of CDF projects was subsequently adjusted (para. 2.7(a) and (b)); and
 - (ii) the funding provision for each CDF participant was adjusted upwards in 2014 and 2016. The original estimated number of 13,600 participants would become smaller in light of the increase in per-head provision for each CDF participant. To simplify the presentation in the papers submitted to LegCo when seeking increases in the financial commitment in 2015 and 2018, LWB did not mention the latest estimate of the total number of participants in relation to the first funding allocation (para. 2.7(c) and (e)).

According to a speech given at a ceremony celebrating CDF 10th anniversary in March 2019, the estimated total number of participants (i.e. funded by the financial commitment of \$900 million) was updated to 30,000. However, LegCo was not separately informed of this updated number. CDF projects had yet to be launched for many (11,860 or 30,000 less 18,140 (see para. 2)) children and LWB needs to keep in view any need for expediting the launch of future CDF projects. In Audit's view, there is also scope for improving public accountability in the launch of CDF

Executive Summary

projects by providing updated information to LegCo (paras. 2.7 to 2.9, 2.11 and 2.12); and

- (b) ***Need for launching NGO-run projects regularly.*** In April 2013, LWB informed LegCo Members of its annual target for launching new projects (i.e. 20 new projects for 2,000 to 2,300 new participants). Audit noted that in the 7 years from 2013 to 2019, for 2 years (i.e. 2013 and 2016), no NGO-run projects were launched. The lapse of time between the launch of a batch of NGO-run projects and the launch of an ensuing batch varied, ranging from 18 to 21 months. On the other hand, arrangements had been made for launching school-based projects every year since 2014. In August and September 2019, LWB and SWD informed Audit that a timetable had been drawn up for regularly launching future NGO-run and school-based projects (paras. 2.13 and 2.14).

4. ***Commissioning project operators.*** NGO-run projects and school-based projects are launched in different batches. For each batch, LWB sets a target of the number of projects to be launched. For NGO-run projects, SWD divides the target number among different districts. The number so allocated to a district serves as its quota. Applications for projects were required to meet basic requirements (referred to as “mandatory requirements” by SWD) and to undergo a quality assessment (para. 2.19). Audit noted the following issues:

- (a) ***Applications exceeding quotas for some districts.*** For CDF projects launched in the period from April 2009 to June 2019, a considerable proportion of applications (35% or 62 applications) for NGO-run projects were unsuccessful (i.e. not resulting in the award of projects). Of the 62 unsuccessful applications, 51 had met the mandatory requirements and passed the quality assessment but were not awarded projects, because the district quotas had been reached or exceeded. In contrast, for 2 districts (each involving the launch of one batch of NGO-run projects in the period), no applications were submitted for NGO-run projects, and the quotas concerned were therefore not used (paras. 2.21, 2.22 and 2.24);
- (b) ***Need to improve setting of district quotas.*** SWD records showed that district quotas for NGO-run projects were set based on 2 parameters, namely, the number of children (aged 10 to 16) living on Comprehensive Social Security Assistance (CSSA) over the territory, and the number of projects operated in previous batches in the districts. Audit noted that this

Executive Summary

methodology did not take into account the number of other children who, while not living on CSSA, were having a disadvantaged background and eligible to join CDF projects (e.g. those whose household income was less than 75% of the median monthly domestic household income). Audit further noted that the number of such other children would be considerable (i.e. in the order of 150,000) (paras. 2.25 and 2.26); and

- (c) ***Need to improve quality assessment of school-based project applications.*** For school-based projects, no passing marks were set for the quality assessment. In contrast, a passing mark of 50% had been adopted for the quality assessment of NGO-run projects (para. 2.29).

Implementation of projects

5. ***Practices in project delivery.*** In June and July 2019, Audit visited 5 project operators to examine their project delivery. A total of 10 completed projects were examined (para. 3.2). Audit noted the following issues:

- (a) ***Need to ensure compliance with requirements in service agreements.*** A service agreement is signed between SWD and the operator for each CDF project, stipulating the scope of service and funding conditions. In the 10 projects examined, Audit noted 6 incidents of non-compliance with requirements on insurance and procurement. While SWD had conducted site visits to the operators concerned, for 4 of the 6 incidents, SWD did not identify the non-compliance during the site visits (paras. 3.3 to 3.5);
- (b) ***Need to ensure effective use of training provisions.*** Training provisions are granted to operators on a per-participant basis. Audit analysed 50 training programmes which were conducted with training provisions, and found a wide variation in programme types (e.g. lunch/dinner events and overseas tours) and in programme costs (ranging from \$28 to \$6,773 per person). In September 2019, SWD informed Audit that for projects launched from 2018 onwards, it was set out that operators were required to use 60% of training provisions for participants directly. However, Audit noted that no SWD guidelines had been issued setting out other principles of using training provisions (e.g. on the types and costs of programmes) (paras. 3.7 to 3.10); and

Executive Summary

(c) ***Need to disseminate good practices on monitoring participants' use of TS.***

For the 10 projects examined, Audit analysed operators' practices on monitoring participants' use of TS. Of the 5 operators involved, 4 had adopted control measures on making purchases with TS (i.e. requirements on the number of quotations were imposed, ceilings were set on the purchase of certain goods/services, and/or participants were required to submit applications to the operator for using TS before making the purchases). The fact that one operator had not adopted any such control measures was less than satisfactory (paras. 3.13 and 3.14).

6. ***Financial monitoring of projects.*** Operators are required to submit audited financial reports on CDF projects. The due dates of submission are set out in service agreements (para. 3.24). Audit noted the following issues:

(a) ***Need to ensure timely submission of reports.***

Audit analysed the timeliness of submission of audited financial reports for 83 completed CDF projects. As at 31 July 2019, of the 295 reports required to be submitted, 247 (84%) reports had been overdue, with delays ranging from 1 to 1,092 days (averaging 229 days). For the 10 projects examined (see para. 5), SWD had not taken adequate follow-up actions on delay cases (e.g. of the 30 delayed submissions in these 10 projects, written reminders were not issued in 24 (80%) cases). Delays in the submission of audited financial reports would hamper SWD's financial monitoring of CDF projects (paras. 3.25, 3.26 and 3.28); and

(b) ***Need to ensure timely clawing back of surplus funds.***

For the 10 projects examined, audited financial reports indicated surplus funds in 6 projects. Audit noted that these surplus funds had not been clawed back promptly, and that considerable time (e.g. 956 days for a project) had been taken to complete the review of the audited financial reports. As at 31 July 2019, of the 6 projects, only 2 projects had the surplus funds clawed back (para. 3.31).

7. ***Attainment of intended outputs and outcomes.*** For each CDF project, the service agreement stipulates the output and outcome indicators, as well as the standards agreed for each indicator. Operators report to SWD the progress of meeting these standards through the submission of statistical returns (para. 3.35). Audit noted the following issues:

Executive Summary

- (a) ***Need to improve attainment of intended outputs and outcomes.*** For the 83 completed projects (see para. 6(a)), there were 10 or 11 indicators stipulated in their service agreements totalling 895 indicators in aggregate. Audit noted that, of the 895 indicators, the agreed standards had not been attained for 136 (15%) indicators (para. 3.36); and
- (b) ***Need for adequate remedial actions.*** According to SWD's internal guideline, for projects which do not attain the output standards and/or outcome standards, follow-up actions will be taken (e.g. operators are required to work out an improvement plan). Audit examined the 3 projects which had attained less than half of the standards. Audit noted that follow-up actions of SWD were less than satisfactory (paras. 3.39 and 3.40).

Governance and other administrative matters

8. ***Governance issues.*** SCCDF and the Vetting Committee are the two committees set up for CDF (para. 4.2). Audit noted the following issues:

- (a) ***Need to keep SCCDF informed of progress of CDF projects.*** For the monitoring of CDF, a range of information (e.g. statistics on output and outcome indicators) was provided to SCCDF. Audit noted that, over the years, less information was provided to SCCDF as more batches of projects were implemented. In September and October 2019, LWB explained that as more batches of projects were implemented, the focus of materials presented to SCCDF had changed to, for example, reporting key changes of CDF. In Audit's view, there is a need to ensure that the materials and information presented can keep up with any changes in SCCDF's information need (paras. 4.3 to 4.6); and
- (b) ***Room for improving practices on declaration of interests.*** LWB and SWD have laid down guidelines on handling conflicts of interest. Audit noted one case where an SCCDF member's declaration of interests had not been recorded in the minutes of meeting as required. Moreover, records did not show that LWB had reviewed, from time to time, SCCDF's system for declaration of interests having regard to the memorandum issued by the Secretary for Home Affairs in 2005. By the memorandum, bureaux and departments are reminded to review from time to time the system for

Executive Summary

declaration of interests for advisory and statutory bodies under their purview (paras. 4.7 to 4.10).

9. ***Publicity and other supporting activities.*** In support of CDF, a range of activities are conducted, including general publicity activities for raising the community's awareness of CDF, targeted promotion for engaging stakeholders and partners, and value-added activities for widening participants' horizons (para. 4.14). Audit noted the following issues:

- (a) ***Need to step up promotion efforts.*** In a consultancy study completed in March 2017, a recommendation was to step up publicity and promotion efforts to increase the awareness of CDF projects in schools and among school teachers. In March 2017, SCCDF was informed that follow-up actions would be taken on the recommendation (e.g. LWB and SWD would explore opportunities to reach out to teachers and principals via related bodies such as associations of teachers, and experience sharing sessions would be arranged). Audit noted that, as at 15 August 2019, about 17 months had elapsed since a sharing/collaboration session was last held in February 2018. Moreover, teachers and principals had not been reached out via related bodies as intended (paras. 4.15, 4.16 and 4.18); and
- (b) ***Need to sustain efforts in arranging value-added activities.*** In 2015, LWB informed the LegCo Panel on Welfare Services that it would step up efforts in arranging value-added activities. Audit noted that, from 2014 to 2018, the total number of value-added activities had dropped from its peak of 38 in 2016, by 18% to 31 in 2018, and that the total number of participants in the activities had also dropped from its peak of 2,602 in 2017, by 24% to 1,973 in 2018 (paras. 4.24 and 4.25).

10. ***Way forward.*** Set up in 2008 and having a total financial commitment of \$900 million, CDF is expected to benefit 30,000 underprivileged children under its projects. As at 30 June 2019, CDF had only launched projects for some 18,000 children. In 2017, a "Further Study on the Long Term Development of CDF Project Participants" ("Further Study") was commissioned. In October 2019, the study was still in progress. In Audit's view, taking into account the experience gained over the years in implementing CDF projects, it is worth re-examining by the Government some parameters of CDF (e.g. intended number of participants, time frame for launching projects, and output and outcome standards). LWB needs to keep

Executive Summary

in view the results of the Further Study, and consider the way forward for CDF (paras. 4.29, 4.31, 4.33 and 4.34).

Audit recommendations

11. Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has *recommended* that the Secretary for Labour and Welfare should:

- (a) keep LegCo updated on relevant information about the implementation progress of CDF (para. 2.17(a));
- (b) keep in view any need for expediting the launch of future CDF projects (para. 2.17(b));
- (c) take measures to launch new batches of NGO-run projects regularly in accordance with the timetable drawn up (para. 2.17(c));
- (d) keep SCCDF appropriately informed of the progress of CDF projects (para. 4.12(a));
- (e) record declaration of interests made by committee members in minutes of meetings (para. 4.12(b));
- (f) review, having regard to the memorandum issued by the Secretary for Home Affairs in 2005, the system for declaration of interests for SCCDF as necessary (para. 4.12(c));
- (g) take measures to step up efforts in promoting CDF among NGOs and schools (para. 4.27(a));
- (h) take measures to sustain the efforts in arranging value-added activities for CDF participants (para. 4.27(b)); and
- (i) keep in view the results of the Further Study which is currently in progress, and consider the way forward for CDF taking into account other relevant factors, including the results of this audit review (para. 4.35).

Executive Summary

12. **Audit has *recommended* that the Director of Social Welfare should:**
- (a) in setting district quotas for CDF projects, adequately take into account relevant factors (para. 2.33(a));**
 - (b) in consultation with the Vetting Committee, consider setting a passing mark for the quality assessment of school-based projects (para. 2.33(b));**
 - (c) step up efforts in ensuring project operators' compliance with requirements in the service agreements during project delivery (para. 3.22(a));**
 - (d) consider issuing guidelines to set out the principles of using training provisions (para. 3.22(b));**
 - (e) consider disseminating good practices on the use of TS for wider adoption among operators (para. 3.22(c));**
 - (f) closely monitor any delays in the submission of audited financial reports, and take adequate follow-up actions on delay cases (para. 3.33(a));**
 - (g) take measures to expedite the clawing back of surplus funds (para. 3.33(b)); and**
 - (h) closely monitor the attainment of output and outcome standards of projects, and ensure that adequate remedial actions are taken on projects which fail to meet the standards (para. 3.42(a) and (b)).**

Response from the Government

13. The Secretary for Labour and Welfare and the Director of Social Welfare agree with the audit recommendations.

PART 1: INTRODUCTION

1.1 This PART describes the background to the audit and outlines the audit objectives and scope.

Background

1.2 The Government attaches great importance to the poverty issue and poverty alleviation work in Hong Kong. In 2005, the Government established an advisory committee (i.e. the former Commission on Poverty — Note 1) with a view to addressing poverty problems. A recommendation made by the committee in 2006 was to set up a Child Development Fund (CDF).

1.3 In April 2008, the Government set up CDF with an initial allocation of \$300 million (Note 2). CDF seeks to:

- (a) support the longer-term development of children from a disadvantaged background;
- (b) encourage these children to plan for the future and cultivate positive attitudes;
- (c) provide them with more personal development opportunities; and

Note 1: *The Commission was chaired by the Financial Secretary. Other members included legislators, businessmen, community leaders, representatives from non-governmental organisations and academics. The Commission was dissolved in 2007 after submitting a report with recommendations on supporting the underprivileged. In 2012, the Government re-established the Commission on Poverty.*

Note 2: *In February 2007, the Financial Secretary announced in the 2007-08 Budget Speech that the Government would earmark \$300 million to set up CDF. In April 2008, upon the approval of the Finance Committee of the Legislative Council, a new commitment of \$300 million was created for the establishment of CDF as a non-recurrent expenditure item of the Labour and Welfare Bureau under the General Revenue Account.*

Introduction

- (d) help them formulate and implement personal development plans (PDPs), develop an asset-building habit, and accumulate financial as well as non-financial assets.

1.4 In 2015, in its Estimates of Expenditure, the Government increased the financial commitment on CDF by \$300 million. In 2018, the financial commitment on CDF in the Estimates of Expenditure was further increased by \$300 million. The increases in commitment were to ensure the sustainable development of the fund. The Government expected that, with a total financial commitment of \$900 million, CDF would benefit some 30,000 underprivileged children through its projects (see para. 1.5).

CDF projects

1.5 Non-governmental organisations (NGOs) and schools (primary, secondary and special schools) can apply for CDF funding to operate CDF projects with the following characteristics:

- (a) ***Objectives and target participants.*** CDF projects aim at promoting the longer-term development of children and encouraging them to develop an asset-building habit, thereby reducing inter-generational poverty. Children participating in CDF projects are those aged between 10 and 16 (or studying at Primary 4 to Secondary 4), coming from a disadvantaged background (Note 3), and not having participated in CDF projects before;
- (b) ***Project duration and salient features.*** Each project lasts for 3 years and comprises the following 3 key components:

Note 3: *A participant is regarded as having a disadvantaged background if:*

- (a) *his/her family is receiving financial assistance including Comprehensive Social Security Assistance administered by the Social Welfare Department, Working Family Allowance administered by the Working Family Allowance Office, or full grants from student finance schemes administered by the Student Finance Office; or*
- (b) *his/her household income is less than 75% of the median monthly domestic household income compiled by the Census and Statistics Department.*

- (i) **PDPs.** PDPs enable participants to identify their own long-term visions and motivate them to take steps for pursuing targets that are achievable in the short-run:
- in the first 2 years of a project, guidance is provided to help each participant draw up his/her PDP;
 - the plan should include both short-term and long-term development goals, with specific action steps to achieve them. The development goals should support capacity enhancement, developing knowledge or skills around a particular hobby/interest, or laying the foundation for further education or future careers; and
 - in the third year of the project, a participant can make use of the targeted savings (TS — see (iii) below) to implement his/her PDP (Note 4). The project operator (i.e. an NGO or a school) will monitor the progress of implementation;
- (ii) **Mentorship.** For each participant, the project operator arranges a volunteer mentor for the three-year programme. The mentor provides companionship and guidance on various matters (e.g. helping draw up a PDP, offering career inspirations, and assisting in building up self-esteem and resilience). The mentor keeps in contact with his/her mentee at least once per month; and
- (iii) **TS programme.** Each participant is required to set a savings target, and to accumulate savings over a two-year period for realising his/her PDP. At the same time, the project operator solicits a 1:1 matching donation from donors. Furthermore, CDF provides a grant (i.e. special financial incentive) at a “savings/special financial incentive” ratio of 1:1 starting from 2016 (see Table 1 in para. 1.6). If, for example, a participant sets a savings target of \$200 per month (i.e. the maximum level which CDF allows), he/she will have

Note 4: *Where cases warrant, participants can start using their savings in the middle of second year for implementing their PDPs.*

Introduction

\$14,400 (i.e. $(\$200 + \$200 + \$200) \times 24$ months) for implementing his/her PDP (Note 5); and

- (c) **Other services.** The project operator provides training and guidance to participants, parents and mentors on different topics (e.g. financial planning, communication skills and life planning).

1.6 To fund the projects, apart from providing special financial incentive (see para. 1.5(b)(iii)), CDF also provides project operators with training provisions (see para. 1.5(c)) and administrative fees (for operating the projects) on a per-participant basis. The levels of funding are adjusted from time to time taking into consideration relevant factors (e.g. inflation). Table 1 shows the levels of funding over the years.

Table 1

Levels of funding for CDF projects

Time of launching projects	Funding provision for each CDF participant		
	Training provision	Administrative fee	Special financial incentive
2008 (commencement of CDF) to 2013	\$15,000	\$1,500	\$3,000
2014 and 2015	\$20,000	\$2,000	\$3,000
2016 to 2018	\$22,000	\$2,200	Matching with TS on a 1:1 basis with a minimum of \$3,000 (see para. 1.5(b)(iii))
2019	\$23,100	\$2,310	

Source: Labour and Welfare Bureau records

Note 5: Participants may set a target lower than \$200 per month. Regardless of their lower savings targets, the Government will provide each of them a minimum special financial incentive of \$3,000 upon completion of the two-year savings plan.

Publicity and other supporting activities

- 1.7 The Government carries out a range of activities in support of CDF:
- (a) ***Publicity and promotion.*** Activities are conducted to enhance public awareness and understanding of CDF projects, and to engage stakeholders and partners (e.g. project operators). Such activities also help attract members of the public, businesses and other community groups to support CDF in mentor recruitment and providing matching donations. Activities which have been conducted included kick-off-cum-certificate presentation ceremonies for witnessing the achievements of completed projects and for launching new projects, and a year-round campaign during April 2018 to March 2019 for celebrating the 10th anniversary of CDF (see Photograph 1); and

Photograph 1

The CDF 10th anniversary signature programme (April 2018)



Source: CDF website

- (b) ***Value-added activities.*** Activities are organised with supporting organisations to widen participants' horizons and help them make informed life and career planning. Activities organised in the past included visits to different industries and professions, activities to explore arts, music and culture, and activities to equip participants with knowledge on financial management and life planning. Photograph 2 shows a value-added activity.

Photograph 2

A value-added activity: Junior Teacher's Classroom (November 2016)



Source: CDF website

Management and operation of CDF

1.8 The management of CDF involves different parties:

- (a) ***Labour and Welfare Bureau (LWB).*** LWB is the policy bureau overseeing the implementation and operation of CDF. It also carries out publicity and lines up value-added activities in support of CDF (see para. 1.7). As at 31 March 2019, the management of CDF involved 4 LWB staff (i.e. the CDF Team) (Note 6). The Team also serves as the secretariat of the Steering Committee on CDF (SCCDF — see (b) below). Appendix A shows an extract of LWB's organisation chart;

Note 6: *The LWB expenditure on managing CDF is subsumed in its programme area of "Social Welfare". For 2019-20, the programme area has a staff establishment of 96 and an estimated expenditure of \$518 million.*

- (b) **SCCDF.** In 2008, when seeking funding approval for setting up CDF, LWB informed Legislative Council (LegCo) that a steering committee would be set up to give policy steer to the design, and to oversee and monitor the implementation of CDF. In the same year, SCCDF was set up. It is chaired by the Permanent Secretary for Labour and Welfare (Note 7);
- (c) **Vetting Committee.** In 2008, LWB also informed LegCo that a dedicated vetting committee would be set up to consider service proposals from interested organisations. Accordingly, the Vetting Committee has been set up, which comprises representatives of LWB and the Social Welfare Department (SWD — see (d) below). The Vetting Committee assesses the quality aspects of applications for CDF projects; and
- (d) **SWD.** It assists LWB in the implementation of CDF projects. A CDF Office has been established under its Youth and Corrections Branch for the day-to-day administration and monitoring of CDF projects, including:
 - (i) inviting and preliminary vetting of applications for CDF projects;
 - (ii) supporting the Vetting Committee in assessing and selecting project applications;
 - (iii) preparing and signing service agreements with project operators;
 - (iv) disbursing funding to project operators and monitoring the use of funding; and

Note 7: *SCCDF has a chairperson, 13 non-official members and one ex-officio member (a representative of the Director of Social Welfare). Its terms of reference are to:*

- (a) oversee and monitor the implementation of CDF;*
- (b) oversee the promotion of CDF to facilitate community engagement;*
- (c) oversee and monitor the consultancy of CDF; and*
- (d) consider other matters related to CDF.*

Introduction

- (v) facilitating and/or advising project operators on project implementation and monitoring their performance.

As at 31 March 2019, 13 SWD staff were responsible for administering CDF projects (Note 8). Appendix B shows an extract of SWD's organisation chart.

1.9 At the inception of CDF in 2008, all projects were operated by NGOs. With a view to strengthening the community's capability in supporting CDF projects, as well as extending the reach of projects to benefit more children from a disadvantaged background, a school-based approach has also been adopted since the 2013/14 academic year. Both NGOs and schools are now operating CDF projects.

Monitoring service performance of project operators

1.10 For each CDF project, a service agreement (see para. 1.8(d)(iii)) stipulates:

- (a) ***Scope of service.*** It defines the services provided, such as recruitment of participants and mentors, provision of training and guidance to participants as well as parents and mentors, solicitation of donations, handling of complaints relating to the project, and conduct of overall project evaluation;
- (b) ***Output indicators.*** Indicators are set on project output (e.g. "total number of participants" and "total number of mentors") and standards are agreed for each indicator. Appendix C shows the 9 output indicators and their standards applicable to CDF projects launched in or after 2015 (Note 9); and

Note 8: *The SWD expenditure on managing CDF projects is subsumed in its programme area of "Young People (Government sector)". For 2019-20, the programme area has a staff establishment of 25 and an estimated expenditure of \$110 million.*

Note 9: *Output indicators, outcome indicators and their agreed standards are subject to amendments by SWD from time to time. As at the time of audit, the prevailing indicators/standards were those set for projects launched in or after 2015.*

- (c) ***Outcome indicators.*** Two indicators are set on project outcome. For projects launched in or after 2015 (see also Note 9 to (b) above), the 2 indicators are “proportion of participants who can complete the two-year savings plan” and “proportion of participants who can achieve short-term targets of PDPs with utilisation of some TS in the third year”. The agreed standards for both indicators are “70% or above”.

1.11 SWD takes various measures relating to the monitoring of project operators’ service performance:

- (a) ***Regular reporting from project operators.*** An operator is required to provide quarterly and yearly statistical returns on the attainment of output and outcome standards, and to provide audited financial reports (certified by two authorised persons of the operator and a certified public accountant) on compliance with funding terms and conditions;
- (b) ***Site visits and user satisfaction surveys.*** SWD conducts announced and unannounced visits to assess project operators’ service quality, investigate problems identified and follow up complaints. As and when necessary, SWD also conducts user satisfaction surveys on project operators’ responsible service units;
- (c) ***Guidelines.*** SWD issues guidelines (e.g. “General Guides on drawing up PDP and use of TS in relation to the PDP”) to project operators for adoption and distribution to relevant parties (e.g. mentors);
- (d) ***Briefing and sharing sessions.*** SWD arranges briefing sessions for potential project applicants when inviting applications, and for successful applicants to elaborate the key components of service agreements. SWD also arranges sharing sessions for operators to share experiences on the implementation of projects; and
- (e) ***Presentations on progress of projects.*** As and when required, SWD invites operators to give presentations on the progress of their projects at SCCDF meetings.

Progress of project implementation

1.12 *“One-plus-one” approach.* CDF projects are launched by batches. According to LWB and SWD, for some NGOs, it would be difficult to do long-term project planning if they have doubt about the prospect of being awarded CDF projects for a longer period. To facilitate NGOs’ forward planning and resource allocation, since the launch of the 5th batch of projects operated by NGOs, CDF has adopted a “one-plus-one” approach. Under this approach, each successful application is awarded 2 consecutive projects of three-year duration each. The implementation of the second project is subject to the satisfactory performance of the NGO in implementing the first project, which will be assessed in an interim assessment (Note 10).

1.13 As at 30 June 2019, 193 CDF projects had been launched and 18,140 children had participated in the projects (see Table 2).

Note 10: *The interim assessment is conducted during the third year of the first project. The assessment takes into consideration the project performance on the output and outcome indicators in the service agreement.*

Table 2
Number of CDF projects and participants
(30 June 2019)

Batch	Project commencement date (Note 1)	No. of projects (Note 2)	No. of participants (Note 3)
<i>NGO-run projects</i>			
1	April 2009	7	750
2	October 2010	15	1,518
3	January 2012 (Note 4(a))	18	2,155
4	January 2014	21	2,247
5	July 2015 (Note 4(b))	27	2,898
6	April 2017	27	2,856
7	December 2018 (Note 4(c))	27	2,814
Sub-total		142	15,238
<i>School-based projects</i>			
1	January 2014 (Note 4(d))	7	457
2	November 2015	10	556
3	November 2016	13	756
4	November 2017	11	603
5	November 2018	10	530
Sub-total		51	2,902
Total		193	18,140

Source: LWB and SWD records

Note 1: All projects had a duration of 3 years.

Note 2: The projects were run by 32 NGOs and 50 schools.

Note 3: Each NGO-run project had 81 to 132 participants (averaging 107), and each school-based project had 50 to 113 participants (averaging 57).

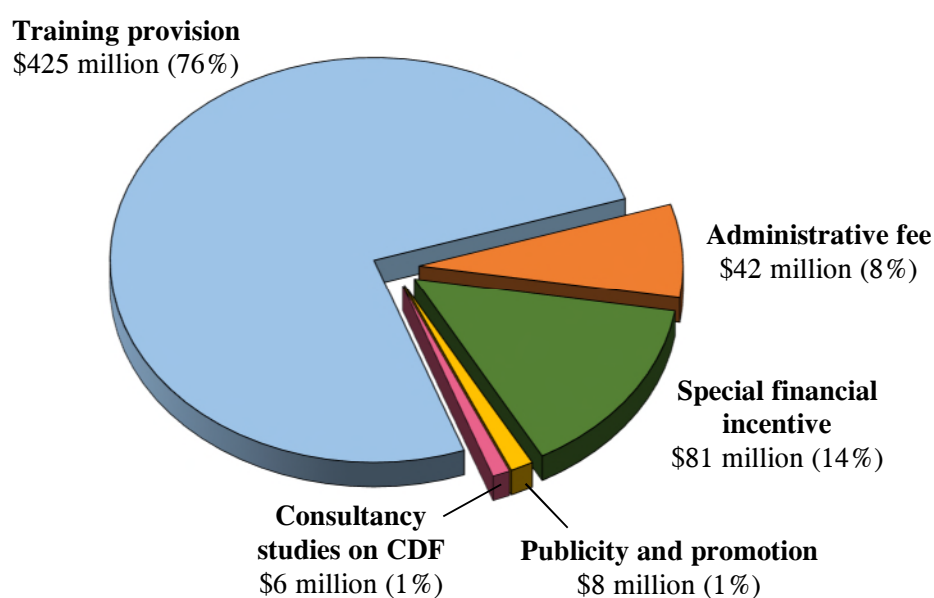
Note 4: Some projects started after the commencement dates:
(a) 2 of the 18 projects started in April 2012;
(b) 7 of the 27 projects started in October 2015;
(c) 7 of the 27 projects started in March 2019; and
(d) 2 of the 7 projects started in April 2014.

Use of funding

1.14 As at 31 March 2019, of the \$900 million funding for CDF (see para. 1.4), \$562 million had been utilised (Note 11), leaving a balance of \$338 million. Figure 1 shows a breakdown of the CDF funding which had been utilised.

Figure 1

**Utilised funding of CDF
(31 March 2019)**



Source: LWB records

Note 11: *The utilised funding comprised:*

- (a) *an accumulated expenditure of \$345 million; and*
- (b) *a project commitment of \$217 million. This amount was committed to CDF projects which had been awarded. The amount would be disbursed to projects by instalments after 31 March 2019.*

Audit review

1.15 In April 2019, the Audit Commission (Audit) commenced a review to examine the management of CDF, focusing on:

- (a) planning the launch of projects and commissioning project operators (PART 2);
- (b) implementation of projects (PART 3); and
- (c) governance and other administrative matters (PART 4).

Audit has found room for improvement in the above areas and has made recommendations to address the issues.

1.16 In conducting this review, Audit carried out data analyses and examination of records at LWB and SWD. Audit also visited 5 project operators to examine their records relating to the implementation of 10 projects (see PART 3):

- (a) for the conduct of audit visits, Audit grouped operators into 3 classes according to the number of projects they had run, namely, “Class A” (i.e. with 1 project completed), “Class B” (i.e. with 2 or 3 projects completed) and “Class C” (i.e. with 4 to 8 projects completed) (Note 12). Table 3 shows the operators visited and projects examined for each class; and

Note 12: *As at 30 June 2019, 7 batches of a total of 105 projects had been completed. The first 2 batches of NGO-run projects (totalling 22 projects) were pilot in nature and SWD’s database for monitoring their performance had not been fully developed. For the remaining 83 (i.e. 105 — 22) CDF projects, the projects had been implemented by 45 operators. Of these operators, according to Audit’s classification, 27 were Class A operators, 11 were Class B operators and 7 were Class C operators.*

Table 3

**Audit visits to project operators
(June and July 2019)**

Class of operators	No. of operators visited	No. of projects examined
A	2 (Note 1)	2
B	2 } (Note 2)	5
C	1 }	3
Total	5	10

Source: Audit visits to project operators

Note 1: The operators were schools.

Note 2: The operators were NGOs.

- (b) key matters examined during audit visits were operators' compliance with requirements in service agreements, and operators' practices in the use of funding provisions and monitoring of participants' use of TS.

General response from the Government

1.17 The Secretary for Labour and Welfare and the Director of Social Welfare appreciate Audit's efforts in conducting this study and making recommendations on the administration of CDF. They have said that:

- (a) they appreciate the observations and recommendations made by Audit in the study; and
- (b) LWB and SWD will follow up and implement the recommendations as appropriate.

Acknowledgement

1.18 Audit would like to acknowledge with gratitude the full cooperation of the staff of LWB, SWD and the project operators visited during the course of the audit review.

PART 2: PLANNING THE LAUNCH OF PROJECTS AND COMMISSIONING PROJECT OPERATORS

2.1 This PART examines issues relating to the launch of CDF projects, focusing on:

- (a) planning the launch of projects (paras. 2.2 to 2.18); and
- (b) commissioning project operators (paras. 2.19 to 2.34).

Planning the launch of projects

2.2 In April 2008, when seeking funding approval for setting up CDF, LWB informed LegCo Members that:

- (a) the first batch of CDF projects would comprise 7 pioneer projects;
- (b) in the light of experience, subsequent batches of projects would be rolled out in future; and
- (c) with a funding commitment of \$300 million, it was estimated that at least 13,600 children would benefit from CDF, if the proposed model of the first batch of pioneer projects was to be adopted.

2.3 In May 2008, through SWD, LWB invited applications for the first batch of CDF projects for launching (i.e. commencement) in 2009. In July 2009, two LegCo Members enquired about the Government's concrete timetable for implementing subsequent batches of CDF projects. In its reply, LWB envisaged that CDF would be fully implemented by batches in 3 to 5 years. LWB also remarked that the timetable for launching subsequent batches of CDF projects could be reviewed in the light of practical experience in implementing the first batch of pioneer projects.

Planning the launch of projects and commissioning project operators

2.4 In April 2013, LWB further informed LegCo Members that the Government's target was to roll out (i.e. launch) 20 new projects every year for 2,000 to 2,300 new participants.

Need to provide LegCo with updated information on CDF

2.5 According to the information provided to LegCo by LWB in 2008 and 2009, it was envisaged that at least 13,600 children (i.e. participants) would benefit from the first financial commitment of \$300 million created for CDF (see para. 2.2(c)), and that CDF would be fully implemented by batches in 3 to 5 years (see para. 2.3).

2.6 In 2017, the accumulated number of participants in CDF reached 14,796 (see Table 4). The envisaged number of 13,600 participants was therefore attained (i.e. the number benefitting from the first \$300 million financial commitment — see para. 2.5). Meanwhile, 8 years had elapsed since the first batch of CDF projects was launched in 2009. This did not appear to tally with the envisaged time frame of fully implementing CDF in 3 to 5 years (see para. 2.5). The chronology of events relating to setting out the estimated number of participants (i.e. the 13,600 participants and additional participants benefitting from subsequent increases of the financial commitment on CDF), as well as the time frame for launching projects for these participants, are shown in Table 5.

Planning the launch of projects and commissioning project operators

Table 4

**Accumulated numbers of
CDF projects launched and participants in the projects
(30 June 2019)**

Year	Project			Participant		
	No. of projects launched in the year		Accumulated no. of projects launched since 2009	No. of new participants in the year	Accumulated no. of participants since 2009	
	NGO- run (a)	School- based (Note 1) (b)				
			Total (c) = (a) + (b)			
2009	7	N.A.	7	7	750	750
2010	15	N.A.	15	22	1,518	2,268
2011	0	N.A.	0	22	0	2,268
2012	18	N.A.	18	40	2,155	4,423
2013	0	N.A.	0	40	0	4,423
2014	21	7	28	68	2,704	7,127
2015	27	10	37	105	3,454	10,581
2016	0	13	13	118	756	11,337
2017	27	11	38	156	3,459	14,796
2018	20	10	30	186	2,682	17,478
2019	7	0 (Note 2)	7	193	662	18,140

Source: LWB and SWD records

Note 1: School-based projects were first launched in January 2014.

Note 2: Figures in the Table show the position as at 30 June 2019. According to LWB and SWD, a further batch of 14 school-based projects would be launched in November 2019.

Planning the launch of projects and commissioning project operators

Table 5

**Chronology of events relating to
setting out the estimated number of CDF participants
and the time frame for launching projects for these participants
(April 2008 to June 2019)**

Date	Event
April 2008	(a) The Government set up CDF with an initial allocation of \$300 million (see para. 1.3). (b) LegCo Members were informed that, with a funding commitment of \$300 million, it was estimated that at least 13,600 children would benefit from CDF.
April 2009	(c) The first batch of CDF projects (comprising 7 NGO-run projects) was launched.
July 2009	(d) LWB informed LegCo Members that CDF, as LWB envisaged, would be fully implemented by batches in 3 to 5 years, and that the Government would consider the timing on how to further develop CDF into a longer-term model taking into account the practical experience in implementing the first batch of pioneer projects.
May 2015	(e) The Government increased the financial commitment on CDF by \$300 million (see para. 1.4). (f) LWB informed LegCo Members that this could benefit an additional number of 9,700 participants in the future batches of projects to be launched beyond 2015.
December 2017	(g) The actual number of participants had accumulated to 14,796 (see Table 4). (h) The envisaged number of 13,600 participants (i.e. the number estimated to be benefitted by the first financial commitment) was attained and exceeded.
May 2018	(i) The Government further increased the financial commitment on CDF by \$300 million (see para. 1.4). (j) LWB informed LegCo Members that this could benefit an additional number of 9,000 participants in the future batches of projects.
March 2019	(k) In publicising information for commemorating the CDF 10th anniversary, LWB took into account the funding provision for each CDF participant for different batches of CDF projects, and provided an update on the estimated number of participants in CDF. Accordingly, the total number of participants funded by the financial commitment of \$900 million was estimated to be 30,000.
June 2019	(l) The actual number of participants in CDF projects accumulated to 18,140 (see Table 4). Projects had yet to be launched for 11,860 children (i.e. the estimated total number of 30,000 minus 18,140 participants).

Source: Audit analysis of LWB records

Planning the launch of projects and commissioning project operators

2.7 In September 2019, Audit sought clarifications of the total number of participants which CDF intended to benefit as of April 2008, May 2015 and May 2018 (see items (b), (f) and (j) of Table 5 in para. 2.6), as well as the time frame for launching projects for these participants (see items (d), (f) and (j) of Table 5 in para. 2.6). In reply, LWB and SWD informed Audit that:

- (a) the time frame which LegCo was informed of in 2009, i.e. fully implementing CDF by batches in 3 to 5 years (see item (d) of Table 5 in para. 2.6), was only a very rough estimate. As explained to LegCo in July 2009, the Government would consider the timing on how to further develop CDF into a longer-term model taking into account the practical experience in implementing the first batch of pioneer projects;
- (b) the schedule for launching subsequent batches of CDF projects was subsequently adjusted, having regard to the practical experience gained in implementing the first 3 batches of CDF projects;
- (c) the funding provision for each CDF participant was adjusted upwards in 2014 and 2016 (see Table 1 in para. 1.6). The original estimated number of 13,600 participants (see item (b) of Table 5 in para. 2.6), which was calculated based on a lower funding provision for each participant, would become smaller in light of the increase in per-head provision for each CDF participant;
- (d) as the level of funding provision for each participant would be adjusted from time to time, which would result in the adjustment of the total number of participants, the envisaged total number of participants was an “estimated total number” instead of an “intended number”; and
- (e) to simplify the presentation in the papers submitted to LegCo when seeking increases in the financial commitment in 2015 and 2018, LWB focused on the number of participants to be funded by the additional funding, without mentioning the latest estimate of the total number of participants in relation to the first funding allocation.

Audit further noted that according to a speech given by the Chief Executive of the Hong Kong Special Administrative Region at the ceremony celebrating CDF 10th anniversary in March 2019 (see para. 1.7(a)), the estimated total number of participants (i.e. funded by the financial commitment of \$900 million) was updated to

Planning the launch of projects and commissioning project operators

30,000 (see item (k) of Table 5 in para. 2.6). Meanwhile, LegCo was not separately informed of this updated number.

2.8 In Audit's view, there is room for better updating LegCo on relevant information about CDF. Such information includes the latest estimated number of participants, the time frame for launching projects for these participants, and the latest number of children who have benefitted from CDF projects. Audit further noted that there is also room for better updating LegCo on the basis of the annual target of the CDF (see paras. 2.14(b) and 2.15(b)).

2.9 Audit considers that, to improve public accountability, LWB needs to keep LegCo updated on relevant information (see para. 2.8) about the implementation of CDF and about the progress of launch of projects.

2.10 In this connection, Audit noted that, as at 31 March 2019, of the \$900 million financial commitment on CDF, there was an unutilised balance of \$338 million (38%) (see para. 1.14). The balance was equivalent to the sum of:

- (a) the entire \$300 million commitment created in May 2018 (see item (i) of Table 5 in para. 2.6); and
- (b) 13% (i.e. \$38 million) of the \$300 million commitment created in May 2015 (see item (e) of Table 5 in para. 2.6).

2.11 As at 30 June 2019, CDF projects had yet to be launched for many (11,860) children (see item (l) of Table 5 in para. 2.6) under the total financial commitment of \$900 million. Included in this total financial commitment was the \$300 million commitment created in May 2015, a substantial amount (\$38 million) of which had not been utilised after more than 3 years since its creation.

2.12 Audit considers that, with a view to better utilising CDF for benefitting eligible children, LWB needs to keep in view any need for expediting the launch of future CDF projects, having regard to the practical experience in project implementation (see PART 3).

Need for launching NGO-run projects regularly

2.13 In April 2013, LWB informed LegCo Members of its annual target for launching new projects (i.e. 20 new projects for 2,000 to 2,300 new participants — see para. 2.4). Audit noted that:

- (a) in the 7 years from 2013 to 2019, the annual target was not met in 3 years, i.e. 2013, 2016 and 2019 (see Table 6):
 - (i) for 2 years (i.e. 2013 and 2016), no NGO-run projects were launched. The lapse of time between the launch of a batch of NGO-run projects and the launch of an ensuing batch varied, ranging from 18 to 21 months (averaging 20 months) during 2013 to 2019; and
 - (ii) on the other hand, arrangements had been made for launching school-based projects every year since 2014 (e.g. records indicated that applications for school-based projects were invited every March during 2016 to 2019, for launching in November of the year); and
- (b) in 2014, 2015, 2017 and 2018, many NGO-run projects were launched (see Table 6). Records indicated that, mainly due to these NGO-run projects, the target numbers of new projects and participants were met and well exceeded in the years. For example, in 2017, 27 NGO-run projects were launched which had 2,856 participants (see Table 2 in para. 1.13), which already exceeded the target number of 20 new projects and the target range of 2,000 to 2,300 new participants.

Planning the launch of projects and commissioning project operators

Table 6

**Meeting the annual target numbers
of new projects and participants during 2013 to 2019
(30 June 2019)**

Year	No. of new projects launched in the year			Total no. of participants in the new projects	Meeting the annual target of	
	NGO-run (a)	School-based (Note 1) (b)	Total (c) = (a) + (b)		20 new projects (Yes ✓/ No ×)	2,000 to 2,300 new participants (Yes ✓/ No ×)
<i>Projects launched in January 2013 to June 2019</i>						
2013	0	N.A.	0	0	×	×
2014	21	7	28	2,704	✓	✓
2015	27	10	37	3,454	✓	✓
2016	0	13	13	756	×	×
2017	27	11	38	3,459	✓	✓
2018	20	10	30	2,682	✓	✓
2019	7 (Note 2)	0	21	1,377 to 1,478 (Note 3)	✓	×
<i>Projects to be launched in July to December 2019</i>						
2019	0	14 (Note 4)				

Source: LWB and SWD records

Note 1: School-based projects were first launched in January 2014.

Note 2: The 7 NGO-run projects had 662 participants (see Note 4(c) to Table 2 in para. 1.13).

Note 3: Being the total of the number of participants in the 7 NGO-run projects already launched in 2019 (i.e. 662 participants — see Note 2 above) and the number of participants in the 14 school-based projects planned to be launched in 2019 (i.e. 715 to 816 — see Note 4 below).

Note 4: The 14 school-based projects were planned to be launched in November 2019, with an expected number of 715 to 816 participants.

Planning the launch of projects and commissioning project operators

2.14 Upon enquiry, in August and September 2019, LWB and SWD informed Audit that:

- (a) regarding the lapse of time between the launch of different batches of NGO-run projects:
 - (i) when launching a batch of NGO-run projects, the experience gained in implementing previous batches of CDF projects (e.g. recruitment of participants/mentors and the capacity of NGOs) had been taken into account;
 - (ii) if the time lapse between each batch of NGO-run projects was shortened, it was envisaged that NGO operators would have difficulties in recruiting a sufficient number of participants and mentors in a timely manner, which might not result in an increase in the average number of participants per year; and
 - (iii) in consultation with SWD, LWB had drawn up the timetable for regularly launching future NGO-run and school-based projects; and
- (b) regarding the annual target of rolling out 20 new projects for 2,000 to 2,300 new participants:
 - (i) having regard to the characteristics of NGO-run projects, LWB considered that the annual target should be assessed on an average basis instead of by calendar year; and
 - (ii) from 2013 to 2018, on average, CDF launched projects for 2,176 participants per year. This number was within the annual average target of 2,000 to 2,300 new participants.

Audit noted that, as at 30 September 2019, LWB had not provided LegCo with information on the basis of attainment of the annual target (see (b)(i) above).

2.15 In Audit's view:

- (a) regarding the lapse of time between the launch of different batches of NGO-run projects (see para. 2.14(a)), NGO-run projects were a crucial

Planning the launch of projects and commissioning project operators

component in the launch of CDF projects. The launching of more NGO-run projects, if assessed to be operationally feasible and practicable, would benefit more eligible children both in terms of number of projects and number of participants; and

- (b) regarding the annual target of rolling out 20 new projects for 2,000 to 2,300 new participants (see para. 2.14(b)), while noting LWB's clarification that the target was assessed on an average basis, for the avoidance of doubt, there is a need for LWB to clarify the basis with LegCo (see para. 2.9).

2.16 Audit considers that LWB needs to take measures to launch new batches of NGO-run projects regularly in accordance with the timetable drawn up. Drawing on the practical experience in project implementation (see PART 3), LWB also needs to sustain its efforts in attaining the annual target on an average basis.

Audit recommendations

2.17 **Audit has *recommended* that the Secretary for Labour and Welfare should:**

- (a) **keep LegCo updated on relevant information about the implementation of CDF and about the progress of launch of projects;**
- (b) **keep in view any need for expediting the launch of future CDF projects, having regard to the practical experience in project implementation;**
- (c) **take measures to launch new batches of NGO-run projects regularly in accordance with the timetable drawn up; and**
- (d) **sustain LWB's efforts in attaining the annual target (i.e. rolling out 20 new projects for 2,000 to 2,300 new participants on an average basis), drawing on the practical experience in project implementation.**

Response from the Government

2.18 The Secretary for Labour and Welfare agrees with the audit recommendations. He has said that LWB will:

- (a) keep LegCo updated on relevant information and progress on implementation of CDF (e.g. the latest estimated number of participants, the implementation time frame for launching projects for these participants, the latest number of children having benefitted from CDF projects so far, and the basis of the annual target) as and when appropriate;
- (b) keep in view any need for expediting the launch of future CDF projects, having regard to the practical experience in project implementation; and
- (c) sustain efforts in attaining the average annual target, and oversee SWD to roll out new batches of NGO-run projects in accordance with the drawn up timetable.

Commissioning project operators

2.19 NGO-run projects and school-based projects are launched in different batches. For each batch, LWB sets a target (i.e. batch target) of the number of NGO-run projects or school-based projects to be launched. According to the batch target, SWD invites applications from operators (i.e. NGOs or schools) for running the projects:

- (a) **NGO-run projects.** SWD divides the batch target number of NGO-run projects among different districts (Note 13). The number so allocated to a district serves as its quota. SWD maintains a list of relevant NGOs and sends e-mails to invite them to apply for running projects. SWD takes into account the demand for projects in allocating district quotas (see paras. 2.25 to 2.28); and

Note 13: *As at 30 June 2019, there were 12 districts, comprising 2 districts in Hong Kong and Islands, 5 districts in Kowloon and 5 districts in the New Territories. The districts had been set with reference to the administrative districts of SWD.*

Planning the launch of projects and commissioning project operators

- (b) *School-based projects.* SWD does not set district quotas. All eligible schools over the territory (i.e. public sector schools and schools under the Direct Subsidy Scheme) can apply for running projects under the batch target number of school-based projects. According to SWD, it sends e-mails to invite all eligible schools to apply for running the projects.

According to SWD records, applications for projects (both NGO-run projects and school-based projects) were required to meet basic requirements (referred to as “mandatory requirements” by SWD — see Appendix D) and to undergo a quality assessment (see Appendix E). The results of assessment (i.e. the meeting of mandatory requirements as well as the results of the quality assessment) were presented to the Vetting Committee (see para. 1.8(c)) for deliberation and consideration.

2.20 As at 30 June 2019, 7 batches of NGO-run projects and 5 batches of school-based projects had been launched (see Table 2 in para. 1.13). SWD had received 231 applications for projects and awarded 193 projects to applicants. The distribution of the 193 projects over the territory and the participants in the projects is at Appendix F.

Applications exceeding quotas for some districts

2.21 For CDF projects launched in the period from April 2009 to June 2019, a considerable proportion (35%) of applications for NGO-run projects were unsuccessful (i.e. not resulting in the award of projects) (see Table 7).

Planning the launch of projects and commissioning project operators

Table 7

**Number of applications for running CDF projects
(for projects launched in the period from April 2009 to June 2019)**

Batch	Batch target (No. of projects)	No. of applications		
		Received	Successful (i.e. projects awarded)	Unsuccessful (i.e. projects not awarded)
NGO-run projects				
1	7	16 (100%)	7 (44%)	9 (56%)
2	15	41 (100%)	15 (37%)	26 (63%)
3	21	31 (100%)	18 (58%)	13 (42%)
4	20 (Note 1)	27 (100%)	21 (78%)	6 (22%)
5	20 (Note 1)	32 (100%)	27 (84%)	5 (16%)
6	25 (Note 1)	30 (100%)	27 (90%)	3 (10%)
7	20	N.A. (Note 2)		
Overall		177 (100%)	115 (65%)	62 (35%)
School-based projects				
1	10	7 (100%)	7 (100%)	0 (0%)
2	8	13 (100%)	10 (77%)	3 (23%)
3	10	13 (100%)	13 (100%)	0 (0%)
4	10	11 (100%)	11 (100%)	0 (0%)
5	10	10 (100%)	10 (100%)	0 (0%)
Overall		54 (100%)	51 (94%)	3 (6%)
Overall		231 (100%)	166 (72%) (Note 3)	65 (28%)

Source: Audit analysis of SWD records

Note 1: The number of projects awarded was larger than the batch target because SWD had adjusted the number of projects in individual districts having regard to the quality of proposals received.

Note 2: Under the “one-plus-one” approach (see para. 1.12), after an interim assessment, the operators of the 27 NGO-run projects in the 5th batch were allowed to continue implementing projects in the 7th batch. Therefore, no applications for projects were invited for the 7th batch.

Note 3: The total number of projects launched in the period from April 2009 to June 2019 was 193, comprising the 166 projects shown in the Table and 27 projects launched under the “one-plus-one” approach in the 7th batch (see also Note 2 above).

Planning the launch of projects and commissioning project operators

2.22 Audit noted that, included in the 62 unsuccessful applications for NGO-run projects were 51 applications which:

- (a) had met the mandatory requirements and passed the quality assessment (i.e. meeting or exceeding the passing mark of 50%) but were not awarded projects; and
- (b) were submitted from 11 districts. The number of unsuccessful applications for each district ranged from 1 to 10.

According to SWD records, insofar as the 51 applications were concerned, the district quotas of the 11 districts had been reached or exceeded. In the circumstances, projects had been awarded to other application(s) in the district which had higher score(s).

2.23 Upon enquiry, in September 2019, SWD informed Audit that for NGO-run projects:

- (a) having regard to the quality of the applications received, the number of projects awarded for the 4th to the 6th batches were larger than the batch target (see also Note 1 to Table 7 in para. 2.21). For example, in the 6th batch of projects, one more project each was allocated for 3 districts (applications for projects in these districts had exceeded the district quota); and
- (b) disregarding the first batch of projects, the number of unsuccessful applications was on a decreasing trend (i.e. from 63% to 10% — see Table 7 in para. 2.21).

While noting the above measures for alleviating unsuccessful applications where district quotas had been exceeded, Audit noted room for improving the setting of district quotas (see paras. 2.25 to 2.28).

2.24 In this connection, Audit further noted that for 2 districts (i.e. Shatin and Yuen Long), no applications were submitted for NGO-run projects in the 5th batch and the 6th batch respectively. For these 2 districts, the quotas concerned were therefore not used, in contrast with some districts' keen demand for NGO-run

Planning the launch of projects and commissioning project operators

projects. In PART 4, Audit noted room for stepping up efforts in promoting CDF among NGOs and schools (see paras. 4.15 to 4.22).

Need to improve setting of district quotas

2.25 SWD records showed that district quotas for NGO-run projects (see para. 2.19(a)) were set based on 2 parameters:

- (a) demand for CDF projects, which was approximated by the number of children (aged 10 to 16) living on Comprehensive Social Security Assistance (CSSA) over the territory; and
- (b) the number of projects operated in previous batches in the districts.

2.26 Audit noted that the above methodology did not take into account the number of other children who, while not living on CSSA, were having a disadvantaged background. Example of such other children were those whose household income was less than 75% of the median monthly domestic household income (see also Note 3 to para. 1.5(a)). Audit further noted that:

- (a) according to SWD's records, as at June 2019, the number of children (aged 10 to 16) living on CSSA totalled 29,678; and
- (b) according to LWB's latest available estimation, the number of eligible children for CDF projects totalled some 186,000 (Note 14).

It followed that the number of such other children would be considerable, i.e. in the order of 150,000 (the difference between the numbers in (a) and (b) above).

2.27 Upon enquiry, in August 2019, SWD informed Audit that in addition to the 2 parameters mentioned in paragraph 2.25, it also considered other factors

Note 14: *In January 2015, a LegCo Member sought information from the Government on the ratio of CDF's target participants to the number of children in poverty. In response, LWB remarked that, in 2014, some 186,000 children might be eligible to join CDF projects.*

Planning the launch of projects and commissioning project operators

(e.g. the recruitment conditions of individual districts in previous batches and district coverage) when setting the district quotas.

2.28 Audit considers that, in setting district quotas for CDF projects, SWD needs to adequately take into account the number of children who are not living on CSSA but are having a disadvantaged background (see para. 2.26) as well as any other relevant factors (see para. 2.27 for examples), with a view to better assessing the demand for CDF projects over the territory.

Need to improve quality assessment of school-based project applications

2.29 Applications for CDF projects were required to meet mandatory requirements and to undergo a quality assessment (see para. 2.19). Audit noted that, for school-based projects:

- (a) no passing marks were set for the quality assessment; and
- (b) due to the limited number of applications received, some projects were awarded to applications which had scored less than 50% in the quality assessment. Of the 51 successful applications for school-based projects launched during January 2014 to June 2019 (see Table 7 in para. 2.21), 6 (12%) applications had attained a mark below 50% in the quality assessment (ranging from 47% to 48%).

In contrast, a passing mark of 50% had been adopted for NGO-run projects (see para. 2.22(a)). Audit considers that SWD needs to consider setting a passing mark to improve the quality assessment of school-based projects.

2.30 Regarding the limited number of applications received for school-based projects, Audit noted that as at 30 June 2019, a total of 50 schools had served as operators of school-based projects (Note 15). Whereas, according to the Education

Note 15: *These 50 schools participated in 51 school-based projects. Some individual projects were jointly operated by more than one schools, and some schools operated more than one projects in different batches.*

Planning the launch of projects and commissioning project operators

Bureau's information published in July 2019, there were over 1,000 eligible schools in Hong Kong.

2.31 Upon enquiry, in September 2019, LWB informed Audit that:

- (a) the fact that there were over 1,000 eligible schools did not necessarily mean that all schools had a sufficient number of eligible children;
- (b) participants of both NGO-run projects and school-based projects were students. Instead of running school-based projects, some schools preferred to refer suitable students to join NGO-run projects; and
- (c) it was not LWB's intention that all schools or the majority of them would apply for school-based projects.

2.32 In Audit's view, the proportion of schools which had run projects was small (only some 5%). In PART 4, Audit noted room for stepping up efforts in promoting CDF among NGOs and schools (see paras. 4.15 to 4.22).

Audit recommendations

2.33 **Audit has *recommended* that the Director of Social Welfare should:**

- (a) **in setting district quotas for CDF projects, adequately take into account relevant factors, with a view to better assessing the demand for CDF projects over the territory; and**
- (b) **in consultation with the Vetting Committee, consider setting a passing mark for the quality assessment of school-based projects.**

Response from the Government

2.34 The Director of Social Welfare agrees with the audit recommendations. He has said that SWD will:

Planning the launch of projects and commissioning project operators

- (a) in consultation with the Census and Statistics Department, include other relevant figures relating to children with low income background (e.g. number of families with household income less than 75% of the relevant median monthly domestic household income and with children aged 10 to 16) in considering the setting of district quotas for future NGO-run projects; and
- (b) in consultation with the Vetting Committee, set a passing mark for quality assessment of the applications in respect of school-based projects.

PART 3: IMPLEMENTATION OF PROJECTS

3.1 This PART examines the implementation of CDF projects, focusing on:

- (a) practices in project delivery (paras. 3.2 to 3.23);
- (b) financial monitoring of projects (paras. 3.24 to 3.34); and
- (c) attainment of intended outputs and outcomes (paras. 3.35 to 3.43).

Practices in project delivery

3.2 Operators of CDF projects comprise NGOs and schools. In June and July 2019, Audit visited 5 project operators to examine their project delivery (see para. 1.16). A total of 10 completed projects were examined (see Table 8).

Table 8

**Operators visited and projects examined by Audit
(June and July 2019)**

Operator		No. of projects examined	No. of participants
A	NGO	3	350
B		3	286
C		2	201
D	School	1	50
E		1	57
Total		10	944

Source: Audit visits to project operators

Need to ensure compliance with requirements in service agreements

3.3 A service agreement is signed between SWD and the operator for each CDF project (see para. 1.10), stipulating the scope of service and funding conditions.

Implementation of projects

Among others, the following key requirements have been stated in the service agreement:

- (a) ***Insurance requirements.*** An operator shall maintain an insurance policy to cover liabilities in respect of personal injury to or death of any person (including employees, volunteers, mentors, participants and third parties) arising out of or resulting from the performance of the project; and
- (b) ***Procurement requirements.*** Goods and services must be procured on an open and competitive basis, and only from non-associated parties. If the value of goods and services exceeds \$5,000, written quotations are required. For value exceeding \$500,000, open tenders shall be used (Note 16). The supplier that meets procurement requirements and has submitted the lowest bid shall be selected, or full justifications must be given and properly recorded.

3.4 Audit noted cases of non-compliance with the aforementioned requirements in the 10 projects examined (see Table 9).

Note 16: *The service agreement stipulates requirements on written quotations to be obtained or open tender to be used for procurement of goods/services on different bands of aggregate values:*

- (a) *over \$5,000 but not exceeding \$10,000, written quotations from at least 2 suppliers;*
- (b) *over \$10,000 but not exceeding \$50,000, written quotations from at least 3 suppliers;*
- (c) *over \$50,000 but not exceeding \$500,000, written quotations from at least 5 suppliers; and*
- (d) *exceeding \$500,000, open tender shall be used.*

Table 9

**Non-compliance with requirements on insurance and procurement
(January 2012 to October 2018)**

Operator	Details of non-compliance	
	Insurance	Procurement
A	N.A. (no non-compliance)	(4) In 2 cases (involving 1 project), no quotations had been obtained for services valued some \$9,300 and \$7,500 respectively, and no justifications for the non-compliance had been documented.
B	(1) For 3 projects, the number of insured persons was 50 per activity, less than the total number of participants, mentors and parents, which ranged from 198 to 264 persons for the 3 projects.	(5) In 3 cases (involving 3 projects): – Case A: A cleaning service costing \$157,000 was procured from an associated social enterprise. No other quotations had been obtained; – Case B: For an exchange tour costing some \$385,000, 5 written quotations had been obtained. The lowest bid was not selected; and – Case C: For a camping service costing some \$25,000, no quotations had been obtained. No justifications for the non-compliance had been documented.
	(2) For 2 of the 3 projects (see (1) above), from October 2016 to October 2017, the insurance policy only covered people aged between 15 and 70. The number of participants aged under 15 (i.e. not covered during the period) totalled 69 for the 2 projects.	
C	N.A. (no non-compliance)	N.A. (no non-compliance)
D	(3) For 1 project, no insurance was arranged for mentors and parents for the first 20 months (the number of mentors and parents was 48 and 49 respectively).	N.A. (no non-compliance)
E	N.A. (no non-compliance)	(6) Design/printing and photography services costing \$9,400 were procured from an associated social enterprise of the partner NGO (Note). No justifications for non-compliance had been documented.

Source: Audit analysis of project operator records

Note: The NGO partnered with Operator E to provide training programmes for the project.

Implementation of projects

3.5 Records also indicated that, for each of the 10 projects examined, SWD had conducted site visits to the operators concerned (see para. 1.11(b)). Audit noted that of the 6 incidents of non-compliance (see items (1) to (6) of Table 9 in para. 3.4):

- (a) for 2 incidents (items (1) and (3) of Table 9), SWD identified the non-compliance during the site visits and reminded the operators of the relevant requirements; and
- (b) for 4 incidents (items (2) and (4) to (6) of Table 9), SWD did not identify the non-compliance during the site visits.

3.6 Audit considers that SWD needs to step up efforts in ensuring project operators' compliance with requirements in the service agreements during project delivery.

Need to ensure effective use of training provisions

3.7 Funding provisions (i.e. training provisions and administrative fees — see para. 1.6) are granted to operators on a per-participant basis.

3.8 For the 10 projects examined, operators used the training provisions to conduct a total of 726 training programmes (Note 17). Audit analysed 50 training programmes which were conducted from January 2012 to October 2018 with training provisions (i.e. 5 programmes for each of the 10 projects), and found a wide variation in programme types (e.g. workshops, lunch/dinner events and overseas tours) and in programme costs (ranging from \$28 to \$6,773 per person). Table 10 shows the audit analysis.

Note 17: *The administrative fees of the 10 projects comprised mainly staff remuneration and audit fees.*

Table 10

**Audit analysis of 50 training programmes
(January 2012 to October 2018)**

Type of programmes	No. of			Total cost incurred (\$'000)	Cost per person (\$)
	Programmes	Projects involved	Operators involved		
(a) Workshops	10	6	4	3 to 27	28 to 712
(b) Lunch/dinner events	9	6	3	27 to 60	164 to 337
(c) Training camps (Note 1)	9	6	2	6 to 30	106 to 1,489
(d) Ceremonies	8	5	4	16 to 108	94 to 1,105
(e) Overseas tours (Note 2)	7	4	2	163 to 385	3,890 to 6,773
(f) Others (Note 3)	7	5	3	6 to 13	231 to 2,359
Overall	50	10	5		

Source: Audit analysis of project operator records

Note 1: The duration of the training camps ranged from 2 to 3 days.

Note 2: The duration of the overseas tours ranged from 4 to 5 days.

Note 3: Examples of other programmes were Christmas party, instrumental classes and day tours.

3.9 In September 2019, Audit enquired about the wide variation in the types and costs of training programmes. SWD informed Audit that:

- (a) project operators had been provided with guidelines on PDPs, TS and Mentorship which were the 3 key components of CDF. They should therefore have good understanding of the objectives of CDF which would facilitate them in designing and carrying out suitable training programmes/activities for their participants, parents and mentors;

Implementation of projects

- (b) so long as the operators could meet the objectives and output requirements on training programmes with no additional cost incurred to the Government, they should be given the autonomy and flexibility as far as possible to provide tailor-made or innovative training programmes to participants to best meet their needs; and
- (c) for projects launched from 2018 onwards, to specifically meet the training needs for participants, it was set out that operators were required to use 60% of training provisions for participants directly.

3.10 While noting the new requirement on the direct use of training provisions for participants (see para. 3.9(c)), Audit noted that no SWD guidelines had been issued setting out other principles of using training provisions (e.g. on the types and costs of programmes run with training provisions). In Audit's view, this was not conducive to public accountability and effective use of training provisions, particularly because:

- (a) ***Sensitive expenditures.*** Some expenditure items were sensitive in nature (Note 18), such as lunch/dinner events and overseas tours (see items (b) and (e) of Table 10 in para. 3.8); and
- (b) ***Considerable amounts.*** The cost per person participating in the activities could be as high as \$6,773 for overseas tours (see item (e) of Table 10 in para. 3.8), which was equivalent to a considerable proportion (i.e. 34% of \$20,000) of the training provision for a participant.

3.11 Audit considers that, SWD needs to consider issuing guidelines to set out the principles of using training provisions.

Note 18: *Sensitive expenditures refer to those incurred by using public funding and which can easily arouse public concerns. Examples of these potentially sensitive expenditures are those on meals and overseas tours. The public expects these expenditures to be moderate and conservative.*

Need to disseminate good practices on monitoring participants' use of TS

3.12 Under the TS programme, each participant saves up to \$200 per month for the first 2 years, and then spends the TS in accordance with his/her short-term PDP in the third year (see para. 1.5(b)(i) and (iii)) (Note 19). SWD has issued guidelines on the use of TS (see para. 1.11(c)). According to the guidelines, operators should assess if the participants' proposals on the use of TS are related to achieving short-term or long-term development targets of PDPs.

3.13. For the 10 projects examined, Audit analysed operators' practices on monitoring participants' use of TS (Note 20). Table 11 shows that, of the 5 operators involved, 4 had adopted at least one of the following control measures on making purchases with TS:

- (a) ***Quotation requirements.*** Requirements on the number of quotations were imposed (e.g. Operator B required that participants should obtain 2 quotations for purchases costing over \$1,500 each);
- (b) ***Purchase limits.*** Ceilings were set on the purchase of certain goods/services (e.g. Operator B required that participants should not use more than 60% of TS to purchase electronic equipment/peripherals); and
- (c) ***Vetting of applications.*** Participants needed to submit applications to the operator for using TS before making the purchases. The operator then vetted the applications.

Note 19: *According to information provided by LWB to LegCo in April 2013, participants' PDPs were mostly related to education (e.g. learning a language and joining a study tour), skills enhancement (e.g. sports training, and attending music or computer courses) and vocational training (e.g. attending beauty care and cooking classes).*

Note 20: *For the analysis, Audit examined TS records of 90 participants (i.e. 10 participants for each of the 8 NGO-run projects and 5 participants for each of the 2 school-based projects examined).*

Table 11**Control measures of 5 operators on the use of TS
(January 2012 to October 2018)**

Operator	Control measures adopted (Yes ✓/No ×)		
	Quotation requirement	Purchase limit	Vetting of applications
A	×	×	✓
B	✓	✓	✓
C	✓	×	✓
D	×	×	✓
E	×	×	×

Source: Audit analysis of project operator records

3.14 In Audit's view, the vetting of applications (see Table 11 in para. 3.13) was a good practice, which helped ensure the proper use of TS. The fact that Operator E had not adopted any control measures referred to in paragraph 3.13 on the use of TS was less than satisfactory.

3.15 Upon enquiry, in September 2019, SWD informed Audit that:

- (a) operators were required to monitor the implementation of short-term development targets in participants' PDPs. Operators might, on their own accord, set parameters on the use of TS as necessary; and
- (b) in 2017, for enhancing project implementation, 2 sharing sessions on good practices of CDF projects were organised (see items (2) and (3) in Table 18 in para. 4.17).

3.16 Audit considers that SWD needs to sustain efforts in identifying good practices among operators on the use of TS, and consider disseminating the good practices for wider adoption among operators.

Need to clearly lay down operators' responsibilities in relation to TS

3.17 SWD has set guidelines on handling TS:

- (a) according to SWD's "General Guides on drawing up PDP and use of TS in relation to the PDP", it is not a mandatory requirement that all TS should be spent in the third year of a project (Note 21); and
- (b) according to SWD's "General Guides on handling of unspent TS", upon completion of the three-year project period:
 - (i) if the participants and their parents decide not to continue implementing their PDPs, the unspent TS balances should be returned to the participants; and
 - (ii) if the participants and their parents want to continue implementing the PDPs after completion of the projects, the operators should discuss and come into mutual agreement with them on the way of handling the unspent TS.

3.18 For the 10 projects examined, Audit's analysis of operators' practices (see para. 3.13) also indicated that of the 5 operators, 3 operators (i.e. Operators A, D and E) (involving 5 projects) had returned all the unspent TS balances to participants and hence did not further monitor participants' use of TS beyond the project period (Note 22).

3.19 Audit noted that the 3 operators' practices (see para. 3.18), while allowed under the "General Guides on handling of unspent TS" (see para. 3.17(b)(i)), did not appear to be in line with another requirement set out in the "General Guides on drawing up PDP and use of TS in relation to the PDP", stipulating that operators have

Note 21: *According to SWD, there are circumstances where participants need to utilise TS after the three-year project period for achieving their PDPs. For example, for a participant whose PDP is to pursue a career as a bus driver, he/she may not need to spend any TS on driving training until he/she reaches 18 years old.*

Note 22: *For Operators B and C, they continued to monitor the use of TS after the project period.*

Implementation of projects

the responsibility and discretion to carefully assess and ensure that participants' plans of spending TS beyond the third year are reasonable and necessary for their PDPs.

3.20 Upon enquiry, in September 2019, SWD clarified that operators had the responsibility and discretion under the aforementioned requirement (see para. 3.19) only when drawing up PDPs with participants within the three-year project period.

3.21 For the avoidance of doubt, Audit considers that SWD needs to clearly lay down operators' responsibilities in relation to spending TS beyond the project period.

Audit recommendations

3.22 **Audit has *recommended* that the Director of Social Welfare should:**

- (a) **step up efforts in ensuring project operators' compliance with requirements in the service agreements during project delivery;**
- (b) **consider issuing guidelines to set out the principles of using training provisions;**
- (c) **sustain efforts in identifying good practices among operators on the use of TS, and consider disseminating the good practices for wider adoption among operators; and**
- (d) **clearly lay down operators' responsibilities in relation to spending TS beyond the project period.**

Response from the Government

3.23 The Director of Social Welfare agrees with the audit recommendations. He has said that SWD will:

- (a) continue to closely monitor the implementation of CDF projects and review the site inspection arrangement, with a view to facilitating identification of

and timely follow-up on any irregularities or non-compliant cases during project delivery;

- (b) devise a guideline setting out general principles to facilitate effective use of training provisions by operators;
- (c) issue and disseminate a Guidebook to operators for reference on good practices of implementing CDF projects, including the monitoring of the use of TS, and continue to identify good practices among operators for enhancing project implementation; and
- (d) for the avoidance of doubt and misunderstanding, refine the guidelines to make it clear that:
 - (i) during the third year of the project period, operators have the responsibility to assess whether the participants' proposed plans of spending TS after the three-year project period, if any, are reasonable and necessary for the implementation of their PDPs; and
 - (ii) after the three-year project period, operators are not obliged to but may continue to keep the unspent TS for participants for continued implementation of PDPs upon mutual agreement with the participants and their parents.

Financial monitoring of projects

3.24 Operators are required to submit audited financial reports (Note 23) on CDF projects. The due dates of submission are set out in service agreements.

Note 23: *The auditor of the operator shall express an opinion on whether the financial reports have been properly prepared from the books of accounts and in accordance with the requirements of the service agreement in all material aspects, and whether the expenditure incurred is made in accordance with the service agreement.*

Implementation of projects

Need to ensure timely submission of reports

3.25 Audit analysed the timeliness of submission of audited financial reports for the 83 completed CDF projects (see also Note 12 to para. 1.16(a)). Audit noted that, as at 31 July 2019, of the 295 reports required to be submitted (Note 24), 247 (84%) reports had been overdue, with delays ranging from 1 to 1,092 days (averaging 229 days). Table 12 shows the extent of delays.

Table 12

**Delays in submission of
audited financial reports for 83 completed CDF projects
(31 July 2019)**

Type of projects	No. of projects	No. of reports		Delay	
		Required to be submitted	Overdue	Range (day)	Average (day)
NGO-run	66	237	205 (86%)	1 to 1,013	224
School-based	17	58	42 (72%)	4 to 1,092	254
Overall	83	295	247 (84%) (Note)	1 to 1,092	229

Source: Audit analysis of SWD records

Note: Included in the 247 overdue reports were 16 reports, which were still outstanding as at 31 July 2019. These 16 reports had been overdue for 92 to 1,003 days (averaging 268 days).

3.26 Audit further noted that, for the 10 projects examined (see para. 3.2), SWD had not taken adequate follow-up actions on delay cases:

Note 24: *For the earlier batches of projects, operators were required to submit 4 audited financial reports. Starting from the 5th batch of NGO-run and the 2nd batch of school-based projects, operators were required to submit 3 audited financial reports.*

- (a) of the 30 delayed submissions in these 10 projects, written reminders were not issued in 24 (80%) cases; and
- (b) as stated in the service agreements, the Government reserved the right to withhold payment of funding provisions if operators failed to submit reports in accordance with the due dates. However, withholding of payment had not been executed.

3.27 Upon enquiry, in September 2019, SWD informed Audit that advance reminders of the upcoming submission were sent to operators, whereas reminders on overdue reports were mainly given through telephone calls and/or e-mails.

3.28 In Audit's view, delays in the submission of audited financial reports would hamper SWD's financial monitoring of CDF projects, and hinder the clawing back of surplus funding provisions (see paras. 3.30 to 3.32).

3.29 Audit considers that SWD needs to closely monitor any delays in the submission of audited financial reports, and take adequate follow-up actions on delay cases.

Need to ensure timely clawing back of surplus funds

3.30 According to SWD's practices, audited financial reports are passed to its Finance Branch for review and vetting (Note 25). Consequent upon the review and vetting, SWD's CDF Office will issue letters to CDF operators demanding refund of any surplus funds (hereinafter referred to as demand notes). According to the service agreements, operators shall return all the surplus funds to the Government within 14 days from the date of the demand note issued by the Government.

Note 25: *According to SWD, operators are required to revise and re-submit audited financial reports to SWD if non-compliance with reporting requirements is found.*

Implementation of projects

3.31 For the 10 projects examined, final audited financial reports indicated surplus funds in 6 projects (Note 26). Audit noted that these surplus funds had not been clawed back promptly. Table 13 shows that considerable time (e.g. 956 days for Project 1) had been taken to complete the review of the audited financial reports. As at 31 July 2019, of the 6 projects, only 2 projects (Projects 1 and 2) had the surplus funds clawed back, while the clawing back for 4 projects (Projects 3 to 6) was yet to be done.

Note 26: *As at 31 July 2019, of the 10 projects, 9 had submitted their audited financial reports for the final year of the project period (i.e. final audited financial reports). The reports indicated surplus funds in 6 projects and deficits in 3 projects.*

Table 13

**Clawing back of surplus funds in 6 projects
(31 July 2019)**

Project	Submission due date of audited financial report	Submission of report (a) (No. of days after submission due date)	Completion of review of report by Finance Branch (Note 1) (b) (No. of days after submission of report)	Issue of demand note (c) (No. of days after completion of review of report by Finance Branch)	Total (d) = (a) + (b) + (c) (No. of days)
<i>Demand note issued</i>					
1	30.4.2015	4	956	18	978
2	31.3.2017	217	195	25	437
<i>Demand note not yet issued</i>					
3	31.3.2017	104	748 (Note 2)	Outstanding	852
4	31.12.2018	29	183	Outstanding	212
5	31.3.2019	16	106	Outstanding	122
6	30.4.2019	77	15 (Note 3)	Outstanding	92

Source: Audit analysis of SWD records

Note 1: Where the review was not yet completed, figures in this column refer to the time lapse between the submission of report and 31 July 2019.

Note 2: According to SWD, the review of report was subsequently completed on 28 August 2019.

Note 3: According to SWD, the review of report was subsequently completed on 23 September 2019.

Remarks: Based on the final audited financial reports, the surplus funds to be clawed back for the 6 projects totalled some \$657,000.

Implementation of projects

3.32 Audit considers that SWD needs to look into the reasons for the long time taken to claw back surplus funds from individual operators, and take measures to expedite the clawing back of surplus funds.

Audit recommendations

3.33 **Audit has *recommended* that the Director of Social Welfare should:**

- (a) **closely monitor any delays in the submission of audited financial reports, and take adequate follow-up actions on delay cases; and**
- (b) **look into the reasons for the long time taken to claw back surplus funds from individual operators, and take measures to expedite the clawing back of surplus funds.**

Response from the Government

3.34 The Director of Social Welfare agrees with the audit recommendations. He has said that SWD:

- (a) will continue to closely monitor any delays in the submission of audited financial reports and take enhanced measures to tighten the monitoring; and
- (b) recognises the need to claw back surplus funds for CDF projects as soon as practicable:
 - (i) the reporting requirements for different batches vary. For the early batches of CDF projects, the audited financial reports in the same batch were first gathered and scrutinised by CDF Office before they were sent to Finance Branch in one go, for the sake of facilitating consistency of review. As such, any late submission of reports by the operators would affect the processing time of other audited financial reports in the same batch;
 - (ii) apart from taking time to follow up the outstanding audited financial reports within the same batch, SWD took considerable time to

clarify with the operators, back and forth, the unclear format or inaccurate figures in the audited financial reports. It was not uncommon that the operators took a long time to revise or re-submit the audited financial reports; and

- (iii) SWD will review the workflow between CDF Office and Finance Branch, provide more guidance to facilitate operators in preparing audited financial reports and take enhanced measures to tighten the monitoring on late submission of audited financial reports.

Attainment of intended outputs and outcomes

3.35 For each CDF project, the service agreement stipulates the output and outcome indicators, as well as the standards agreed for each indicator (see para. 1.10). Operators report to SWD the progress of meeting these standards through the submission of quarterly and yearly statistical returns.

Need to improve attainment of intended outputs and outcomes

3.36 For the 83 completed projects (see also Note 12 to para. 1.16 (a)), there were 10 or 11 indicators stipulated in their service agreements (Note 27) totalling 895 indicators in aggregate. Audit noted that, of the 895 indicators, the agreed standards had not been attained for 136 (15%) indicators (see Table 14).

Note 27: *Output standards and outcome standards were subject to amendments by SWD from time to time. For each project launched in or after 2014, 9 output standards and 2 outcome standards were stipulated.*

Implementation of projects

Table 14

**Attainment of output standards and outcome standards
for 83 completed projects
(January 2012 to October 2018)**

Indicator	Total no. of indicators		
	Stipulated for the 83 completed projects	Standard attained	Standard not attained
<i>Output indicator (see Appendix C)</i>			
1. Total no. of participants	83	77 (93%)	6 (7%)
2. Amount of matching fund	83	83 (100%)	0 (0%)
3. Total no. of mentors	83	82 (99%)	1 (1%)
4. Total no. of participants who have worked out PDPs at the end of the second year of the project (Note 1)	65	54 (83%)	11 (17%)
5. Total no. of core programmes for participants & attendance	83	74 (89%)	9 (11%)
6. Total no. of core programmes for parents & attendance	83	70 (84%)	13 (16%)
7. Total no. of core programmes for mentors & attendance	83	60 (72%)	23 (28%)
8. Total no. of sharing sessions & attendance	83	55 (66%)	28 (34%)
9. Total no. of gatherings between mentors and participants	83	44 (53%)	39 (47%)
<i>Outcome indicator (see para. 1.10(c))</i>			
1. Participants completed the two-year savings plan	83	82 (99%)	1 (1%)
2. Participants achieved PDPs and using some TS (Note 2)	83	78 (94%)	5 (6%)
Overall	895	759 (85%)	136 (15%)

Source: Audit analysis of SWD records

Note 1: Output standards and outcome standards are subject to amendments by SWD from time to time. Item 4 of the output indicators was not applicable to the first 3 batches of NGO-run projects.

Note 2: For the first 3 batches of NGO-run projects, this outcome indicator only took into account the proportion of participants who had achieved the short-term targets of PDPs.

3.37 Audit further noted that of the 83 completed projects, 26 (31%) projects had attained all output standards and outcome standards, while the remaining 57 (69%) projects had only attained some of the standards, including 3 projects with less than half of the standards attained.

3.38 In Audit's view, there is room for improvement in the attainment of output standards and outcome standards in individual projects. Audit considers that SWD needs to closely monitor the attainment of output and outcome standards of projects, with a view to taking timely and effective remedial actions (see paras. 3.39 to 3.41).

Need for adequate remedial actions

3.39 According to SWD's internal guideline, for projects which do not attain the output standards and/or outcome standards, the following follow-up actions will be taken:

- (a) operators are required to work out an improvement plan for each of the unmet standard;
- (b) SWD will keep in view the progress of operators' implementation of the improvement plans;
- (c) if there is persistently poor or suspected problem performance, SWD will consider initiating an on-site assessment for in-depth examination of the problem and taking more vigorous monitoring measures as appropriate; and
- (d) at the end of the project, SWD will issue a letter to the operator requesting a written explanation on the under-performance for record.

3.40 Audit examined the 3 projects which had attained less than half of the standards (see para. 3.37). Audit noted that follow-up actions of SWD were less than satisfactory. Case 1 shows one of these cases.

Case 1

Following up the non-attainment of output standards (2015 to April 2019)

1. Operator F ran a CDF project from July 2015 to June 2018. Every year, Operator F submitted a return, reporting the attainment of agreed standards for the 12-month period ended 30 June of the year. The report was required to be submitted by 15 July every year (Note).
2. In the 1st yearly return (for the period ended 30 June 2016), it was reported that 5 output standards had not been met. In March 2017 (i.e. more than 8 months after the reporting period), SWD requested Operator F to submit an improvement plan.
3. In the 2nd yearly return (for the period ended 30 June 2017), it was reported that 6 output standards had not been met. In May 2018 (i.e. more than 10 months after the reporting period), SWD requested and Operator F submitted an improvement plan.
4. In June 2018, 1 month after requesting Operator F to submit the improvement plan, the project ended.
5. In April 2019, after the project had ended, SWD requested Operator F to submit written explanations for not meeting the standards for 4 indicators. In fact, according to the yearly returns submitted by Operator F, it had failed to meet the standards for 6 indicators instead of 4.

Audit comments

6. In 2016 and 2017, SWD did not request Operator F to submit an improvement plan until more than 8 months and 10 months had elapsed since the period ended. SWD's follow up action should have been speeded up. In 2019, SWD requested Operator F to submit a written explanation for not meeting the standards in 4 indicators, instead of 6 indicators. SWD's follow-up action was not adequate.
7. Despite not meeting the standards in many indicators, SWD did not step up monitoring measures on the project (see para. 3.39(c)).

Source: Audit analysis of SWD records

Note: SWD records did not show the actual dates of submission of the reports.

3.41 Audit considers that SWD needs to ensure that adequate remedial actions are taken on projects which fail to meet the output and/or outcome standards.

Audit recommendations

3.42 **Audit has *recommended* that the Director of Social Welfare should:**

- (a) **closely monitor the attainment of output and outcome standards of projects; and**
- (b) **ensure that adequate remedial actions are taken on projects which fail to meet the standards.**

Response from the Government

3.43 The Director of Social Welfare agrees with the audit recommendations. He has said that:

- (a) it is SWD's established practice to monitor service performance through requiring operators with unmet output standards and/or outcome standards to provide improvement plans after reviewing their yearly returns. SWD will expedite the process of obtaining improvement plans from the operators concerned with a view to tightening the monitoring; and
- (b) SWD will consider taking further follow-up actions to monitor operators who persistently fail to meet the output standards and/or outcome standards.

PART 4: GOVERNANCE AND OTHER ADMINISTRATIVE MATTERS

4.1 This PART examines governance and other administrative matters of CDF, focusing on:

- (a) governance issues (paras. 4.2 to 4.13);
- (b) publicity and other supporting activities (paras. 4.14 to 4.28); and
- (c) way forward (paras. 4.29 to 4.36).

Governance issues

4.2 SCCDF has been set up to steer the design, and to oversee and monitor the implementation of CDF. SCCDF holds meetings 1 to 3 times a year. The Vetting Committee considers proposals from interested NGOs and schools for CDF projects, and assesses the quality aspects of applications. Meetings of the Vetting Committee are held on a need basis. In 2018-19, 2 SCCDF meetings and 1 Vetting Committee meeting were held (Note 28).

Need to keep SCCDF informed of progress of CDF projects

4.3 For the monitoring of CDF, a range of information was provided to SCCDF. Records indicated that, as at 30 June 2019, 3 types of key information had been provided for individual batches of CDF projects:

- (a) ***Output indicators.*** LWB submitted statistics on the 9 output indicators (see Appendix C);

Note 28: *The 2 SCCDF meetings had an overall attendance rate of 83% (rates for individual meetings were 80% and 87%). The Vetting Committee meeting had an attendance rate of 100%.*

- (b) ***Outcome indicators.*** LWB submitted statistics on the 2 outcome indicators (see para. 1.10(c)); and
- (c) ***Other project-related information.*** SWD invited project operators to give presentations on project progress at SCCDF meetings. From time to time, new performance indicators were set for project outputs and outcomes, and existing indicators were amended. LWB provided information on the new and amended indicators for SCCDF's information and deliberation.

Tables 15 and 16 show the key information provided for individual batches of projects launched up to June 2019.

Table 15

**Key information provided to SCCDF
(for NGO-run projects launched up to June 2019)**

Key information	Key information submitted/ presentation given for the batch (Yes ✓/No ×)						
	Batch						
	1	2	3	4	5	6	7
<i>Output indicator (see Appendix C)</i>							
Total no. of participants	✓	✓	✓	✓	✓	×	×
Amount of matching fund	✓	✓	✓	×	×	×	×
Total no. of mentors	✓	✓	✓	✓	✓	×	×
Total no. of participants who have worked out PDPs	N.A. (Indicator not yet adopted)			×	×	N.A. (Projects in progress)	
Indicators on core programmes, sharing sessions and gatherings/communication occasions (5 indicators in total)	✓	✓	×	×	×		
<i>Outcome indicator (see para. 1.10(c))</i>							
Proportion of participants who can complete the two-year savings plan	✓	✓	×	×	×	N.A. (Projects in progress)	
Proportion of participants who can achieve short-term targets of PDPs with utilisation of some TS in the third year (Note 1)	✓	✓	×	×	×		
<i>Other project-related information</i>							
Presentations on projects by operators	✓	✓	×	×	×	×	×
Setting of new performance indicators	✓	✓	N.A. (Note 2)	×	N.A. (Note 2)		
Amendments of existing performance indicators	N.A. (Note 2)		✓	✓	×	N.A. (Note 2)	

Source: Audit analysis of LWB and SWD records

Note 1: For the first 3 batches of projects, this outcome indicator only took into account the proportion of participants who had achieved the short-term targets of PDPs.

Note 2: There was no setting of new indicators and no amendments of existing indicators for these batches.

Table 16

**Key information provided to SCCDF
(for school-based projects launched up to June 2019)**

Key information	Key information submitted/ presentation given for the batch (Yes ✓/No ×)				
	Batch				
	1	2	3	4	5
<i>Output indicator (see Appendix C)</i>					
Total no. of participants	✓	✓	✓	×	×
Amount of matching fund	✓	×	×	×	×
Total no. of mentors	✓	✓	×	×	×
Total no. of participants who have worked out PDPs	✓	×	N.A. (Projects in progress)		
Indicators on core programmes, sharing sessions and gatherings/communication occasions (5 indicators in total)	✓	×			
<i>Outcome indicator (see para. 1.10(c))</i>					
Proportion of participants who can complete the two-year savings plan	✓	×	N.A. (Projects in progress)		
Proportion of participants who can achieve short-term targets of PDPs with utilisation of some TS in the third year	✓	×			
<i>Other project-related information</i>					
Presentations on projects by operators	✓	×	×	×	×
Setting of new performance indicators	×	N.A. (Note)			
Amendments of existing performance indicators	✓	×	N.A. (Note)		

Source: Audit analysis of LWB and SWD records

Note: There was no setting of new indicators and no amendments of existing indicators for these batches.

Governance and other administrative matters

4.4 As can be seen from Tables 15 and 16, insofar as the key information was concerned, less information was provided to SCCDF as more batches of projects were implemented over the years. Audit noted that while all key information was provided to SCCDF on the 1st and 2nd batches of NGO-run projects, less key information was provided on subsequent batches of NGO-run projects. For school-based projects, while key information was generally provided to SCCDF on the 1st batch of the projects, no key information was provided on the 4th and 5th batches of school-based projects.

4.5 Upon enquiry, in September and October 2019, LWB explained that:

- (a) in view of the pilot nature of projects, more information was provided to SCCDF for the first 2 batches of NGO-run projects and the first batch of school-based projects; and
- (b) as more batches of projects were implemented, the focus of materials presented to SCCDF had changed to, for example, reporting key changes of CDF and other relevant issues, having regard to the experience gained in implementing more batches of CDF projects.

4.6 In Audit's view, keeping SCCDF informed of the progress of each batch of projects facilitates its effective monitoring of CDF. To ensure that the materials and information presented can keep up with any changes in SCCDF's information need, LWB should continue to take measures (see para. 4.5(b)) to keep SCCDF appropriately informed of the progress of CDF projects.

Room for improving practices on declaration of interests

4.7 LWB and SWD have laid down guidelines on handling conflicts of interest. The guidelines require SCCDF members and Vetting Committee members to declare actual, potential or perceived conflicts of interest:

- (a) ***Time to make declarations.*** The key requirements are:

- (i) **SCCDF.** Where a member has potential conflicts of interest in a matter placed before the committee, he/she should make full disclosure of his/her interest; and
 - (ii) **Vetting Committee.** Each vetting exercise is conducted through one or more committee meetings. Before the commencement of a vetting exercise, members should make declarations to confirm that they have no conflicts of interest (Note 29). Where a member becomes aware of any conflicts of interest in the course of the vetting exercise, he/she should make a declaration immediately; and
- (b) ***Procedures on handling cases of declared interests.*** The key requirements are:
- (i) for both SCCDF and the Vetting Committee, where a member declares conflicts of interest at a meeting, the chairman should decide whether the member may speak or vote on the matter, may remain in the meeting as an observer, or should withdraw from the meeting; and
 - (ii) all cases of declaration made at meetings should be recorded in minutes of meetings.

4.8 Audit noted one case where an SCCDF member's declaration of interests had not been recorded in the minutes of meeting as required (see Case 2).

Note 29: *To make declarations, members complete and sign a declaration form. LWB records indicated that, as at 30 June 2019, all members had declared that they did not have any conflicts of interest.*

Case 2

Declaration of interests not recorded in minutes of meeting (2018)

1. In December 2018, LWB proposed and reviewed the list of strategic partners, with a view to better recognising the efforts of organisations that had contributed significantly to CDF. At an SCCDF meeting held in the month, the criteria for inclusion as strategic partners and the nomination of 4 organisations (including Organisation X) as strategic partners were discussed. A total of 13 committee members (including Member A) attended the meeting.

2. After deliberation, the criteria for inclusion were endorsed. Accordingly, in March 2019, Organisation X and 2 other organisations were included as strategic partners.

3. According to the information published on the website of Organisation X, Member A was a committee member of Organisation X at the time of the SCCDF meeting. According to LWB's guidelines, potential conflicts of interest should be declared where:

- (a) a committee member of SCCDF had assumed directorship in, entered into partnership with or taken up an advisory role in a club, association, union or organisation; and
- (b) the club, association, union or organisation was connected with, or was the subject of, a matter under consideration by the committee.

4. Minutes of the SCCDF meeting did not indicate that Member A had declared her affiliation with Organisation X. Upon enquiry, LWB informed Audit in October 2019 that Member A had declared her affiliation with Organisation X at the beginning of the meeting.

Audit comments

5. Member A's declaration of potential conflicts of interest had not been recorded in the minutes of meeting, contrary to LWB's requirement (see para. 4.7(b)(ii)).

Source: Audit analysis of LWB records and Organisation X website

4.9 Audit also noted that the Secretary for Home Affairs issued a memorandum in 2005, entitled “Advisory and Statutory Bodies — Declaration of Interests”. According to the memorandum, the 2 systems for declaration of interests are:

- (a) ***One-tier reporting system.*** When a member of a board or committee perceives a potential conflict of interest in a matter placed before the board or committee, he/she should make a full disclosure of his/her interest; and
- (b) ***Two-tier reporting system.*** This system applies to boards and committees with extensive powers over policy or financial matters. Under the system, members should disclose their general pecuniary interests on appointment to these boards and committees and annually thereafter, in addition to the report of conflicts of interest as and when they arise.

By the memorandum, bureaux and departments are reminded to review from time to time the system for declaration of interests for the advisory and statutory bodies under their purview, so as to ensure the system matches the needs of the body concerned.

4.10 In this regard, Audit noted that the system for declaration for SCCDF is a one-tier reporting system. Records did not show that LWB had reviewed, from time to time, SCCDF’s system for declaration of interests having regard to the memorandum of 2005. As regards the Vetting Committee, upon enquiry in September 2019, SWD informed Audit that it was not an advisory and statutory body referred to in the memorandum. The memorandum was therefore not applicable to the Vetting Committee, but declarations would still be made by members of the Vetting Committee if there were conflicts of interest.

4.11 Audit considers that LWB should record declaration of interests made by committee members in minutes of meetings, as required by LWB guidelines. LWB also needs to review, having regard to the memorandum issued by the Secretary for Home Affairs, the system for declaration of interests for SCCDF as necessary.

Audit recommendations

4.12 **Audit has *recommended* that the Secretary for Labour and Welfare should:**

- (a) **continue to take measures to keep SCCDF appropriately informed of the progress of CDF projects;**
- (b) **record declaration of interests made by committee members in minutes of meetings; and**
- (c) **review, having regard to the memorandum issued by the Secretary for Home Affairs in 2005, the system for declaration of interests for SCCDF as necessary.**

Response from the Government

4.13 The Secretary for Labour and Welfare agrees with the audit recommendations. He has said that LWB will:

- (a) continue to keep SCCDF informed of the progress of CDF projects for monitoring CDF;
- (b) record declaration of interests made by committee members in minutes of meetings; and
- (c) review the system for declaration of conflicts of interest for SCCDF from time to time having regard to the memorandum issued by the Secretary for Home Affairs in 2005.

Publicity and other supporting activities

4.14 In support of CDF, a range of activities are conducted. According to LWB records, these activities comprised general publicity activities for raising the community's awareness of CDF, targeted promotion for engaging stakeholders and

partners, and value-added activities for widening participants' horizons. Table 17 shows the key activities conducted in 2018.

Table 17

**Publicity and other supporting activities of CDF
(2018)**

Key activity	No.
<i>General publicity activity</i>	
Leaflets and posters distributed	54,045
Video clips posted on CDF website and social media platforms (e.g. Facebook and Instagram)	85
<i>Targeted promotion</i>	
Ceremony	1
Sharing/collaboration session with project operators	1
Publication of newsletter	1
<i>Value-added activity</i>	
Visits and experiential programmes	16
Art and cultural activities	3
Financial and life planning programmes	12

Source: Audit analysis of LWB records

Need to step up promotion efforts

4.15 LWB has from time to time commissioned consultancy studies on CDF (see para. 4.31). In the consultancy study completed in March 2017, a recommendation was to step up publicity and promotion efforts to increase the awareness of CDF projects in schools and among school teachers.

Governance and other administrative matters

4.16 Records indicated that, in March 2017, SCCDF was informed of the follow-up actions which would be taken on the above recommendation:

- (a) *Stepping up promotion among schools.* LWB and SWD would explore opportunities to reach out to teachers and principals via related bodies (e.g. associations of teachers, associations of heads of schools, and school councils), to encourage more schools to consider becoming CDF operators and referring eligible students to join CDF projects; and
- (b) *Sharing experience among operators.* Annual meetings with representatives of operators would be organised to exchange ideas and practices on running CDF projects. Experience sharing sessions for teachers and school principals would also be arranged. CDF newsletters would be used to publicise good practices.

4.17 Upon enquiry, in August 2019, LWB and SWD informed Audit of the progress of the follow-up actions. According to LWB and SWD, 4 sharing/collaboration sessions had been arranged for NGOs and schools (see Table 18).

Table 18

**Sharing/collaboration sessions arranged for NGOs and schools
(March 2017 to August 2019)**

	Date	Nature of session	No. of participating NGOs/schools	No. of attendees from participating organisations
1.	March 2017	Experience sharing session	2 NGOs and 31 schools	40
2.	September 2017	Sharing session on good practices of CDF projects	29 NGOs	65
3.	October 2017	Sharing session on good practices of CDF projects	22 schools	28
4.	February 2018	Collaboration meeting (Note)	25 NGOs and 22 schools	76

Source: Audit enquiry and information provided by LWB and SWD

Note: The activities included: (a) briefing by SWD on CDF; (b) sharing by 2 school operators and their NGO partners of their partnership experience; (c) question and answer session; (d) group discussion in sharing attendees' experiences and to explore collaboration on operating CDF projects; and (e) networking among attendees.

4.18 Audit noted that, as at 15 August 2019:

- (a) about 17 months had elapsed since a sharing/collaboration session was last held in February 2018 (see Table 18 in para. 4.17). However, no further sharing/collaboration sessions had been held for NGOs and schools; and
- (b) about 28 months had elapsed since SCCDF was informed of the intended follow-up actions in March 2017 (see para. 4.16). However, teachers and principals had not been reached out via related bodies as intended.

4.19 Upon enquiry, in September 2019, LWB and SWD informed Audit that although teachers and principals of schools had not yet been reached out via related bodies, principals and schools not operating school-based projects had been reached

out through the experience sharing session held in March 2017 and the collaboration meeting held in February 2018.

4.20 In Audit's view, given the limited number of attendees at the experience sharing session and the collaboration meeting, there is merit in exploring opportunities to reach out to more schools (e.g. via related bodies).

4.21 In this connection, Audit also noted that there were occasions of no applications for running CDF projects from NGOs in some individual districts (see para. 2.24) and that only a limited number of schools had so far submitted applications for CDF projects (see para. 2.30).

4.22 Audit considers that LWB and SWD should, in consultation with the Education Bureau, take measures to step up efforts in promoting CDF (e.g. organising sharing/collaboration sessions more frequently) among NGOs and schools.

Need to sustain efforts in arranging value-added activities

4.23 Value-added activities are organised to help participants in CDF projects widen their horizons, and to help them make informed life and career planning (see para. 1.7(b)). According to LWB, these activities have been welcome by project operators and participants.

4.24 In 2015, LWB informed the LegCo Panel on Welfare Services that it would step up efforts in arranging value-added activities. Table 19 shows that from 2014 to 2018, there was an overall increase in both the total number of value-added activities and the total number of participants in the activities:

- (a) the total number of value-added activities increased from 5 (2014) by 520% to 31 (2018); and
- (b) the total number of participants increased from 130 (2014) by 1,418% to 1,973 (2018).

Table 19

**Value-added activities arranged for CDF participants
(2014 to 2018)**

Type of activities	2014	2015	2016	2017	2018
<i>No. of events</i>					
Visits and experiential programmes (Note 1)	5	3	34	16	16
Art and cultural activities (Note 2)	—	8	3	8	3
Financial and life planning programmes (Note 3)	—	—	1	1	12
Total	5	11	38	25	31
<i>No. of participants</i>					
Visits and experiential programmes	130	470	1,690 (Note 4)	491	958
Art and cultural activities	—	457	350	1,585 (Note 5)	357
Financial and life planning programmes	—	—	50	526	658
Total	130	927	2,090	2,602	1,973

Source: Audit analysis of LWB records

Note 1: Visits and experiential programmes allowed participants to gain insight into different industries and professions, which might give them inspiration for their long-term development.

Note 2: Art and cultural activities provided participants with opportunities to explore interests in art, music and cultures, and helped participants find out if they wished to pursue arts and culture as a career.

Note 3: Financial and life planning programmes helped equip participants with knowledge on financial management and life planning.

Note 4: According to LWB, a large number of visits to government departments and their facilities were arranged during the year (e.g. visiting the Customs and Excise Training School).

Note 5: According to LWB, large-scale performance and screenings were held during the year. In particular, support from an organisation was enlisted, which helped many (about 760) participants attend classical music concerts.

Governance and other administrative matters

4.25 Against the overall increase in both the number of value-added activities and the number of participants over the years, Audit noted that:

- (a) the total number of value-added activities had dropped from its peak of 38 in 2016, by 18% to 31 in 2018; and
- (b) the total number of participants in the activities had also dropped, from its peak of 2,602 in 2017, by 24% to 1,973 in 2018.

In Audit's view, it is important that efforts in arranging value-added activities is sustained.

4.26 Audit considers that LWB should take measures (e.g. calling for support from government departments and organisations to arrange value-added activities — see Notes 4 and 5 to Table 19 in para. 4.24) to sustain the efforts in arranging value-added activities for CDF participants.

Audit recommendations

4.27 **Audit has *recommended* that the Secretary for Labour and Welfare should:**

- (a) **in collaboration with SWD and in consultation with the Education Bureau, take measures to step up efforts in promoting CDF among NGOs and schools; and**
- (b) **take measures to sustain the efforts in arranging value-added activities for CDF participants.**

Response from the Government

4.28 The Secretary for Labour and Welfare agrees with the audit recommendations. He has said that LWB:

- (a) has from time to time collaborated with SWD in organising sharing sessions for NGOs and schools. For sharing sessions for schools, the Education Bureau has helped disseminate the details of these sessions to principals and teachers. LWB, in collaboration with SWD and the Education Bureau, where applicable, will continue to take measures to step up efforts in promoting CDF among NGOs and schools; and
- (b) will take measures to sustain its efforts in arranging value-added activities for CDF participants.

Way forward

4.29 Set up in 2008 and having a total financial commitment of \$900 million, CDF is expected to benefit 30,000 underprivileged children under its projects, promoting their longer-term development with the ultimate aim of alleviating inter-generational poverty. While it will take time for the full impact of CDF to be seen, as at 30 June 2019, CDF had only launched projects for some 18,000 children. This audit review has found room for improvement in various areas:

- (a) ***Planning the launch of projects and commissioning project operators.*** As at 30 June 2019, CDF projects had yet to be launched for many (11,860) children. Notwithstanding that NGO-run projects were key projects which contributed to meeting the annual targets for new projects and new participants, they had not been launched regularly. The proportion of schools which had run CDF projects was also small (only some 5%). Updated information about the implementation of CDF and about the progress of launch of projects (e.g. the latest estimated number of participants, the time frame for launching projects for these participants, the latest number of children having benefitted from CDF projects, and the basis of assessing attainment of the annual target) could be better provided to LegCo (see PART 2);
- (b) ***Implementation of projects.*** In project delivery, there were cases where operators of CDF projects did not comply with requirements in service agreements. There were also varying practices among operators (e.g. on monitoring participants' use of TS), including some good practices which were worth disseminating for wider adoption. For financial monitoring, there were delays in the submission of financial reports from operators, hindering SWD's clawing back of surplus funding provisions. There was

Governance and other administrative matters

also room for improvement in attainment of project outputs and outcomes. Of the 83 completed projects examined by Audit, only 26 (31%) projects had attained all output standards and outcome standards (see PART 3); and

- (c) ***Governance and other administrative matters.*** There was room for stepping up efforts in promoting CDF among NGOs and schools (see PART 4).

4.30 Some LegCo Members and the public have expressed concerns about CDF. An area of concern was that CDF participants might not be those having the most imminent need. According to media reports and LegCo Members' enquiries, since participation in CDF projects was voluntary, participants would likely to be those who were self-motivated. This would leave the relatively passive children outside CDF projects, who would actually be the ones having the most imminent need to plan for their future. In this regard, Audit noted that SCCDF had been informed that more schools would be encouraged to consider becoming CDF operators, so as to refer more eligible students to join CDF projects (see para. 4.16(a)).

4.31 From time to time, LWB has commissioned consultancy studies on CDF:

- (a) in 2012, a "Consultancy Study on CDF Pioneer Projects" was completed. It found that CDF had helped create favourable conditions for participants to overcome inter-generational poverty;
- (b) in 2017, a "Study on the Longer Term Development of CDF Project Participants" was completed. It found that CDF projects could effectively enhance underprivileged children's ability to combat poverty; and
- (c) in 2017, a "Further Study on the Long Term Development of CDF Project Participants" ("Further Study") was commissioned. In October 2019, the study was still in progress.

4.32 In the 2017 Policy Address, the Chief Executive announced the plan of setting up a Commission on Children (Note 30) to amalgamate the efforts made by relevant bureaux/departments and child concern groups, and focus on addressing children's issues as they grow. According to the Government's published information, the Commission would co-ordinate its work with existing platforms, which include the CDF.

4.33 Considerable experience has now been gained in implementing CDF projects for more than a decade since the setting up of CDF in 2008. In Audit's view, taking into account the experience gained over the years, it is worth re-examining by the Government some parameters of CDF (e.g. intended number of participants, time frame for launching projects, eligibility for projects, levels of funding for projects, duration of projects, and output and outcome standards).

4.34 According to the LWB's latest available information, the Further Study (see para. 4.31(c)) would not be completed until December 2019. Audit considers that LWB needs to keep in view the results of this consultancy study, and consider the way forward for CDF taking into account relevant factors including the results of this audit review, areas of public concern, the need for collaborating with relevant stakeholders (e.g. the Commission on Children — see para. 4.32), and Audit's view in paragraph 4.33.

Audit recommendation

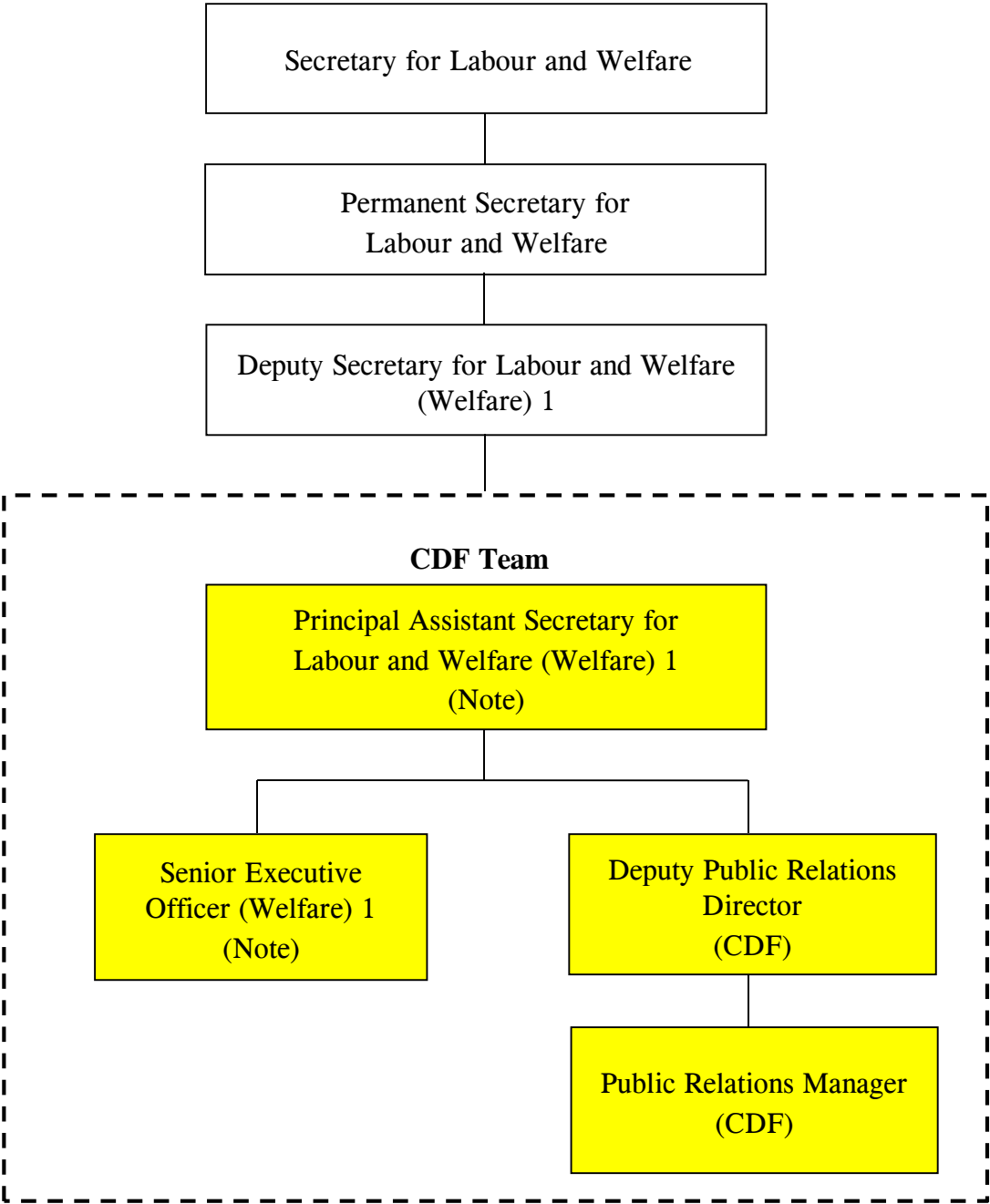
4.35 **Audit has recommended that the Secretary for Labour and Welfare should keep in view the results of the Further Study which is currently in progress, and consider the way forward for CDF taking into account other relevant factors, including the results of this audit review.**

Note 30: *The Commission on Children was established on 1 June 2018, with the Chief Secretary for Administration as the chairperson and the Secretary for Labour and Welfare as the vice-chairperson. The Commission had 30 other members, comprising 21 non-official members and 9 ex-officio members. The Director of Social Welfare is one of the ex-officio members.*

Response from the Government

4.36 The Secretary for Labour and Welfare agrees with the audit recommendation.

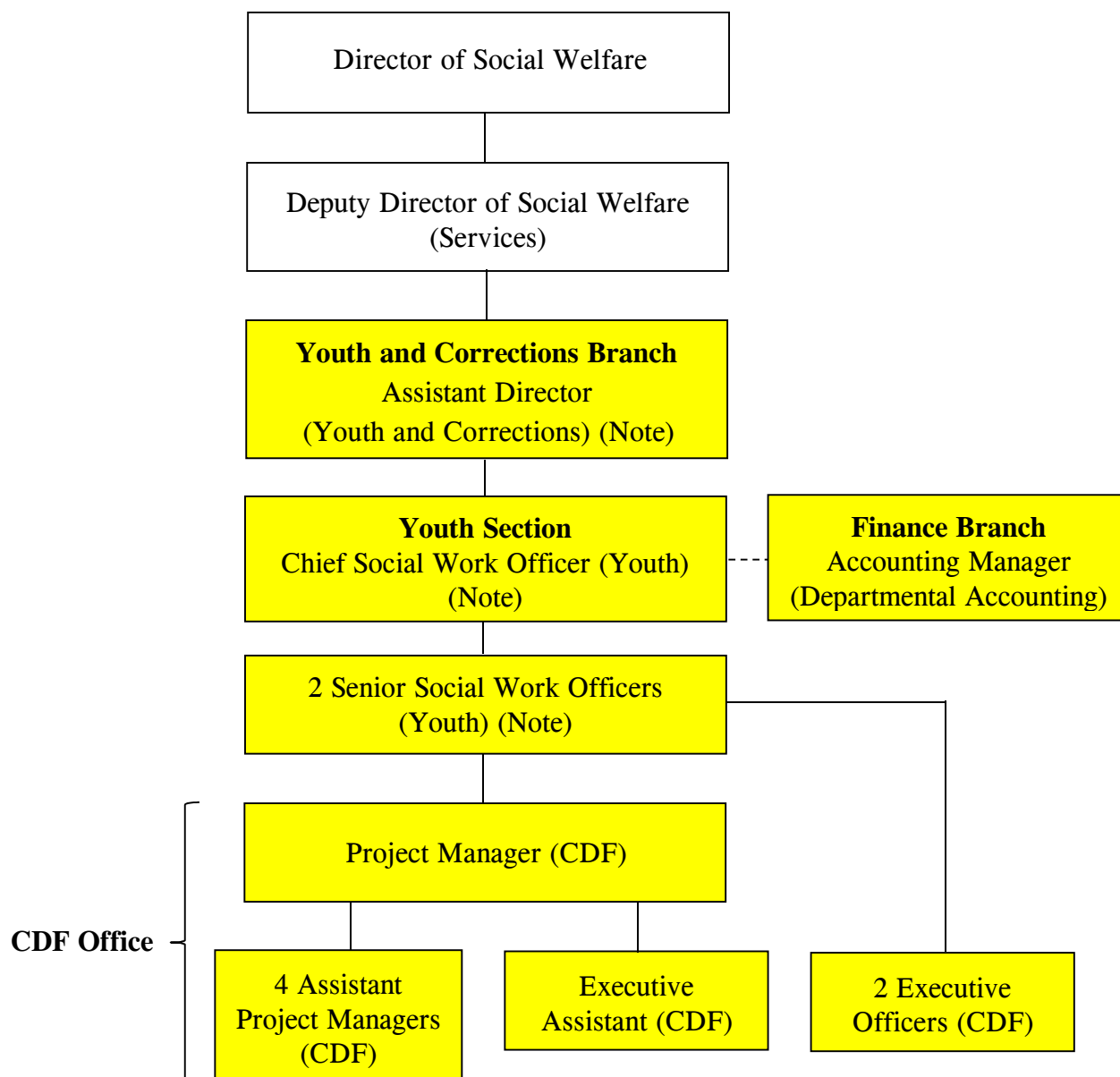
**Labour and Welfare Bureau:
Organisation chart (extract)
(31 March 2019)**



Source: LWB records

Note: The staff are responsible for the management of CDF among other duties relating to the functions of LWB.

**Social Welfare Department:
Organisation chart (extract)
(31 March 2019)**



Source: SWD records

Note: The staff are responsible for administering CDF projects among other work relating to youth and corrections.

Output indicators and standards
(for Child Development Fund projects launched in or after 2015)

Output indicator		Standard
1.	Total number of participants	NGO-run: ≥ 100 per project; aged 14 to 16 $\geq 50\%$ School-based: ≥ 50 per project
2.	Amount of matching fund	At or at least a “savings/donations” ratio of 1:1 for each participant
3.	Total number of mentors	At least a “mentors/mentees” ratio of 1:3
4.	Total number of participants who have worked out PDPs at the end of the second year of project	$\geq 80\%$ of participants
5.	Total number of core programmes provided to participants on training/community services opportunities	• 10 core programmes • $\geq 80\%$ of participants have attended at least 7 out of the 10 core programmes
6.	Total number of core programmes on training provided to parents/guardians to engage them in life planning and financial planning for participants	• 5 core programmes • $\geq 70\%$ of parents/guardians have attended not less than 4 out of the 5 core programmes
7.	Total number of core programmes provided to mentors on training and guidance	• 5 core programmes • $\geq 70\%$ of mentors have attended not less than 4 out of the 5 core programmes
8.	Total number of sharing sessions for participants, parents/guardians, mentors and donors, etc.	• Once a year for the first 2 years • $\geq 70\%$ attendance rate among all participants, parents/guardians, mentors and donors for each sharing session
9.	Total number of gatherings/communication occasions between mentors and participants	• Monthly gatherings/communication occasions between mentors and participants • In each month, $\geq 70\%$ of paired-up mentors/mentees have at least one time of gathering/communication

Source: SWD records

Remarks: Output indicators and standards are subject to amendments by SWD from time to time. This Appendix shows the prevailing indicators/standards applicable to projects operating at the time of audit.

Mandatory requirements for Child Development Fund project applications

Only applications having met all the requirements set out below shall be considered for quality assessment for CDF projects. At present, for each application, the mandatory requirements are:

- (a) the applicant and partner applicant (if any) must be:
 - (i) NGO-run projects: charitable organisations exempt from tax under section 88 of the Inland Revenue Ordinance (Cap. 112) in Hong Kong; or
 - (ii) School-based projects: a public sector school or a school under Direct Subsidy Scheme. Except for government schools, all applicant schools and partner schools must have a "certificate of registration" under section 3 of the Education Ordinance (Cap. 279);
- (b) the applicant and partner applicant have not applied/received and will not apply/receive any public funding (other than CDF) for the proposed projects;
- (c) the applicant NGO and partner NGO have a track record on the provision of children and youth services in Hong Kong in the past 5 years (applicable to NGO-run projects only);
- (d) the applicant NGO and partner NGO are applying to operate 2 consecutive projects in the same district (applicable to NGO-run projects under the "one-plus-one" approach only);
- (e) the proposed project comprises 3 major components, namely PDPs, mentorship programme and TS programme;
- (f) the proposed project:
 - (i) NGO-run projects: offers not less than 100 places. The proportion of participants aged 14 or above shall not be lower than 50%; or
 - (ii) School-based projects: offers not less than 50 places for Primary 4 to Secondary 4 students in the first school year of the project period;

Appendix D
(Cont'd)
(para. 2.19 refers)

- (g) the proposed project shall meet the minimum 1:3 mentor-to-mentee ratio;
- (h) the proposed project shall meet the 1:1 matching contribution ratio;
- (i) the application form is duly signed by:
 - (i) NGO-run projects: the Board Chairperson or Agency Head of the applicant;
or
 - (ii) School-based projects: the Principal of the applicant with school chop; and
- (j) the application is submitted in the prescribed application form before the deadline.

Source: SWD records

**Factors considered in quality assessment of
Child Development Fund project applications**

At present, quality assessment is based on the following factors relevant to the applicants:

Relevant experiences and venues

- (a) relevant experience in organising mentorship/personal development programmes for children and youth in Hong Kong in the past 5 years;
- (b) relevant experience in the provision of children and youth services in Hong Kong in the past 5 years (applicable to NGO-run projects only);
- (c) availability of site(s)/venue(s) in the serving district/area (applicable to NGO-run projects only);

Ability to recruit/retain target children/suitable mentors and deliver planned services

- (d) target number of and ability to recruit participants (applicable to NGO-run projects only);
- (e) ability/measures to recruit adequate mentors to meet the pledged mentor-to-mentee ratio;
- (f) ability to provide services/programmes/activities to participants, parents/guardians and mentors;
- (g) ability/measures to retain participants and mentors throughout the project period and to encourage their participation in trainings/community services/sharing sessions;
- (h) availability of support network, ability to establish and maintain effective network with other organisations in the district/area in operating the project;

Ability to secure matching contributions

- (i) ability to seek 1:1 matching contributions from available network, corporate and/or individual donors;

Financial management

- (j) ability to monitor the accounts of participants and donations received;

Human resource management

- (k) mechanism to handle complaints related to the project;
- (l) ability to recruit/deploy suitable staff personnel with relevant experience to implement and monitor the project;

Added-value measures relating to service performance and monitoring

- (m) ability to provide overall project evaluation/monitoring, and on use of information technology;
- (n) achievement level of required output/outcome indicators and/or availability of additional indicators;

Project synergy

- (o) synergy in implementing 2 consecutive CDF projects (applicable to NGO-run projects under the “one-plus-one” approach only);
- (p) ability and plan to leverage on available resource/network to schools to facilitate operation of the project (applicable to school-based projects only); and

Bridging arrangement

- (q) ability to let participants continue with CDF project if they were to leave the school before completion of CDF project (applicable to school-based projects only).

Source: SWD records

**Child Development Fund projects and participants by districts
(30 June 2019)**

District (Note)	No. of projects			No. of participants		
	NGO- run projects (a)	School- based projects (b)	Total (c) = (a) + (b)	NGO- run projects (d)	School- based projects (e)	Total (f) = (d) + (e)
Tsuen Wan & Kwai Tsing	21	7	28 (14%)	2,198	377	2,575 (14%)
Hong Kong Island	15	4	19 (10%)	1,650	223	1,873 (10%)
Kowloon City & Yau Tsim Mong	16	2	18 (9%)	1,740	101	1,841 (10%)
Kwun Tong	11	11	22 (11%)	1,209	599	1,808 (10%)
Sham Shui Po	12	5	17 (9%)	1,371	262	1,633 (9%)
Yuen Long	10	9	19 (10%)	1,063	543	1,606 (9%)
Tuen Mun	10	7	17 (9%)	1,095	469	1,564 (9%)
Tai Po & North	14	1	15 (8%)	1,513	50	1,563 (9%)
Sai Kung	9	2	11 (6%)	955	120	1,075 (6%)
Tung Chung	9	1	10 (5%)	909	50	959 (5%)
Wong Tai Sin	9	1	10 (5%)	880	57	937 (5%)
Shatin	6	1	7 (4%)	655	51	706 (4%)
Total	142	51	193 (100%)	15,238	2,902	18,140 (100%)

Source: SWD records

Note: NGO-run projects are analysed by the districts where the projects were implemented.
School-based projects are analysed by the districts where the schools were located.

Acronyms and abbreviations

Audit	Audit Commission
CDF	Child Development Fund
CSSA	Comprehensive Social Security Assistance
LegCo	Legislative Council
LWB	Labour and Welfare Bureau
NGO	Non-governmental organisation
PDP	Personal Development Plan
SCCDF	Steering Committee on Child Development Fund
SWD	Social Welfare Department
TS	Targeted savings