

## **CHAPTER 2**

**Environment Bureau  
Agriculture, Fisheries and  
Conservation Department  
Environmental Protection Department  
Food and Environmental Hygiene Department  
Leisure and Cultural Services Department**

**Government's efforts in  
tackling shoreline refuse**

**Audit Commission  
Hong Kong  
28 October 2020**

*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. 75 of the Director of Audit contains 10 Chapters which are available on our website at <https://www.aud.gov.hk>

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# GOVERNMENT’S EFFORTS IN TACKLING SHORELINE REFUSE

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# **GOVERNMENT'S EFFORTS IN TACKLING SHORELINE REFUSE**

## **Executive Summary**

1. According to the report of a Marine Refuse Study completed by the Environmental Protection Department (EPD) in 2015 (the 2015 Study), marine refuse refers to any solid waste, discarded or lost material, resulting from human activities, that has entered the marine environment irrespective of the sources. Floating refuse (i.e. marine refuse floating on sea surface) may be washed ashore and accumulated near the coastline as shoreline refuse. While floating refuse is collected by the Marine Department (MD), shoreline refuse is collected by a number of government departments, namely the Agriculture, Fisheries and Conservation Department (AFCD), the Food and Environmental Hygiene Department (FEHD), and the Leisure and Cultural Services Department (LCSD) according to the locations of which they are in charge. In 2019, 3,856 tonnes of shoreline refuse were collected by AFCD, FEHD and LCSD.

2. The Government set up in 2012 and subsequently revamped in 2018 an Inter-departmental Working Group to coordinate and enhance efforts among the relevant departments in tackling the marine refuse problem. In support of the Working Group, EPD completed the 2015 Study. The relevant departments took specific actions to implement recommendations of the 2015 Study, which included: (a) enhancing cleaning efforts (e.g. increasing cleaning frequencies of 27 priority sites identified by the 2015 Study); (b) providing support and facilities to reduce the amount of refuse entering the sea (e.g. providing waste recycling bins and water dispensers at coastal areas); (c) launching publicity and educational campaigns; and (d) conducting regulatory and enforcement actions. A Clean Shorelines Liaison Platform (which mainly includes a dedicated website and social platforms) has been established after the 2018 Policy Address to engage organisations and volunteers that advocate for keeping the shorelines clean, with a view to leveraging community efforts to protect the marine environment. The Audit Commission (Audit) has recently conducted a review to examine the Government's efforts in tackling shoreline refuse.

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### Monitoring of shoreline cleanliness by Environmental Protection Department

3. ***Inspections of coastal sites.*** EPD conducts regular inspections at specific coastal sites which are more prone to marine refuse accumulation, and assesses the cleanliness conditions of these sites using a Shoreline Cleanliness Grading System (with five levels ranging from “Grade 1 — Clean” to “Grade 5 — Poor”) (i.e. shoreline cleanliness monitoring programme). From April 2015 to October 2017, EPD staff inspected each priority site at least once in both wet and dry seasons. With a new list of 29 priority sites updated in November 2017 and up to December 2019, EPD staff conducted inspections to the newly listed priority sites under a new monitoring regime, in which the frequency of re-inspection of a priority site (ranging from within one to six months) was set by reference to the cleanliness level recorded. Since mid-January 2020, EPD has ceased deploying its own staff to conduct routine inspections and engaged a contractor to conduct on-site inspections of the 29 priority sites monthly and 90 other coastal sites quarterly under a site monitoring contract. EPD has also engaged another contractor to deploy unmanned aircraft systems (UAS) for shoreline surveillance since May 2020 under a trial project (paras. 2.4 to 2.7, 2.12 and 2.17(a)).

4. ***Inspections by EPD staff.*** Audit examined records of inspections by EPD staff to the 29 priority sites from November 2017 to December 2019 (26 months) and identified the following issues (para. 2.8):

- (a) ***Some re-inspections not conducted within planned timeframe.*** There were deviations from the planned timeframe in conducting 24 re-inspections involving 13 of the 29 priority sites (up to a delay of 106 days in one case). According to EPD, 9 of the 24 re-inspections were covered by helicopter surveillance flights (arranged with the Government Flying Service). However, the information obtained by helicopter aerial surveillance was different from that by on-site inspections as the angle of photographs taken and the surveillance area varied in each flight and the Shoreline Cleanliness Grading System was not applicable (para. 2.9); and
- (b) ***Inconsistencies in documentation of inspection.*** EPD standardised the format of the inspection report after a review exercise conducted in July 2019. Since then, field staff had been required to include photographs taken at designated points of each coastal site in the inspection report. Supervisory checks were also introduced after the review exercise. Based



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on a sample check of 15 reports on inspections conducted after July 2019, Audit found that: (i) photographs of some designated points were not included in 4 inspection reports and the reasons for omission were not documented; and (ii) supervisory checks were not documented in 6 inspection reports (para. 2.10).

5. ***Need to promulgate cleanliness conditions of coastal sites.*** EPD does not regularly promulgate in the public domain the cleanliness condition of coastal sites. In Audit's view, information on the cleanliness condition of coastal sites is useful for non-governmental organisations (e.g. green groups) in planning their voluntary clean-up events. With the lapse of time and the increased inspection coverage and frequency since 2020, there are merits for EPD to disseminate the information on cleanliness conditions of coastal sites through the dedicated Clean Shorelines website (para. 2.13).

6. ***Need to keep in view coastal sites under shoreline cleanliness monitoring programme.*** Audit found that the cleanliness condition of the priority sites had generally improved from January 2018 to mid-August 2020. For instance, 27 (93%) of 29 priority sites identified in November 2017 were accorded an average cleanliness grading better than "Grade 3 — Fair" from January to mid-August 2020. However, during the same period, some non-priority sites attained worse cleanliness gradings (e.g. the Brothers Marine Park). In Audit's view, EPD should continue to keep in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme taking into account changes in cleanliness and other circumstances of individual sites, and make use of UAS inspections to supplement on-site inspections (paras. 2.16 to 2.18).

7. ***Handling of pork hock incident.*** In May 2017, EPD and the authorities in Guangdong Province launched a regional notification and alert mechanism allowing one side to notify the other of heavy rain or significant environmental incidents. In conjunction with the mechanism, EPD has compiled a protocol for handling surge of marine refuse in Hong Kong (the Protocol), which outlines the established arrangements for action departments (i.e. AFCD, FEHD, LCSD and MD) to handle surge of marine refuse at Hong Kong's waters and coastal areas owing to typhoon, heavy rainfalls, or significant environmental incidents. On 11 July 2020, local media reports revealed that a large quantity of pork hocks had been found on the beaches in Humen, Dongguan, Guangdong Province. From 13 to 16 July 2020, media reports revealed that pork hocks had been found on the beaches in Tuen Mun District and

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Tsuen Wan District. According to EPD, the pork hocks found on the beaches did not meet the broad classification of marine refuse (i.e. plastics, metal, glass, processed timber, paper, porcelain, rubber and cloth) and hence, the incident did not meet the conditions for activating the Protocol. Notwithstanding this, it had taken follow-up actions on the incident in response to a media enquiry on 13 July 2020. Audit considers that there are merits for EPD to draw on the experience in the incident to update the Protocol, where appropriate (paras. 2.21 to 2.25).

### Clean-up operations by Agriculture, Fisheries and Conservation Department

8. ***Cleansing contracts.*** AFCD is responsible for the cleanliness of six Marine Parks, one Marine Reserve, and shorelines of 24 country parks and 11 designated special areas outside the country parks in Hong Kong. As at 1 July 2020, the cleansing work of the Marine Parks and Marine Reserve was outsourced to 3 contractors under 5 recurrent contracts. From 2015 to 2019, AFCD collected 1,670 tonnes (averaging 334 tonnes per annum) of marine refuse in its Marine Parks and Marine Reserve (para. 3.2). Audit examination revealed the following areas for improvement:

- (a) ***Need to improve the inspection reporting requirements.*** Monitoring staff of AFCD are required to complete a Daily Site Inspection Form or any of the two other inspection forms after each inspection. Audit noted that some important information was missing in the inspection forms. For example, the inspection form used by AFCD staff in two Marine Parks (Sha Chau and Lung Kwu Chau Marine Park and the Brothers Marine Park) did not record the time of inspection, and all inspection forms did not record the departure time of the contractors' staff (paras. 3.3 and 3.4);
- (b) ***Need to take effective follow-up actions on cases of suspected absence from duty of contractors' staff.*** According to the provisions in AFCD's cleansing contracts, contractors should ensure that the number of cleaners deployed to perform a cleansing operation and the number of working hours are not less than that stipulated in the contracts. Audit examined 772 inspection records (from 1 April 2019 to 31 March 2020) and found that: (i) the inspection forms of 18 site inspections in 3 Marine Parks (Tung Ping Chau, Hoi Ha Wan and Yan Chau Tong Marine Parks) showed that AFCD staff either did not find the contractors' staff on site, or found that contractors' staff had left early. In 12 out of the 18 cases, AFCD staff either did not document any follow-up actions taken (7 cases), gave up

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calling the contractors after several unsuccessful phone calls (3 cases), or the contractor informed AFCD that the duration of cleansing work had to be shortened (2 cases) and yet no information on the dates of replacement work was recorded; and (ii) 99 inspections scheduled for Sha Chau and Lung Kwu Chau Marine Park were cancelled because the AFCD staff concerned were occupied by other tasks. The monitoring procedures of AFCD have not specified a minimum inspection frequency for AFCD staff over a period of time (para. 3.5); and

- (c) ***Need to enhance the monitoring of contractors' work.*** Audit examined the provisions in the 5 recurrent AFCD cleansing contracts (in force as of August 2020) and found that: (i) the internal guideline of AFCD did not provide clear assessment criteria for assessing the level of satisfaction with the services provided by a contractor; (ii) only one cleansing contract specified that the contractor should submit digital images before each service and after completion of the service; and (iii) all 5 contracts had not included provisions requiring the contractors to report the arrival and departure times of their staff (para. 3.7).

9. ***Audit's site visits.*** Audit's site visits to two Marine Parks from June to August 2020 found the following issues:

- (a) ***Long time taken to remove large objects washed ashore.*** Audit's site visit on 18 June 2020 found two red pipe structures along the shoreline of Lung Kwu Chau. According to AFCD records, the two pipe structures were first found in December 2019 and follow-up actions (including identifying the owner of the structures and trying to engage some cleansing service companies for arranging quick removal of the structures) had been taken to remove the structures but not successful. Subsequently, AFCD sought the assistance from MD and the pipe structures were eventually removed by MD's contractor on 29 July 2020 (paras. 3.11, 3.12 and 3.14);
- (b) ***Marine refuse found beyond high water mark of Sha Chau and Lung Kwu Chau Marine Park.*** According to the cleansing contract of the Marine Park, the contractor should clear all refuse at areas near the high water mark and the edge of the sea on beaches, as well as all floating refuse within the Marine Park boundary. Audit's site visits on 18 June, 24 July and 24 August 2020 found a large quantity of refuse at the area beyond high

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water mark and next to the natural vegetation (i.e. back-of-beach area) of Sha Chau and Lung Kwu Chau (paras. 3.15 and 3.16);

- (c) ***Need to improve the cleanliness of back-of-beach area of Lung Kwu Chau.*** AFCD is responsible for clean-up of marine refuse within the boundary of the Marine Park, excluding the back-of-beach area. For the back-of-beach area of Lung Kwu Chau, AFCD agreed to conduct a one-off in-depth clean-up operation with EPD's funding support, albeit falling outside the boundary of the Marine Park. AFCD awarded two ad hoc cleansing contracts (from November 2018 to May 2019 and February to July 2020) covering the back-of-beach area of Lung Kwu Chau. Audit found that the frequency of collection, number of staff to be deployed and working hours per day had not been specified in the two ad hoc contracts and the contractor was not required to submit digital images of the site after each clean-up operation as evidence supporting that the cleansing work was satisfactorily completed. In July and August 2020, Audit paid site visits to Lung Kwu Chau and found that: (i) the refuse had not been fully cleaned up at Lung Kwu Chau in accordance with the contract provisions; and (ii) a large quantity of refuse was accumulated at the back-of-beach area adjacent to a footpath on Lung Kwu Chau (paras. 3.17 and 3.18); and
- (d) ***Need to improve the cleanliness of the Brothers Marine Park.*** The contractor of the cleansing contract of the Brothers Marine Park cleaned West Brother and East Brother each once a month, which was the lowest frequency among the Marine Parks and Marine Reserve. Audit's site visits on 24 July and 24 August 2020 found a large quantity of refuse (barrels, bamboo sticks and foam boxes) accumulated along the shorelines of the Marine Park (paras. 3.19 to 3.21).

### **Clean-up operations by Leisure and Cultural Services Department**

10. ***Collection and removal of shoreline refuse at gazetted beaches.*** LCSD is responsible for the cleanliness of 41 gazetted beaches and the cleansing work is performed by contractors under three cleansing contracts covering different districts. While the cleanliness condition of gazetted beaches was generally more satisfactory than that of the other coastal sites, Audit found the following areas for improvement (paras. 4.2, 4.6 and 4.8):

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- (a) ***Need to ensure accuracy and timely reporting of statistics on special cleansing operations.*** LCSD conducted special cleansing operations at the priority sites during wet seasons and at the remaining gazetted beaches after heavy rainfall, strong monsoon, typhoons or other inclement weather. Audit noted that the statistics of special cleansing operations had not been reported to the Working Group or its Task Force after January 2018. Audit examination of a statistical return on special cleansing operations provided by LCSD revealed that: (i) for the four priority sites, the number of special cleansing operations decreased from around 100 each in 2018 and 2019 to 24 for the first half of 2020. The decrease might reflect a general improvement in the cleanliness condition of the priority sites; and (ii) for the other 37 non-priority sites, the number of special cleansing operations increased significantly from 236 in 2019 to 931 for the first half of 2020. According to LCSD, the provision of one additional cleansing worker per day at each of the six beaches in Sai Kung from February to May 2020 and in some of the Sai Kung beaches in June 2020 was incorrectly reported as 842 special cleansing operations in the statistical return provided to Audit (paras. 4.10 to 4.12);
- (b) ***Need to tighten controls on provision of additional cleansing workers.*** Audit examined the requests made by LCSD for provision of additional cleansing workers by contractors for beaches in different districts from April 2017 to March 2020 and found that: (i) justifications for the requests for additional cleansing workers were not documented; (ii) additional cleansing workers had been deployed before the issue of a written service order to the contractor on some occasions; and (iii) while LCSD requested the contractor to provide four additional cleansing workers to work for eight hours on alternate Fridays each month in Rocky Bay Beach from June 2018 to March 2020, the quantity of refuse collected on the Fridays with additional cleansing workers did not show a significant increase as compared to that on the Fridays without additional cleansing workers (para. 4.14); and
- (c) ***Need to improve accuracy of shoreline refuse data.*** LCSD venue staff records the total number of bags and/or the total weight of shoreline refuse and land refuse on a daily basis. A summary of shoreline refuse data of each gazetted beach is provided to EPD on a monthly basis. Audit noted that LCSD did not have laid-down procedures on how to classify, count and weigh the refuse collected, resulting in the following issues (para. 4.15):

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- (i) ***Refuse collected not consistently classified as shoreline refuse.*** Audit conducted interviews with venue staff of 13 beaches and found that they had different interpretations on how to classify refuse collected as shoreline refuse. For example, venue staff of two beaches in one district said that only refuse collected in the water area would be classified as shoreline refuse. In contrast, venue staff of three beaches in another district said that refuse collected in the water area and on the entire sand area would be classified as shoreline refuse (para. 4.15(a)(i));
- (ii) ***Variation in estimating refuse weight.*** According to the interviews with the venue staff of different beaches, the refuse weight was estimated based on a formula (i.e. multiplying the number of bags/bins of refuse collected by an estimated weight for each bag/bin of refuse). The estimated weight for each bag/bin of refuse in each beach was either 15 kilograms (kg) or 25 kg (for garbage bag) and either 250 kg or 300 kg (for garbage bin). No record was available showing when and how LCSD determined the estimated weight for each bag/bin of refuse and whether LCSD had regularly calibrated the estimated weight (para. 4.15(a)(ii)); and
- (iii) ***Refuse on shark prevention nets not reported.*** In 2019, the maintenance contractor of shark prevention nets reported that refuse with a total weight of 14,847 kg had been removed during its maintenance service. However, LCSD had not included the quantity of refuse reported by the maintenance contractor in compiling the marine refuse data for submission to EPD (para. 4.15(a)(iii)).

## Clean-up operations by Food and Environmental Hygiene Department

11. ***Monitoring of clean-up operations.*** FEHD is responsible for the cleanliness of ungazetted beaches and coastal areas in Hong Kong that are not under the purview of other government departments. As of August 2020, of the 306 sites of ungazetted beaches and coastal areas under FEHD's purview, the clean-up work of 287 (94%) sites was outsourced to a contractor and clean-up work of the remaining 19 (6%) sites was undertaken by its in-house staff. From 2015 to 2019, FEHD collected 4,045 tonnes (averaging 809 tonnes per annum) of shoreline refuse in the

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ungazetted beaches and coastal areas under its purview (paras. 5.2 and 5.3). Audit examination revealed the following areas for improvement:

- (a) ***Need to update guidelines for assessing the cleanliness level.*** According to FEHD's Operational Manual for Management of Public Cleansing Contracts (Operational Manual), FEHD staff shall assess the overall performance of the contractor through random checking. The frontline staff will determine whether the cleanliness level achieved is satisfactory based on both the terms and condition of the contract and the work plans proposed by the contractor and approved by FEHD. In Audit's view, FEHD needs to update its guidelines for assessing the cleanliness level achieved by the contractor, making reference to EPD's Shoreline Cleanliness Grading System for the cleanliness level where appropriate (para. 5.5);
- (b) ***Need to comply with the monitoring requirements of the Operational Manual.*** According to the Operational Manual, Senior Foremen should inspect at least 50% of the scheduled work sites on the day the service is provided. Health Inspectors and Senior Health Inspectors should conduct checking on the submissions of Senior Foremen, by making use of the Contract Management System of FEHD, twice and once a week respectively. In June and July 2020, Audit paid visits to FEHD's Islands and Sai Kung District Environmental Hygiene Offices and found cases that the work sites inspected had not been recorded on the concerned Senior Foreman's Daily Inspection Reports. Without information on work sites inspected, Audit could not ascertain whether the 50% target inspection rate for Senior Foremen had been achieved. Audit also noted that the requirement of the Operational Manual to make use of the System to conduct checking on the submissions of the Senior Foreman once/twice a week had not been fully achieved (paras. 5.6 and 5.7);
- (c) ***Audit's field visits.*** From June to mid-September 2020, Audit conducted field visits to three priority sites and found:
  - (i) a large quantity of refuse in two sites (Ting Kok Road near Po Sam Pai Village in Tai Po District and Shui Hau in Islands District) and the refuse had not yet been fully cleaned up by the contractor as of mid-September 2020; and

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- (ii) a plastic bucket and a large bamboo scaffold at the shoreline of Lung Kwu Tan near Lung Tsai in Tuen Mun District (para. 5.12); and
- (d) ***Tendering of clean-up service.*** From 2016 to 2021, FEHD adopted different grouping strategies for the contracts for provision of clean-up (and waste removal) services for the ungazetted beaches and coastal areas and other territorial sites under its purview (para. 5.16). Audit examination revealed the following areas for improvement:
  - (i) ***Need to avoid over-reliance on a single contractor.*** In approving the acceptance of recommended tender for the territory-wide clean-up contract for the period from June 2018 to May 2019, the Central Tender Board in May 2018 commented that the over-reliance on a single contractor was undesirable from the risk management perspective and requested FEHD to take this into account in future. According to the Financial Services and the Treasury Bureau Circular Memorandum No. 4/2019 “Concentration Risk in relation to Cleansing and Security Service Contracts” (issued in April 2019), government departments are encouraged to implement appropriate means to promote competition including restricting the number of contracts to be awarded to the same tenderer. However, FEHD awarded the 2019-21 clean-up service for two Districts Groups in May 2019 to the same contractor without imposing such restriction (paras. 5.16 and 5.19); and
  - (ii) ***Need to make realistic estimation of clean-up service hours for inclusion in future contracts as far as practicable.*** The 2019-21 clean-up contract requires the contractor to perform clean-up service to achieve the cleanliness level to the satisfaction of FEHD (i.e. adopting an outcome basis approach). Audit selected one district each (with the longest estimated hours) from the two Districts Groups of the contract and found that, for the period from June 2019 to May 2020, the actual hours incurred by the contractor were only 38.3% and 53.3% respectively of the estimated hours included in the contract (paras. 5.20 and 5.23).



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### Other related issues

12. *Publicity and public engagement efforts in promoting shoreline cleanliness.* Audit examination revealed the following areas for improvement:

- (a) *Clean-up events for remote and difficult-to-access coastal sites.* Audit found that from January 2019 to July 2020, no clean-up events were organised at three priority sites, one of which being the Sha Chau and Lung Kwu Chau Marine Park (see para. 9(b) and (c)). In order to encourage community groups to conduct clean-up events at the coastal sites with genuine marine refuse problems, EPD should consider periodically promulgating their cleanliness conditions (para. 6.5);
- (b) *Need to encourage the use of marine refuse data cards.* EPD encourages community groups to collect coastal refuse data (using marine refuse data card templates uploaded on the Clean Shorelines website) and report them to EPD upon completion of each clean-up operation. Audit noted that of the 1,440 clean-up events organised by community groups from April 2015 to July 2020, EPD only received 20 sets of marine refuse data from the organisers of 58 clean-up events (para. 6.6);
- (c) *Need to remind contractor to report accurate figures in monthly analytical reports of social media pages.* EPD has set up three Clean Shorelines social media pages and the maintenance of two of them is outsourced to a contractor. Audit found that there were a number of errors in the figures reported in the monthly analytical reports submitted by the contractor (paras. 6.7 and 6.8); and
- (d) *Need to gauge public views on shoreline cleanliness.* In 2016, EPD planned to conduct a survey to gauge the public impression on shoreline cleanliness following the implementation of improvement measures by the Working Group since April 2015. The survey was subsequently cancelled due to various reasons. Audit noted that the Working Group had encountered difficulties in gathering feedback through face-to-face public engagement sessions and clean shorelines activities after 2018 due to social unrest in 2019 and the outbreak of the coronavirus disease (COVID-19) in 2020. Audit considers that there are merits for the Working Group to consider appropriate ways to gauge public views on shoreline cleanliness at a future opportune time (paras. 6.9 and 6.10).

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13. ***Using 360-degree camera system to monitor remote coastal sites.*** For close monitoring of shoreline refuse, FEHD launched a trial scheme on hiring camera system services at 5 priority sites from February to July 2018. Digital images were captured in day time and uploaded to a central server automatically. FEHD staff monitored the condition of the coastal sites through a website provided by the contractor. After reviewing the result of the trial, FEHD extended the trial services at 15 priority sites for one year from March 2020 to February 2021 (paras. 6.13 and 6.14). Audit examination revealed the following areas for improvement:

- (a) ***Need to keep proper records on causes of malfunctioning of the camera system and follow-up actions taken.*** There had been six cameras installed in the Islands District. Audit noted that, from 1 March to 31 May 2020 (92 days), there was a total of 301 camera-days without image received. However, no follow-up actions on these malfunctioning cameras had been recorded in the report forms (para. 6.16); and
- (b) ***Need to ascertain whether the contractor has achieved the service contract requirements and consider taking follow-up actions in case of non-compliance.*** Audit noted that no images were received from 10 (67%) of the 15 priority sites for a period from 31 to 91 days, and the objective of monitoring the cleanliness condition of the priority sites was hampered (para. 6.17).

14. ***Need to step up enforcement actions against marine littering.*** MD, AFCD, FEHD and LCSD are empowered to take enforcement action against marine littering or nearshore littering. In the 10-year period from 2010 to 2019, while FEHD took enforcement actions on 5 marine littering cases per annum on average, AFCD only took enforcement actions in 3 of the 10 years and LCSD only gave verbal advice without taking any prosecution action. While pertinent departments were asked to step up inspections and patrols to achieve a deterrent effect and improve compliance according to the Working Group Meeting paper submitted in June 2014, Audit noted that the number of enforcement actions taken against marine littering by AFCD and LCSD had still remained low (paras. 6.20 and 6.22).

15. ***Provision of more water dispensers at gazetted beaches.*** Providing more water dispensers at gazetted beaches, parks, waterfront promenades and other recreational venues was one of the actions under the improvement measure to reduce refuse from entering the marine environment identified by the 2015 Study. In view

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of the high public patronage (e.g. 11 million visitors in 2019-20), water dispensers should be provided at gazetted beaches as far as practicable, to encourage members of the public to bring their own reusable water bottles to avoid purchasing and consuming one-off plastic-bottled beverages. Audit examination however revealed that progress in installing water dispensers was slow. As of June 2020, water dispensers were only provided in 24 (59%) of 41 gazetted beaches (paras. 6.25, 6.27 and 6.28).

### 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:**

- (a) **the Director of Environmental Protection should:**
  - (i) **consider disseminating the information on cleanliness conditions of coastal sites, and continue to keep in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme, and make use of UAS inspections (currently under trial) to supplement on-site inspections when reviewing the site monitoring contract requirements in future (para. 2.19(b) and (c));**
  - (ii) **draw on the experience in the pork hock incident to update the Protocol, where appropriate (para. 2.26); and**
  - (iii) **arrange for the Working Group to consider appropriate ways to gauge public views on shoreline cleanliness at a future opportune time (para. 6.11(c));**
- (b) **the Director of Agriculture, Fisheries and Conservation should:**
  - (i) **improve the inspection reporting requirements of cleansing services and take effective follow-up actions on cases of suspected absence from duty of contractors' staff and specify a minimum inspection frequency for AFCD staff (para. 3.8(a) and (b));**

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- (ii) **take measures to enhance monitoring of contractors' work, including issuing guidelines on the assessment of the quality of services of the contractors, requiring contractors to provide additional evidence on the work performed and report the arrival and departure times of their staff for each cleansing operation in future contracts (para. 3.8(d));**
  - (iii) **consider improving the salvage operation of large floating objects found in the Marine Parks and Marine Reserve (para. 3.22(a));**
  - (iv) **strengthen the monitoring of contractor's work in cleaning up the back-of-beach area of Lung Kwu Chau and review the effectiveness of the ad hoc cleansing services at back-of-beach area of Lung Kwu Chau (para. 3.22(b) and (c));**
  - (v) **explore effective measures in removing refuse located at the back-of-beach area of Lung Kwu Chau not covered by the existing contract (para. 3.22(d));**
  - (vi) **take prompt actions to improve the cleanliness of the Brothers Marine Park and consider the need for increasing the cleansing frequency (para. 3.22(e)); and**
  - (vii) **step up enforcement actions against marine littering (para. 6.23);**
- (c) **the Director of Leisure and Cultural Services should:**
- (i) **ensure that the results of special cleansing operations are reported to the Working Group and its Task Force and improve the accuracy of management information on special cleansing operation statistics (para. 4.16(b) and (c));**
  - (ii) **tighten controls on the provision of additional workers for cleansing work of beaches and improve the accuracy of shoreline refuse data (para. 4.16(d) and (e));**
  - (iii) **step up enforcement actions against marine littering (para. 6.23); and**

## **Executive Summary**

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- (iv) expedite the installation of water dispensers in gazetted beaches (para. 6.32(a)); and
- (d) the Director of Food and Environmental Hygiene should:
  - (i) update the guidelines for assessing the cleanliness level achieved by the contractor and remind FEHD's supervisory staff to comply with the monitoring requirements of FEHD's Operational Manual (para. 5.10(a) and (b));
  - (ii) step up efforts in monitoring the cleanliness of priority sites and strengthen the supervision on the contractor's work (para. 5.14);
  - (iii) in consultation with the Department of Justice as appropriate, consider splitting the territory-wide clean-up service contract into different Districts Groups and imposing a restriction to the effect that the contracts cannot be awarded to a single contractor in future, taking due consideration of the prevailing market condition (para. 5.24(a));
  - (iv) make realistic estimation of clean-up service hours for inclusion in future contracts as far as practicable (para. 5.24(b));
  - (v) keep proper records on causes of malfunctioning of the camera system and follow-up actions taken (para. 6.18(a)); and
  - (vi) ascertain whether the contractor has achieved the service contract requirements and consider taking follow-up actions in case of non-compliance (para. 6.18(b)).

## **Response from the Government**

17. The Director of Environmental Protection, the Director of Agriculture, Fisheries and Conservation, the Director of Leisure and Cultural Services, and the Director of Food and Environmental Hygiene 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 ***Shoreline refuse.*** According to the report of a Marine Refuse Study completed by the Environmental Protection Department (EPD) in 2015 (the 2015 Study), marine refuse refers to any solid waste, discarded or lost material, resulting from human activities, that has entered the marine environment irrespective of the sources (Note 1). Marine refuse comprises a wide range of materials such as plastic items and foam packaging materials. Floating refuse (i.e. marine refuse floating on sea surface) may be washed ashore and accumulated near the coastline as shoreline refuse (Note 2). Shoreline refuse becomes a visual amenity problem and an eyesore generating complaints, and may pose adverse impacts on the marine ecosystems and other sensitive beneficial uses of marine waters.

1.3 ***Collection of shoreline refuse.*** While floating refuse is collected by the Marine Department (MD), shoreline refuse is collected by a number of government departments, namely the Agriculture, Fisheries and Conservation Department (AFCD), the Food and Environmental Hygiene Department (FEHD), and the Leisure and Cultural Services Department (LCSD) according to the locations of which they are in charge. The delineation of responsibility is as follows:

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**Note 1:** *According to the Guidelines on Survey and Monitoring of Marine Litter published by the United Nations Environment Programme and Intergovernmental Oceanographic Commission, marine refuse can be broadly classified into the following materials of man-made origins, including: (a) plastics; (b) metal; (c) glass; (d) processed timber; (e) paper; (f) rubber; and (g) cloth.*

**Note 2:** *Refuse sunk to the sea bottom may become seabed refuse if not decomposed. Removal of seabed refuse is conducted on a need basis by the Agriculture, Fisheries and Conservation Department, the Civil Engineering and Development Department, and the Marine Department. This audit review did not cover the work in tackling seabed refuse.*

## Introduction

- (a) **MD.** The department is responsible for the sea surface cleanliness of Hong Kong waters. Services provided by MD include scavenging floating refuse from sea and foreshore areas, domestic refuse collecting service for local vessels inside typhoon shelters and ocean-going vessels moored within the Victoria Harbour, Junk Bay and Western Anchorages. MD also regularly conducts joint operations with FEHD to clear refuse accumulated at foreshores other than gazetted beaches;
- (b) **AFCD.** The department is responsible for the cleanliness of six Marine Parks, one Marine Reserve (see Figure 1), and shorelines of 24 country parks and 11 designated special areas (created mainly for the purpose of natural reservation) outside the country parks in Hong Kong by performing regular clean-ups and proper disposal of refuse;

Figure 1

### Locations of six Marine Parks and one Marine Reserve



Source: AFCD records



- (c) **LCSD.** The department is responsible for the cleanliness of 41 gazetted beaches (see Figure 2). Services provided by LCSD include removal of floating refuse inside the swimming zone of the beaches, and clearance of refuse attached on marker buoys, floating pipes of shark prevention nets and shark prevention nets; and

Figure 2

## Locations of 41 gazetted beaches



Source: LCSD records

- (d) **FEHD.** The department is responsible for the cleanliness of ungazetted beaches and coastal areas, except those areas under the purview of other government departments. FEHD removes marine refuse washed ashore (shoreline refuse) to areas under its purview, and also conducts joint operations with MD to clear refuse accumulated at foreshores.

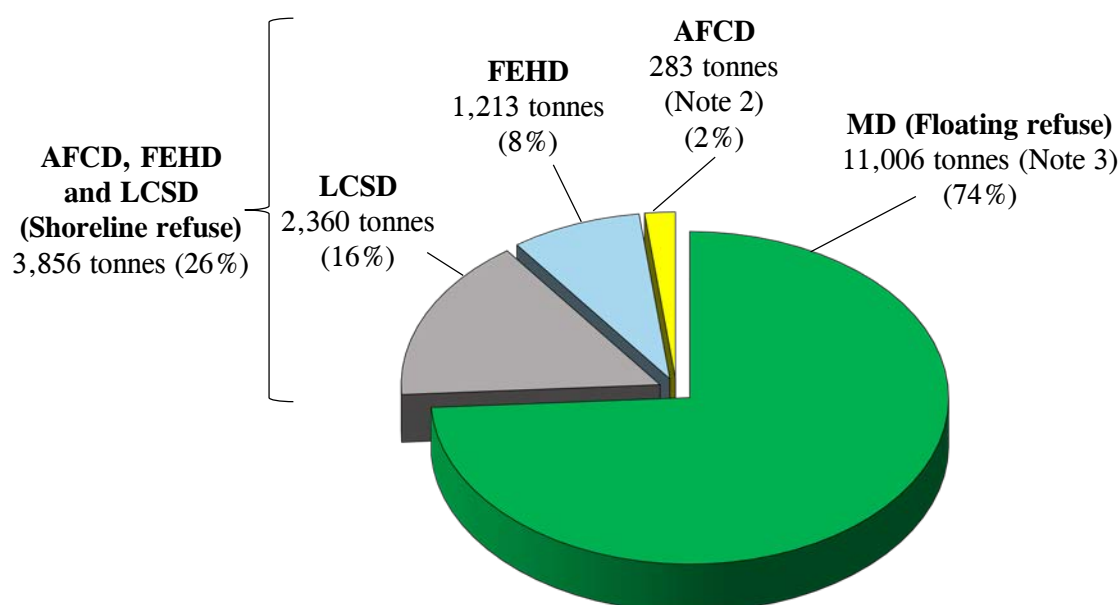
## Introduction

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According to the marine refuse statistics reported by the relevant departments to EPD, in 2019, the total quantity of marine refuse collected was 14,862 tonnes. Among these, 3,856 tonnes were shoreline refuse collected by AFCD, FEHD and LCSD (see Figure 3).

**Figure 3**

**Quantity of marine refuse (Note 1)  
collected as reported by the four departments  
(2019)**



*Source: EPD's Clean Shorelines website and MD records*

*Note 1: In EPD's Clean Shorelines website, the collection of marine refuse (which comprises floating refuse and shoreline refuse) is presented holistically in a pie chart:*

- (a) floating refuse refers to marine refuse collected by MD in Hong Kong waters including foreshore areas and typhoon shelters. Domestic refuse collected from vessels inside typhoon shelters is excluded (see Note 3); and*
- (b) shoreline refuse refers to marine refuse collected by government departments excluding floating refuse collected by MD. Land refuse collected on the sandy area of gazetted beaches by LCSD is not defined as shoreline refuse.*

**Figure 3 (Cont'd)**

*Note 2: This included the litter collected from trash bins provided in Marine Parks.*

*Note 3: MD's contractor reported to MD that the total amount of marine refuse collected was 15,578 tonnes, which comprised 11,006 tonnes of floating refuse and 4,572 tonnes of domestic refuse collected from local vessels inside typhoon shelters and ocean-going vessels moored within the Victoria Harbour, Junk Bay and Western Anchorages. However, as noted in a related audit review on the collection and removal of marine refuse by MD (see para. 1.13), there was a significant discrepancy between the quantity of marine refuse reported by MD's contractor (i.e. 15,578 tonnes) and that disposed of by MD's contractor at refuse transfer stations and landfills. According to EPD's records, the quantity of refuse disposed of by MD's contractor at refuse transfer stations and landfills was 2,627 tonnes only.*

**1.4 Legislative control on marine littering.** It is an offence to deposit without lawful authority or cause or permit to be deposited (where the case applies) any litter into the waters of Hong Kong or in public places (including gazetted beach, ungazetted beach, coastal area, watercourse, channel, ditch, marine park, marine reserve, typhoon shelter, etc.) or in any place from which it is likely that the litter will be swept by the tide into the waters of Hong Kong. MD, AFCD, FEHD, LCSD and the Hong Kong Police Force (HKPF — Note 3) are empowered to take enforcement actions against marine littering or nearshore littering under relevant legislation of their respective purviews (Note 4). In 2019, the total number of prosecutions on marine littering by MD, AFCD, FEHD, and LCSD was 24.

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**Note 3:** *HKPF is not a member of the Inter-departmental Working Group (see para. 1.5). This audit review did not cover HKPF's enforcement work in tackling marine refuse.*

**Note 4:** *The relevant legislation includes: (a) Summary Offences Ordinance (Cap. 228) enforced by MD and HKPF; (b) Fixed Penalty (Public Cleanliness and Obstruction) Ordinance (Cap. 570) enforced by MD, LCSD, FEHD and HKPF; (c) Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK) enforced by LCSD and FEHD; (d) Bathing Beaches Regulation (Cap. 132E) enforced by LCSD; and (e) Marine Parks and Marine Reserves Regulation (Cap. 476A) enforced by AFCD (see Appendix A for details).*

### *Inter-departmental Working Group and the 2015 Study*

1.5 ***Inter-departmental Working Group.*** In November 2012, in order to coordinate and enhance efforts among the relevant departments in tackling the marine refuse problem, the Government set up an Inter-departmental Working Group on Clean Shorelines. In January 2018, the Inter-departmental Working Group on Clean Shorelines was revamped and renamed as the Inter-departmental Working Group on Marine Environmental Management (the Working Group — Notes 5 and 6) with two task forces set up under it, namely the Task Force on Marine Refuse (TFMR) and the Task Force on Emergency Response to Environmental Incidents.

1.6 ***Findings of the 2015 Study.*** In March 2013, in support of the Working Group, EPD appointed a consultant to commission the 2015 Study. The key objectives of the Study were to collect, collate and analyse up-to-date information on the sources, fates, distribution and movement of marine refuse in Hong Kong waters. The 2015 Study also reviewed existing measures and formulated strategic policies to prevent and reduce marine refuse. In April 2015, the Working Group released the 2015 Study Report. Key findings of the 2015 Study Report included:

- (a) the marine refuse collected, which accounted for less than 0.5% of municipal solid waste, was mainly a result of littering and poor awareness by members of the community;
- (b) more than 80% of marine refuse originated from land-based sources, with shoreline and recreational activities being the predominant activity type contributing to marine refuse;
- (c) more than 70% (excluding natural debris) comprised plastic and foam plastic items while non-local refuse, which could be identified via its

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**Note 5:** *The Working Group is chaired by the Permanent Secretary for the Environment. Its membership, apart from directorate level representatives from the four departments involved in collection of marine refuse (see para. 1.3), includes directorate level representatives from the Environmental Protection Department, the Drainage Services Department, the Fire Services Department, the Home Affairs Department, and the Hong Kong Observatory.*

**Note 6:** *In this Audit Report, both the Inter-departmental Working Group on Clean Shorelines and the Inter-departmental Working Group on Marine Environmental Management are, for simplicity, referred to as the “Working Group”.*

simplified Chinese character labels, accounted for less than 5% of the marine refuse collected;

- (d) the prevailing wind (i.e. south-westerly in wet season (from April to October) and north-easterly in dry season (from November to March)) had marked effect on refuse accumulated. More refuse was often collected after typhoons and heavy rain; and
- (e) a list of 27 priority sites, which were more prone to refuse accumulation and subject to more complaints, was drawn up.

1.7 ***Three-pronged strategy.*** In light of the findings of the 2015 Study (see para. 1.6), a three-pronged strategy was recommended in addressing marine refuse problem in Hong Kong, which included:

- (a) reducing overall waste generation at source (Note 7);
- (b) reducing the amount of refuse entering the marine environment; and
- (c) removing refuse from the marine environment.

1.8 ***Five key improvement measures.*** Five key improvement measures have been identified to improve the cleanliness of shorelines, as follows:

- (a) conducting publicity campaigns to engage the community to contribute and participate (e.g. encouraging schools and commercial companies to organise clean-ups or joining clean-up events organised by non-governmental organisations (NGOs)/community groups);
- (b) promoting educational messages to target groups, beach users, students and local community (e.g. spreading the anti-littering message with seasonal appeal to the public to help keep public venues clean, especially during festival celebrations and giving greater emphasis to the issue of floating refuse during regular meetings with fisherman organisations);

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**Note 7:** *This audit review focused on the removal of marine refuse and did not cover the reduction of waste at source.*

## Introduction

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- (c) providing support measures and facilities to reduce refuse from entering the marine environment (e.g. considering providing more water dispensers at more gazetted beaches, parks, waterfront promenades and other recreational venues, and reviewing the location, size and number of rubbish bins and waste separation bins at shores and beaches);
- (d) enhancing efforts to remove refuse from the marine environment (e.g. adjusting cleansing frequency); and
- (e) engaging public participation to report marine littering and refuse problem (e.g. reminding the public about the Government's 1823 hotline for reporting marine littering).

### *Implementation of improvement measures*

1.9 ***Progress in implementing recommendations of 2015 Study.*** In May 2017, EPD submitted a paper to the Legislative Council (LegCo) Panel on Environmental Affairs reporting progress of the Government's efforts in tackling marine refuse. According to the panel paper, key specific actions included:

- (a) ***Enhanced cleaning efforts.*** AFCD, FEHD, LCSD and MD had allocated additional resources to enhance their cleaning efforts, which included strategically increasing the cleaning frequencies at the 27 priority sites (see para. 1.6(e)), and arranging for more frequent clean-up operations during summers as recommended in the 2015 Study Report. EPD conducted 252 site inspections at the 27 priority sites from April 2015 to March 2017 and found that the enhanced cleaning efforts had generally delivered positive results. Apart from increasing the cleaning frequencies, the four departments had also increased their equipment and manpower to improve cleaning capacity;
- (b) ***Providing support and facilities to reduce the amount of refuse entering the sea.*** Waste recycling bins were provided at various coastal areas including piers and promenades to promote waste recycling and raise public awareness of waste separation and recycling. Besides, LCSD had provided 182 water dispensers at locations such as beaches, water sports centres, promenades and waterfront parks to encourage members of the public to bring their own reusable water bottles to avoid purchasing and consuming

one-off plastic-bottled beverages, thereby lowering the chance of waste plastics entering the sea. A number of improvement measures had also been implemented since July 2016 by AFCD and the Fish Marketing Organization (Note 8) to reduce the possibility of foam boxes and other refuse falling into the waters of the Aberdeen Typhoon Shelter due to the operations of the Aberdeen Wholesale Fish Market (e.g. urging fish traders and other market users to fasten their foam boxes properly by ropes or nets, and fitting the railings along the promenade with mesh to prevent refuse from blowing off the sea);

- (c) ***Launching publicity and educational campaigns.*** In addition to co-ordinating cleaning efforts among the departments, EPD also endeavoured to conduct publicity and educational activities to enhance public awareness of keeping the shorelines clean. EPD had worked on, among others, producing announcements in the public interest and organising various campaigns such as shorelines clean-up activities, roving exhibitions and design competitions, etc. with a view to encouraging members of the public to change their habits. EPD organised 17 shorelines clean-up activities in conjunction with NGOs or community groups between April 2015 and March 2017. Other three member departments under the Working Group, namely AFCD, FEHD and LCSD also organised a number of publicity and educational activities on keeping shorelines clean; and
- (d) ***Conducting regulatory and enforcement actions.*** The enforcement departments under the relevant legislation (see para. 1.4) stepped up patrols and conducted special inspections at black spots such as promenades, wholesale fish markets and typhoon shelters to take enforcement actions under which fixed penalty notices were issued.

1.10 ***Review of priority sites.*** According to the LegCo Panel on Environmental Affairs paper issued in May 2017 (see para. 1.9), EPD had since April 2017 commenced a review and analysis on the past two-year data on various coastal areas

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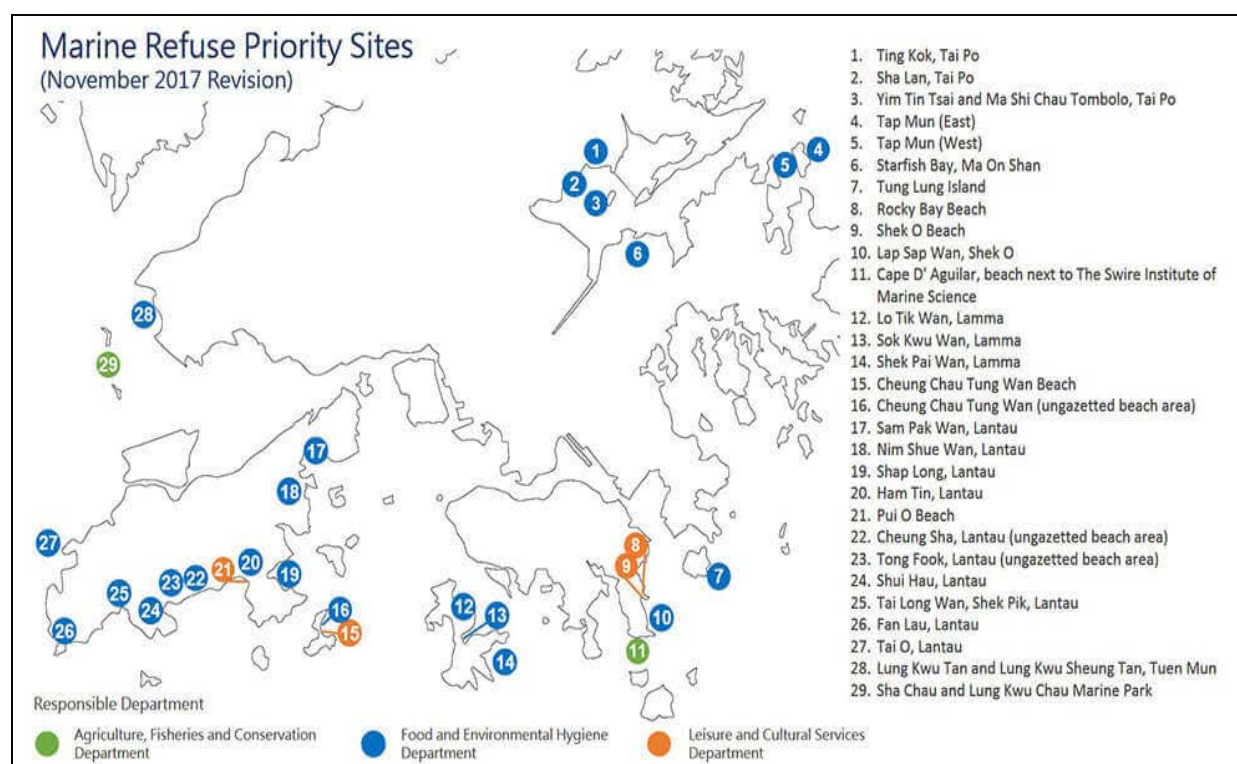
**Note 8:** *The Fish Marketing Organization is a self-financing non-profit-making organisation formed to promote the development and continuous improvement of the fisheries industry, and to provide facilities and services for the orderly marketing of fresh marine fishes. The Organization operates seven wholesale fish markets and is headed by the Director of Marketing, a position currently held by the Director of Agriculture, Fisheries and Conservation.*



## Introduction

with a view to conducting a comprehensive assessment of the marine refuse sites in various districts and their priorities. After an overall evaluation, the list of priority sites was updated in November 2017 to better redeploy resources for improvement of shoreline cleanliness. The new list comprises 29 sites, covering 15 existing and 14 newly added locations (see Figure 4).

**Figure 4**  
**Locations of 29 marine refuse priority sites**  
**(November 2017)**



Source: EPD records

1.11 **Clean Shorelines Liaison Platform.** In October 2018, the Chief Executive of the Hong Kong Special Administrative Region announced in the Policy Address that the Government would step up actions to strengthen clean-up of the shorelines across the territory and regional co-operation in protecting the marine environment, and would establish a Clean Shorelines Liaison Platform to engage organisations and volunteers that advocate for keeping the shorelines clean, with a view to leveraging community efforts to protect the marine environment. The Clean Shorelines Liaison



Platform, which includes the “Clean Shorelines” social platforms, dedicated website, designated hotline and e-mail address, is used for coordinating and promoting shoreline clean-up actions, providing appropriate support and assistance to related activities and sharing the clean-up results.

1.12 *Use of technology.* In the 2017 Policy Address, the Chief Executive highlighted the use of automation to enhance efficiency, particularly the “exploring the introduction of automated cleaning machines or technology for trial use at suitable venues or after large-scale events”. From February to July 2018, FEHD conducted a pilot scheme on the trial use of cameras to monitor the refuse accumulation in five coastal sites. In February 2019, FEHD informed the LegCo Panel on Food Safety and Environmental Hygiene that there was a plan to extend the installation of 360-degree cameras (Note 9) at 15 priority sites. In October 2019, the Environment Bureau informed the LegCo Panel on Environmental Affairs that application of advanced and smart technologies would be explored for comprehensive monitoring of the shoreline conditions, so as to achieve more effective utilisation of resources in expanding the coverage of clean-up operations.

## Audit review

1.13 In May 2020, the Audit Commission (Audit) commenced two reviews to examine the collection and removal of marine refuse by MD (see Chapter 1 of the Director of Audit’s Report No. 75) and the Government’s efforts in tackling shoreline refuse (the subject matter of this review). This review focuses on the following areas:

- (a) monitoring of shoreline cleanliness by EPD (PART 2);
- (b) clean-up operations by AFCD (PART 3);
- (c) clean-up operations by LCSD (PART 4);
- (d) clean-up operations by FEHD (PART 5); and

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**Note 9:** *Images of 360-degree landscape are captured every 30 minutes in day time and uploaded to a central server automatically via 4G data transmission for review. The system is powered by rechargeable batteries making use of solar energy through solar panels.*

## **Introduction**

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- (e) other related issues (PART 6).

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**

1.14 The Director of Environmental Protection, the Director of Agriculture, Fisheries and Conservation, the Director of Leisure and Cultural Services, and the Director of Food and Environmental Hygiene agree with the audit recommendations.

## **Acknowledgement**

1.15 During the audit review, in light of the outbreak of coronavirus disease (COVID-19), the Government had implemented various special work arrangements and targeted measures for government employees, including working from home. Audit would like to acknowledge with gratitude the full cooperation of the staff of EPD, AFCD, LCSD, FEHD and MD during the course of the audit review amid the COVID-19 epidemic.

## **PART 2: MONITORING OF SHORELINE CLEANLINESS BY ENVIRONMENTAL PROTECTION DEPARTMENT**

2.1 This PART examines EPD's work in monitoring the cleanliness of coastal sites, focusing on:

- (a) inspection of coastal sites (paras. 2.4 to 2.20); and
- (b) protocol for handling surge of marine refuse (paras. 2.21 to 2.27).

### ***EPD's role in monitoring of shoreline cleanliness***

2.2 ***EPD's role.*** As the secretariat of the Working Group, EPD plays a vital role in coordinating and strengthening member departments' efforts to address marine refuse problems in Hong Kong, which includes conducting thematic studies, formulating responding strategies based on the study findings, reviewing the effectiveness of these strategies and exploring various measures with a view to continuously improving the cleanliness of shorelines. Apart from co-ordinating the efforts of relevant departments, EPD also carries out community education and public engagement to enhance the public awareness of keeping the shorelines clean. The publicity and public engagement work of EPD is elaborated in PART 6.

2.3 ***Monitoring work.*** EPD has been monitoring the cleanliness condition of priority sites (see para. 1.9(a)) since April 2015. It conducts regular inspections to monitor the improvement made at the priority sites, and to evaluate the effectiveness of the enhanced clean-up. According to EPD, for the purpose of regular monitoring and review of priority sites, the daily refuse amount is needed for effective analysis of the accumulation and distribution patterns of marine refuse, so as to promptly alert departments to take preventive measures and actions in time if any anomaly is observed. Since April 2017, departments responsible for cleaning up marine refuse (i.e. AFCD, FEHD, LCSD and MD) have been providing monthly returns on the daily refuse amount collected from sites under their jurisdictions and complaint data to EPD for consolidation and monitoring.

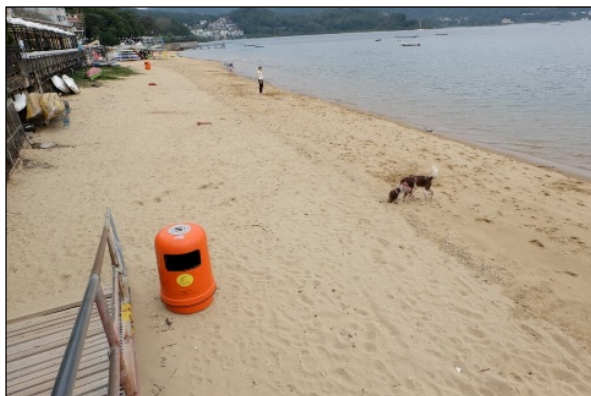
## **Inspection of coastal sites**

2.4        *Shoreline Cleanliness Grading System.* EPD conducts regular inspections at specific coastal sites which are more prone to marine refuse accumulation, and assesses the cleanliness conditions of these sites using a Shoreline Cleanliness Grading System (see Figure 5). According to EPD, if more than one inspection was conducted to the same site during a reporting period, the cleanliness grading would be calculated by taking the average of all the gradings taken. The inspection arrangements (e.g. inspection frequency, number of coastal sites covered and mode of service delivery (i.e. in-house staff versus outsourcing)), which have been evolving since the commencement of inspections in April 2015, are elaborated in paragraphs 2.5 to 2.7.

Figure 5

Shoreline Cleanliness Grading System

Clean (Grade 1)



Satisfactory (Grade 2)



Fair (Grade 3)



Unsatisfactory (Grade 4)



Poor (Grade 5)



Source: EPD records

## **Monitoring of shoreline cleanliness by Environmental Protection Department**

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2.5 *Inspections from April 2015 to October 2017.* EPD had put in place an arrangement to monitor the improvements made at the 27 priority sites recommended in the 2015 Study (see para. 1.9(a)). According to the arrangement, EPD staff would inspect each priority site at least once in both wet and dry seasons to assess the cleanliness condition. If a site was graded as “Grade 4 — Unsatisfactory” or “Grade 5 — Poor”, relevant departments would be requested to take follow-up actions. From April 2015 to October 2017 (i.e. before the finalisation of the revised priority site list in November 2017 — see para. 1.10), EPD conducted 339 inspections to the 27 priority sites and reported the results to the Working Group in May 2016, January 2017 and January 2018 respectively.

2.6 *Inspections from November 2017 to December 2019.* Since November 2017 when the new list of 29 priority sites (see para. 1.10) was finalised, EPD had arranged its staff to conduct inspections to the newly listed priority sites and adopted a new monitoring regime (see Table 1) to assess and rate the cleanliness conditions of these sites, as agreed with the departments concerned. The new monitoring regime, which was modelled on the Shoreline Cleanliness Grading System with five levels, helped responsible departments prioritise their regular or special clean-up actions. If any priority site was graded as “Grade 3 — Fair” or worse, EPD would immediately notify the relevant departments to follow up and arrange clean-up as soon as possible. From November 2017 to December 2019, EPD staff conducted 691 inspections to the 29 priority sites.

**Monitoring of shoreline cleanliness  
by Environmental Protection Department**

**Table 1**

**Monitoring regime for priority sites  
(November 2017 to December 2019)**

<b>Grade</b>	<b>Description</b>	<b>Inspection frequency</b>	<b>Follow up action</b>
1: Clean	No refuse or scattered refuse is seen over the whole coastal area, including the intertidal region and the edge of vegetation	Re-inspect within 6 months	<ul style="list-style-type: none"> <li>• No specific follow-up action is required</li> </ul>
2: Satisfactory	A few pieces of refuse are seen along the high tide mark and low tide mark; and scattered refuse is seen over the intertidal region and other parts of the coastal area	Re-inspect within 4 months	<ul style="list-style-type: none"> <li>• Regular clean-up is appropriate and should be continued</li> </ul>
3: Fair	Marked deposition of refuse in the intertidal region and along the edge of vegetation	Re-inspect within 3 months	<ul style="list-style-type: none"> <li>• Carry out clean-up operation as soon as possible after the referral</li> </ul>
4: Unsatisfactory	Marked deposition of refuse over the whole coastal area and it is hard to avoid stepping on refuse when walking	Re-inspect within 2 months	<ul style="list-style-type: none"> <li>• Carry out clean-up operation as soon as possible after the referral</li> <li>• Consider enhancing regular cleansing frequency</li> </ul>
5: Poor	The whole coastal area is badly covered with refuse and one has to trudge through the refuse when walking	Re-inspect within 1 month	<ul style="list-style-type: none"> <li>• Carry out clean-up operation as soon as possible after the referral</li> <li>• Consider enhancing regular cleansing frequency</li> <li>• Consider special joint departmental clean-up operation, where appropriate</li> </ul>

*Source: EPD records*

## **Monitoring of shoreline cleanliness by Environmental Protection Department**

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2.7 *Inspections since mid-January 2020.* In the 2018 Policy Address, the Government pledged to put in more efforts in enhancing the shoreline surveillance and clean-up programme to a territorial scale (see para. 1.11). To cope with this enlarged scale of monitoring, EPD engaged a contractor to: (a) inspect and assess the cleanliness condition of 119 coastal sites (comprising 29 priority sites monthly and 90 non-priority sites quarterly — Note 10); and (b) collect and collate information on the cleanliness conditions of these sites in terms of marine refuse. In December 2019, a site monitoring contract was awarded in the sum of \$0.9 million covering a period of 14 months from mid-January 2020 to March 2021. From mid-January to mid-August 2020, EPD contractor conducted 508 inspections to the 119 coastal sites (including 234 inspections to the 29 priority sites). Apart from engaging a contractor to conduct on-site inspections of coastal sites, EPD also commenced a trial project to deploy unmanned aircraft systems (UAS) for shoreline surveillance on a regular and ad hoc basis. The project comprises two phases. In the first phase, 64 coastal sites are targeted for quarterly and emergency inspections with 33 coastal sites covered by both on-site and UAS inspections for comparison and evaluation of the two inspection methods. In the second phase, the number of coastal sites monitored by UAS will be tentatively increased to 94, subject to review. The UAS service of the first phase was procured by quotation in November 2019. The contract was awarded in March 2020 with a total contract sum of about \$1 million for a period of 14 months from March 2020 to May 2021. UAS inspections commenced in May 2020.

### ***Audit findings on inspections of coastal sites by EPD staff***

2.8 *Inspections by EPD staff.* As EPD adopted a new monitoring regime for the inspection of priority sites in November 2017 (see para. 2.6), Audit examination focused on the inspections in the 26-month period from November 2017 to December 2019. Audit examined the inspection records (which mainly comprised a database of inspection details (e.g. date and time of inspection, coastal site inspected, and cleanliness grading given in each inspection) and selected inspection reports) and the findings are summarised in paragraphs 2.9 to 2.11.

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**Note 10:** *The contractor may also be required to carry out ad hoc inspections of these 119 sites or other specific sites, upon instruction from EPD, and such service charge shall be determined in accordance with the unit rate specified in the contract.*



**2.9      *Some re-inspections not conducted within the planned timeframe.***

According to the monitoring regime, it was planned that priority sites would be re-inspected within one to six months based on the cleanliness grading in the previous inspection. Audit analysis of the 691 inspections found that 24 re-inspections, involving 13 of the 29 priority sites, were conducted with deviations from the planned timeframe (up to a delay of 106 days in one case). In response to Audit's enquiry, in September and October 2020, EPD said that:

- (a) short-term rescheduling within one week due to sudden change of weather conditions or logistics arrangement, reprioritisation of work duty and resources in response to ad hoc urgent tasks, marine emergency incidents or marine refuse surge after inclement weather was considered acceptable. According to EPD's records, 8 of the 24 re-inspections fell within the one-week variation;
- (b) it had also arranged with the Government Flying Service to conduct helicopter surveillance to regularly monitor the cleanliness condition at the 29 priority sites and other coastal areas. 9 re-inspections were covered by helicopter surveillance flights, including the case with a delay of 106 days; and
- (c) regarding the inspections conducted using helicopter surveillance flights, inspection reports and records of cleanliness gradings had not been prepared and documented because: (i) the information obtained by helicopter aerial surveillance was different from that by on-site inspections as the angle of photographs taken and the surveillance area varied in each flight; and (ii) the Shoreline Cleanliness Grading System was not applicable, and the inspection results of individual sites were recorded in the format of photographs.

Audit noted that EPD would assess the cleanliness conditions of sites based on the photographs after completion of surveillance and make referrals to the relevant departments to follow up if the cleanliness condition of a site was found unsatisfactory.

**2.10      *Inconsistencies in documentation of inspection.*** Audit examined the inspection reports prepared by EPD staff and found the following inconsistencies:

## Monitoring of shoreline cleanliness by Environmental Protection Department

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- (a) ***Coverage of inspection locations.*** During an inspection, EPD staff would normally take photographs in different locations for assessing the overall cleanliness condition of a priority site. According to EPD:
- (i) EPD on-site inspection staff were trained and fully aware that they were required to inspect the whole site and take representative photographs as far as practicable along the inspection route. The photographs taken and the markings made on the location map in an inspection report were indicative only and did not necessarily match with the entire inspection route and the coverage of the inspection; and
  - (ii) to improve clarity and consistency in presentation, EPD standardised the reporting format of the inspection report after a review exercise conducted in July 2019. Since then, field staff had been required to include photographs taken at designated points of each site in the inspection report.

Audit examination of 15 inspection reports (for inspections conducted after July 2019) however found that in 4 inspection reports, photographs of some designated points were not included. This might affect the comparability of the inspection results (i.e. the improvement or deterioration of cleanliness condition of the priority sites over time). According to EPD, among 2 of the 4 occasions, some designated points had not been inspected because those points were inaccessible at the material time of the inspection due to high tide and threat of dog attack respectively. As for the other two occasions which involved the same priority site, only 1 or 2 out of 8 designated points had been skipped due to limited inspection time but the impact on the overall inspection results was minimal. However, Audit noted that the reasons for omission were not documented in the inspection reports; and

- (b) ***Supervisory checks of inspection reports.*** According to EPD, supervisory checks were introduced after the review exercise in July 2019. At least two staff would be required for each inspection while the rank of staff is contingent on staff availability. After an inspection, the field staff would prepare and submit a draft inspection report to a senior staff for checking and vetting. Based on a sample check of the 15 reports on inspections conducted after July 2019 (see (a) above), Audit found that there were inconsistencies in the documentation of supervisory checks. Specifically in

6 cases, the supervisory checks were not documented in the inspection reports. There were only e-mail records showing that the inspection reports had been submitted to the supervisors. In response to Audit's enquiry, in October 2020, EPD said that after the introduction of supervisory checks in July 2019, the method of recording the checking had not been fully aligned among the supervisors, with the format of the inspection report including the documentation of supervisory checks still evolving in the subsequent few months until it was further enhanced in January 2020 for use by both the contractor and in-house staff.

2.11 *Inspection results not reported to Working Group and TFMR.* To keep the Working Group informed of the cleanliness condition of the priority sites, EPD reported the monitoring records and statistics of priority sites from April 2015 to October 2017 during the meetings of the Working Group held in May 2016, January 2017 and January 2018 (see para. 2.5). However, Audit noted that after the revamp of the Working Group in January 2018 (see para. 1.5), EPD had ceased reporting the monitoring records and statistics of priority sites from November 2017 to December 2019 in the subsequent meetings of the Working Group and TFMR (Note 11). In the meeting of TFMR held in July 2020, EPD reported the results of the contractor's inspections for the first half of 2020. In response to Audit's enquiry, in September 2020, EPD said that:

- (a) since the revamp of the Working Group in January 2018 with its terms of reference expanded to cover response to marine environmental incidents, the meeting agenda had been strategically focused on salient issues of planning for emergency response and resolving special refuse accumulation problems at some specific locations;
- (b) there was no need to spend time in its meetings to report and discuss the monitoring records and statistics of the priority sites which could be readily conveyed to member departments any time with the most updated information; and
- (c) as the shoreline cleanliness monitoring programme had been scaled up to cover 90 non-priority sites since January 2020, EPD took the initiative to

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**Note 11:** *The terms of reference of TFMR includes keeping track of the cleanliness condition of Hong Kong waters and coastal areas to evaluate the need for further improvement.*

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report the initial monitoring results at the TFMR meeting in July 2020 and would also do so in the coming Working Group meeting.

2.12 *In-house inspections not pursued in future.* EPD has ceased deploying its own staff to conduct routine inspections of coastal sites and engaged a contractor to conduct routine inspections since mid-January 2020. In response to Audit's enquiry on the audit findings in paragraphs 2.9 to 2.11, in September 2020, EPD said that resuming the deployment of its own staff to conduct shoreline inspections in future was not considered cost-effective and would not be pursued. In Audit's view, EPD needs to draw on the experience of the in-house inspections in monitoring contractors' inspections of coastal sites and reporting of inspection results.

### ***Need to promulgate cleanliness conditions of coastal sites***

2.13 *Cleanliness conditions of coastal sites not disseminated.* During the period from the commencement of inspections of coastal sites in April 2015 to August 2020, EPD did not regularly promulgate in the public domain the cleanliness condition of coastal sites. In the Working Group meeting held in May 2016, the Chairman mentioned that it would be worthwhile to announce the monitoring results and relevant data to showcase the Working Group's efforts and suggested posting the relevant information on the Clean Shorelines website for public consumption. However, no records were available showing that actions had been taken to take forward the Chairman's remarks. Moreover, during a public engagement session held with community groups in September 2018, an NGO commented that there was a lack of transparency in priority site inspections. In response, EPD said that the monitoring only started in April 2015 and the monitoring data collected was not yet ready for public access. In Audit's view, information on the cleanliness condition of coastal sites is useful for NGOs (e.g. green groups) in planning their voluntary clean-up events. With the lapse of time and the increased inspection coverage and frequency since mid-January 2020, there are merits for EPD to disseminate the information on cleanliness conditions of coastal sites through the Clean Shorelines website.

### ***Need to keep in view coastal sites under shoreline cleanliness monitoring programme***

2.14 *Priority sites identified in 2015 Study.* As an initiative under enhancing efforts to remove refuse from the marine environment, the 2015 Study identified 27 priority sites which were more prone to refuse accumulation and subject to more

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complaints (see para. 1.6(e)). The sites were selected by making reference to the complaints/concerns expressed by the general public and government departments, refuse collection statistics, refuse dispersion modelling results, and findings/information provided by NGOs. To improve the cleanliness of these priority sites, the Government has implemented various improvement measures including enhancement of the cleaning arrangements and frequencies since April 2015.

2.15 **2017 review of priority sites.** According to EPD, since the implementation of the improvement measures, almost half of the priority sites showed sustained improvements in the cleanliness condition, achieving better average cleanliness gradings after two-years' efforts in implementing the improvement measures. This showed that the improvement measures and the enhanced cleaning efforts had generally delivered positive results. In April 2017, EPD commenced a review of the priority sites based on the monitoring data collected in the first two years of implementation of improvement measures to explore room for better resource redeployment, focusing the cleaning efforts on other sites requiring attention. The list of priority sites was updated in November 2017 (see para. 1.10).

2.16 **Improvement in cleanliness gradings of priority sites.** As shown in Table 2, the cleanliness condition of the existing priority sites generally improved from January 2018 to mid-August 2020.

**Table 2**

**Average cleanliness gradings of 29 existing priority sites  
(January 2018 to mid-August 2020)**

Average cleanliness grading	Number of priority sites		
	2018	2019	2020
1 to <2	12	10	13
2 to <3	15	15	14
3 to <4	–	4	2
4 to <5	2	–	–
Total	29	29	29

Source: Audit analysis of EPD records

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2.17 *Reasons for not conducting another review of priority sites.* Since the list of priority sites was updated in November 2017, EPD has not conducted another review of the priority sites. As shown in Table 2 in paragraph 2.16, 27 (93%) of 29 priority sites identified in November 2017 were accorded an average cleanliness grading better than 3 from January to mid-August 2020. However, during the same period, some non-priority sites attained worse cleanliness gradings as compared with the priority sites. A notable example is the Brothers Marine Park, which was accorded an average cleanliness grading of 3.67. Audit considers that there are merits for EPD to consider conducting a review of the priority sites so that cleansing resources could be deployed more effectively. In response to Audit's enquiry, in September 2020, EPD said that:

- (a) the in-house shoreline cleanliness monitoring programme (i.e. the inspections of priority sites by EPD staff from November 2017 to December 2019), in which the frequency of re-inspection of a priority site was set by reference to the cleanliness level recorded, had been replaced by contract services with specified requirements on site coverage and inspection frequency; and
- (b) as and when the site monitoring contract was due for renewal, an overall review of the said requirements should be conducted holistically with due regard to changes in cleanliness and other circumstances of individual sites regardless of whether they were current or former priority sites. There was no need to duplicate efforts to review the priority sites as conducted in 2017.

2.18 *Need to keep in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme.* Audit notes that EPD has ceased the practice of reviewing priority sites (see para. 2.17(a)) and will review the site monitoring contract requirements on coastal sites in the shoreline cleanliness monitoring programme to take stock of the conditions of coastal sites (both priority sites and non-priority sites) when the contract is due for renewal in March 2021. In Audit's view, EPD should continue to keep in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme taking into account changes in cleanliness (see para. 2.16) and other circumstances of individual sites, and make use of UAS inspections to supplement on-site inspections, taking into account the results of the UAS trial project (see para. 2.7).

## **Audit recommendations**

**2.19**      **Audit has *recommended* that the Director of Environmental Protection should:**

- (a)      **draw on the experience of the in-house inspections in monitoring contractors' inspections of coastal sites and reporting of inspection results;**
- (b)      **consider disseminating the information on cleanliness conditions of coastal sites through the dedicated Clean Shorelines website; and**
- (c)      **continue to keep in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme and make use of UAS inspections (currently under trial) to supplement on-site inspections when reviewing the site monitoring contract requirements in future.**

## **Response from the Government**

**2.20**      The Director of Environmental Protection agrees with the audit recommendations.

## **Protocol for handling surge of marine refuse**

**2.21**      ***Protocol for handling surge of marine refuse.*** In May 2017, EPD and the authorities in Guangdong Province launched a regional notification and alert mechanism allowing one side to notify the other of heavy rain or significant environmental incidents. In conjunction with the mechanism, EPD has compiled a protocol for handling surge of marine refuse in Hong Kong (the Protocol), which outlines the established arrangements for action departments (i.e. AFCD, FEHD, LCSD and MD) to handle surge of marine refuse at Hong Kong's waters and coastal areas owing to typhoon, heavy rainfalls, or significant environmental incidents. According to EPD, provision of early advice to the departments concerned of potential surge of marine refuse will help them better mobilise resources for timely clean-up. The conditions for activation of the Protocol include:

- (a)      tropical cyclone signal number 8 or above;

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- (b) heavy rainfall affecting Hong Kong (red or black rainstorm warning signal);
- (c) heavy rainfall in the Guangdong cities;
- (d) marine refuse pollution report from the Mainland (i.e. when EPD receives such reports from the Mainland authorities via the established mechanism under the Hong Kong-Guangdong Marine Environmental Management Special Panel or media reports about the Mainland situation); and
- (e) marine refuse pollution report in Hong Kong (i.e. when EPD receives such report from the public, media, other government departments which might involve serious pollution, illegal dumping, impact to the marine environment, or have wide media interest, political or policy implications about pollution in Hong Kong).

In conditions (a) and (b), the Protocol will be activated automatically, without EPD's notification, after the issuance of signals by the Hong Kong Observatory. As regards conditions (c), (d) and (e), EPD will notify the action departments of the activation of the Protocol and potentially affected water bodies and coastal locations. For instance, EPD will determine whether to activate the Protocol based on the available information when a marine refuse incident notification is received from the Mainland or reported in Hong Kong (e.g. by media). EPD will form an action team to coordinate follow-up actions and inform the relevant action departments of the potentially affected areas and request them to report on actions taken (e.g. amount of refuse collected and actions taken with photographs) at locations affected on a daily basis. EPD action team will also monitor the progress of clean-up actions and refuse accumulation, and keep its senior management informed of the progress. From May 2017 to mid-July 2020, EPD issued 48 notifications to the relevant departments under the Protocol.

### ***Handling of pork hock incident***

2.22 ***Pork hock Incident.*** On 11 July 2020, local media reports revealed that a large quantity of pork hocks had been found on the beaches in Humen, Dongguan, Guangdong Province. From 13 to 16 July 2020, media reports revealed that pork hocks had been found on the beaches in Tuen Mun District and Tsuen Wan District. Audit's site visit to Lung Kwu Tan in Tuen Mun on 14 July 2020 also found a number of pork hocks (see Photographs 1(a) and (b)).



**Photographs 1(a) and (b)**

**Pork hocks found during Audit's site visit to Lung Kwu Tan**



*Source: Photographs taken by Audit staff on 14 July 2020*

**2.23 Follow-up actions taken by EPD.** Upon Audit's enquiry on whether EPD had activated the Protocol in light of the pork hock incident, in August 2020, EPD said that:

- (a) for the purpose of the Protocol, "marine refuse" referred to solid waste resulting from human activities, with unidentifiable owner(s) in general, that had entered the marine environment. Marine refuse under consideration largely resembled municipal solid waste and could be broadly classified into materials including plastics, metal, glass, processed timber, paper, porcelain, rubber and cloth; and
- (b) the pork hock incident arising at some beaches in Tuen Mun did not meet the classification and conditions for activation of the Protocol. Notwithstanding this, upon receiving a media enquiry of the incident on 13 July 2020, EPD had:
  - (i) promptly notified and liaised with relevant departments to arrange clean-up operations as soon as possible;
  - (ii) approached the Mainland authority immediately to gather and verify relevant information as speculated in media reports; and

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- (iii) stepped up shoreline monitoring of Tuen Mun and Tsuen Wan beaches and conducted surveillance visits to confirm that other areas in Lantau and Southern districts had not been affected.

2.24 Under the framework of the Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection, Hong Kong and Guangdong aim to continue to enhance exchange and communication on various regional marine environmental matters. According to EPD, while the pork hocks found on the beaches did not meet the broad classification of marine refuse and hence the incident did not meet the conditions for activating the Protocol (see para. 2.23(a) and (b)), it had taken follow-up actions on the pork hock incident in response to a media enquiry. In light of the public concerns about such incidents and that in the pork hock incident EPD started taking actions only after receiving a media enquiry (see para. 2.23(b)), in mid-September 2020, Audit made an enquiry with EPD on whether lessons could be drawn from the incident for a timely and effective response (e.g. issuing earlier notifications to relevant departments for taking follow-up actions) in similar incidents in future (e.g. when a large quantity of refuse not falling into the broad classification of marine refuse is found on the beaches in Guangdong Province), such as:

- (a) taking follow-up actions (e.g. alerting relevant departments) upon receipt of media reports on similar incidents not only in Hong Kong, but also in Guangdong Province (e.g. the local media reports about the pork hock incident in Dongguan on 11 July 2020), which might lead to surge of marine refuse in Hong Kong; and
- (b) exploring with the Mainland authority on the feasibility of alerting EPD of similar incidents in future.

2.25 In late September 2020, in response to Audit's enquiry, EPD said that:

- (a) EPD had been staying vigilant on media reports of environmental incidents in Guangdong Province, and was aware of the media reports on 11 July 2020. The suggested measures in paragraph 2.24(a) and (b) had already been in place and did not constitute any lesson to learn; and
- (b) EPD had set up a dedicated communication channel with the Mainland authority for fast and timely notifications and feedback of information. The

crux of the issue was that the pork hock incident was indeed an unprecedented one and its occurrence was unpredictable. In the material time, no vessel incident, or incident of fallen cargo or enforcement action taken in the vicinity of Humen was reported. The source and quantity of the pork hocks remained unknown. Unlike floating refuse, pork hocks usually sank in water and were unlikely to be carried over a long distance by tides and waves. Therefore, it could not be anticipated that such material could travel over a long distance in the marine environment. As such, it could only be hindsight that the Mainland authority could have anticipated on 11 July 2020 the subsequent landing of the pork hocks on the beaches in Hong Kong and issued a notification to EPD, or that EPD could have anticipated the same from reading the news on 11 July 2020 and triggered an earlier alert to prepare for clean-up.

While noting that EPD had taken actions in handling the incident in collaboration with relevant departments even though it considered the incident beyond the scope of the Protocol, Audit considers that there are merits for EPD to draw on the experience in the incident to update the Protocol, where appropriate, to facilitate a more structured response in future (see para. 2.24).

## **Audit recommendation**

**2.26      Audit has *recommended* that the Director of Environmental Protection should draw on the experience in the pork hock incident to update the Protocol, where appropriate.**

## **Response from the Government**

**2.27      The Director of Environmental Protection agrees with the audit recommendation.**

## **PART 3: CLEAN-UP OPERATIONS BY AGRICULTURE, FISHERIES AND CONSERVATION DEPARTMENT**

3.1 This PART examines the clean-up operations of Marine Parks and Marine Reserve (Note 12) by AFCD, focusing on:

- (a) monitoring of clean-up operations (paras. 3.2 to 3.9); and
- (b) audit inspections of the Marine Parks and Marine Reserve (paras. 3.10 to 3.23).

### **Monitoring of clean-up operations**

3.2 AFCD is responsible for the cleanliness of six Marine Parks, one Marine Reserve (see Figure 1 in para. 1.3(b)), and shorelines of 24 country parks and 11 designated special areas outside the country parks in Hong Kong. The cleansing work of the areas concerned is mainly outsourced to contractors. The Country and Marine Parks Branch of AFCD is responsible for monitoring the work carried out by its contractors. As shown in Table 3, as at 1 July 2020, the cleansing work of the Marine Parks and Marine Reserve was outsourced to 3 contractors under 5 recurrent contracts. From 2015 to 2019, AFCD collected 1,670 tonnes (averaging 334 tonnes per annum) of marine refuse in its Marine Parks and Marine Reserve (Note 13).

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**Note 12:** *A marine park is a large area of sea which can be set aside for conservation and recreation purposes such as swimming, scuba diving, canoeing, sailing and underwater photography. By comparison, a marine reserve is a smaller area of sea but with high conservation value which is reserved for conservation, scientific and educational study. Control will be more stringent in marine reserves. Actually, most of the activities will be prohibited in marine reserves and only prior authorised scientific studies and educational activities will be allowed. The Marine Parks Ordinance (Cap. 476) provides for the designation, control and management of marine parks and marine reserves for the purpose of marine conservation, and stipulates the Director of Agriculture, Fisheries and Conservation as the Country and Marine Parks Authority. The total sea area of the Marine Parks and Marine Reserve was some 4,050 hectares as of July 2020.*

**Note 13:** *According to AFCD, the marine refuse quantity included the litter collected from land-based trash bins in the Hoi Ha Wan and the Tung Ping Chau Marine Parks, and from the barbeque sites of country park on Tung Ping Chau.*

Table 3

**Details of AFCD recurrent cleansing contracts  
(1 July 2020)**

Item	Marine Park/ Marine Reserve	Contractor (Period)	Number of designated location	Frequency of cleansing per location	Awarded contract price (\$)
1	Cape D'Aguilar	Contractor A (1.4.2020 to 31.3.2022)	1	4 days per month	660,000
2	Hoi Ha Wan and Yan Chau Tong	Contractor A (3.4.2020 to 2.4.2021)	3	2 to 6 days per week	1,201,800
3	Sha Chau and Lung Kwu Chau	Contractor A (11.5.2020 to 10.5.2022)	2	2 days per week	1,066,880
4	The Brothers	Contractor B (25.11.2019 to 24.11.2021)	2	Once every month	560,000
5	Tung Ping Chau	Contractor C (14.2.2020 to 13.2.2021)	3	Daily to 3.5 days per week	1,325,400

Source: AFCD records

Remarks: As an interim arrangement up to May 2021, the clean-up service of marine refuse at Southwest Lantau Marine Park, which was designated as a marine park in April 2020, was provided by the contractor of FEHD.

**3.3 Cleansing contracts.** The objectives of providing cleansing services through outsourcing are to ensure that: (a) the beaches and coastal areas (i.e. any area near the high water mark and the edge of seawater) at the Marine Parks and Marine Reserve are kept clean; (b) the refuse washed up and remained on the beaches is removed; and (c) the waters within the Marine Parks are kept clean. According to the contract provisions, contractors are required to carry out cleansing services according to the schedules and particulars as laid down in the contracts, such as frequency of cleansing services, number of cleaners to be deployed, and working hours of each cleaner for each operation. Monitoring staff of AFCD monitor the contractors' operations and are required to complete a Daily Site Inspection Form or any of the two other inspection forms (Types I and II — see Table 4 in para. 3.4)

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after each inspection. Audit examination found scope of improvements in monitoring of cleansing operations as elaborated in paragraphs 3.4 to 3.7.

### ***Need to improve the inspection reporting requirements***

3.4 As shown in Table 4, the Daily Site Inspection Form was used by AFCD staff in 3 Marine Parks (Note 14) while two other types of inspection forms were used in the remaining 2 Marine Parks and the Marine Reserve. Audit noted that some important information was missing in the inspection forms. For example, the inspection forms used in Hoi Ha Wan, Yan Chau Tong and Tung Ping Chau Marine Parks and the Cape D'Aguilar Marine Reserve recorded the time of inspection by AFCD staff, but not the arrival time of the contractors' staff. On the other hand, for the remaining two Marine Parks, the inspection form used did not record the time of inspection by AFCD staff but recorded the arrival time of the contractors' staff. Besides, all inspection forms did not record the departure time of the contractors' staff. As a good practice to facilitate the monitoring work of AFCD staff and to ensure the quality of each inspection, Audit considers that AFCD should improve the inspection reporting requirements of cleansing services.

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**Note 14:** *Clean-up service provided in the Southwest Lantau Marine Park, which was designated in April 2020, was covered by the clean-up contract of FEHD. As such, FEHD staff carried out the monitoring roles.*

**Table 4**

**Inconsistencies found in the inspection forms used by  
AFCD monitoring staff  
(April 2019 to March 2020)**

<b>Item</b>	<b>Marine Park/ Marine Reserve</b>	<b>Inspection form used</b>	<b>Recording inspection time of AFCD staff</b>	<b>Recording arrival time of contractors' staff</b>
1	Cape D'Aguilar	Other inspection form (Type I)	✓	✗
2a	Hoi Ha Wan (Note)	Daily Site Inspection Form	✓	✗
2b	Yan Chau Tong (Note)	Daily Site Inspection Form	✓	✗
3	Sha Chau and Lung Kwu Chau	Other inspection form (Type II)	✗	✓
4	The Brothers	Other inspection form (Type II)	✗	✓
5	Tung Ping Chau	Daily Site Inspection Form	✓	✗

*Source: Audit analysis of AFCD records*

*Note: The Hoi Ha Wan and Yan Chau Tong Marine Parks were under the same cleansing contract.*

***Need to take effective follow-up actions on cases of suspected absence from duty of contractors' staff***

3.5 According to the provisions in AFCD's cleansing contracts, contractors should ensure that the number of cleaners deployed to perform a cleansing operation and the number of working hours are not less than that stipulated in the contracts. For any absence of cleaners from duty, the contractor should provide prompt replacement, and failure to comply with the requirement may result in reasonable sums being deducted from the monthly payments payable to the contractor. Audit

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examined AFCD's 772 of 781 inspection records (Note 15) of 4 Marine Parks from 1 April 2019 to 31 March 2020 (see Table 5) and revealed the following issues:

**Table 5**  
**Number of inspections carried out by AFCD in 4 Marine Parks**  
**(1 April 2019 to 31 March 2020)**

Marine Park	Number of inspections carried out	No. of cases where AFCD did not find contractors' staff on site/contractors' staff left early
Tung Ping Chau	207	13 (6%)
Hoi Ha Wan	362	1 (1%)
Yan Chau Tong	116	4 (3%)
Sha Chau and Lung Kwu Chau	87	— (—)
Overall	772	18 (2%)

*Source: Audit analysis of AFCD records*

(a) ***Tung Ping Chau, Hoi Ha Wan and Yan Chau Tong Marine Parks:***

- (i) in 18 (3%) site inspections in the 3 Marine Parks carried out by AFCD staff, as shown in the inspection forms, they either did not find the contractors' staff on site, or found that contractors' staff left early:
  - in 6 of the 18 cases, AFCD staff successfully contacted the contractors and required the latter to provide the services on another day. In 1 of the 6 cases, the contractor reported in the monthly attendance record that its staff had provided services on the date where AFCD did not find its staff present on site; and

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**Note 15:** *In the remaining nine cases, the patrol vessels of AFCD could not reach the sites due to reasons such as bad weather.*



- for the remaining 12 cases, AFCD staff either did not document any follow-up actions taken (7 cases), gave up calling the contractors after several unsuccessful phone calls (3 cases), or the contractor informed AFCD that the duration of cleansing work had to be shortened (2 cases) because of bad weather, and yet no information on the dates of replacement work was recorded. Moreover, in all 12 cases, the contractors reported in the monthly attendance records that their staff had provided services on the dates where AFCD did not find contractors' staff present on site or found that the contractors' staff left early as recorded in the inspection forms.

As the monthly attendance records are used by the contractors to claim payments from AFCD, Audit considers that AFCD has to ascertain whether payments have been made for cases of suspected absence from duty of contractors' staff; and

- (ii) Audit also found that in 5 out of 17 cases where the scheduled dates of services were swapped, AFCD did not record in the inspection forms whether any inspections had been carried out on alternative dates. However, in 3 out of the 5 cases, AFCD had recorded the presence of contractors' vessels on sites in other records (such as patrol log books); and

- (b) ***Sha Chau and Lung Kwu Chau Marine Park.*** Of the 87 inspections carried out by AFCD staff in Sha Chau and Lung Kwu Chau Marine Park from 1 April 2019 to 31 March 2020, the contractor's staff were found in the pertinent sites in all cases. Audit also noted that there were other 99 inspections cancelled over the period because the AFCD staff concerned were occupied by other tasks. The monitoring procedures of AFCD have not specified a minimum inspection frequency for AFCD staff over a period of time.

Audit considers that AFCD should take effective follow-up actions on cases of suspected absence from duty of contractors' staff and specify a minimum inspection frequency for AFCD staff with reference to FEHD monitoring requirements (see para. 5.6).

***Need to verify the quantity of marine refuse collected***

3.6 Audit examination of 5 recurrent AFCD cleansing contracts (in force as of August 2020) revealed that only 2 contracts specifically required the contractors to count the marine refuse collected. In practice, AFCD required all contractors to report the quantity of marine refuse collected. The monitoring procedures of AFCD did not require its staff to count the refuse. As such, AFCD could not ascertain whether the statistics reported by the contractors were accurate. Audit notes that the refuse statistics are reported to LegCo from time to time. In Audit's view, AFCD should consider the merit of requiring its staff to verify the quantity of marine refuse reported by the contractors, such as test counting the refuse.

***Need to enhance the monitoring of contractors' work***

3.7 Audit examined the provisions in the 5 recurrent cleansing contracts of the Marine Parks and Marine Reserve (in force as of August 2020) and found room for improvement in the following areas:

- (a) ***Assessment of cleanliness level.*** All the cleansing contracts of AFCD's Marine Parks and Marine Reserve specified that the contractors should carry out service to the satisfaction of the government representative. A monitoring staff of AFCD is required to signify his acceptance (e.g. put a tick) of the work performed on the inspection form (Note 16). In this connection, internal guideline of AFCD does not provide clear assessment criteria for assessing the level of satisfaction with the services provided by a contractor. Audit considers that AFCD should issue guidelines on the assessment of the quality of services of the contractors. For example, AFCD can make reference to EPD's Shoreline Cleanliness Grading System for the cleanliness level (see para. 2.4);
- (b) ***Evidence of work performed by contractors.*** The cleansing contract of Tung Ping Chau Marine Park specified that the contractor should keep and submit record showing in detail the service performed each time, such as digital images before each service and after completion of the service

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**Note 16:** *Audit's interview of AFCD staff responsible for monitoring contractors' performance in the Sha Chau and Lung Kwu Chau revealed that when completing the inspection records, based on their experience, monitoring staff put a tick on the inspection form to signify their acceptance of the cleansing work performed.*

whereas other contracts do not require the contractors to submit such images. Audit considers that AFCD should require contractors to provide additional evidence on the work performed by the contractors' staff, e.g. digital images and video clips before and after completion of the cleansing service; and

- (c) ***Attendance of contractors' staff.*** The contract provisions of the cleansing contracts of the 5 Marine Parks and the Marine Reserve did not require the contractors to report the arrival and departure times of their staff. In practice, the contractors of the Sha Chau and Lung Kwu Chau Marine Park and the Brothers Marine Park informed AFCD their arrival times. In Audit's view, AFCD should consider requiring contractors to report the arrival and departure times of their staff for each cleansing operation in future contracts.

## **Audit recommendations**

**3.8      Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:**

- (a) **improve the inspection reporting requirements of cleansing services;**
- (b) **take effective follow-up actions on cases of suspected absence from duty of contractors' staff and specify a minimum inspection frequency for AFCD staff;**
- (c) **consider the merit of requiring AFCD staff to verify the quantity of marine refuse reported by the contractors, such as test counting the refuse; and**
- (d) **take measures to enhance monitoring of contractors' work, including:**
  - (i) **issuing guidelines on the assessment of the quality of services of the contractors;**
  - (ii) **requiring contractors to provide additional evidence on the work performed by the contractors' staff, e.g. digital images and**

**video clips before and after completion of the cleansing service;  
and**

- (iii) requiring contractors to report the arrival and departure times  
of their staff for each cleansing operation in future contracts.**

## **Response from the Government**

3.9 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that AFCD will take follow-up actions to implement the recommendations.

## **Audit inspections of the Marine Parks and Marine Reserve**

3.10 With the assistance of AFCD and MD, Audit conducted 8 inspections, from June to August 2020, of the Marine Parks and Marine Reserve. Audit inspections have identified the following areas for improvement:

- (a) removal of large pipe structures found at Sha Chau and Lung Kwu Chau Marine Park (paras. 3.11 to 3.14);
- (b) removal of marine refuse found beyond high water mark of Sha Chau and Lung Kwu Chau Marine Park (paras. 3.15 to 3.18); and
- (c) cleanliness of the Brothers Marine Park (paras. 3.19 to 3.21).

### ***Removal of large pipe structures found at Sha Chau and Lung Kwu Chau Marine Park***

3.11 ***Joint site visit with AFCD.*** On 18 June 2020, AFCD arranged a joint site visit with Audit to the Sha Chau and Lung Kwu Chau Marine Park. Two red pipe structures were found lying on the shoreline of Lung Kwu Chau (see Photographs 2(a) and (b)). Audit examination revealed that:

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- (a) AFCD had found the two pipe structures in December 2019 lying on a beach of Lung Kwu Chau (as revealed in a picture taken on 3 December 2019); and
- (b) EPD also noted the pipe structures during an inspection on 18 December 2019 and required AFCD to inform it of the follow-up actions taken.

Photographs 2(a) and (b)

Pipe structures found in Lung Kwu Chau during the joint site visit

(a) Pipe structure 1



(b) Pipe structure 2



*Source: Photographs taken by Audit staff on 18 June 2020 (11:55 a.m.)*

3.12 ***Follow-up actions taken by AFCD.*** In response to Audit's enquiry, in late July 2020, AFCD said that:

- (a) the incident was an unprecedented one (Note 17). The pipe structures involved two components each with dimension of about 3 metres in width and 10 metres in length. They were not treated as normal marine refuse and were defined as unknown “construction structures”, and the existing cleansing contract did not cover the removal of large scale structures;
- (b) Lung Kwu Chau was remote and isolated with few visitors. The pipe structures were first found to be washed ashore in Lung Kwu Chau in December 2019. Initially, AFCD tried to identify the owner of the structures in December 2019 and January 2020 by verbally asking nearby marine users, but was not successful. AFCD then tried to engage some cleansing service companies for arranging quick removal of the structures by means of service order. However, follow-up actions were hindered by the outbreak of COVID-19 and associated work-from-home arrangements with provision of mainly basic and urgent public services since February 2020; and
- (c) until June 2020, a few potential cleansing service companies were able to arrange site visits for checking but it was found that normal cleansing service was not applicable because the structures could not be removed from the site and disposed of without using heavy machinery and specific techniques in view of their huge size and heavy weight. As AFCD did not have the experience or expertise to handle such huge abandoned structures washed ashore, it sought the assistance from MD on 13 July 2020 to provide the technical assistance for removing the structures from the Marine Park. The incident had also been reported by EPD in a TFMR meeting (see para. 1.5) in early July 2020.

3.13 ***Audit’s site visit in July 2020.*** With the assistance of MD, Audit conducted another site visit on 24 July 2020 which covered the Sha Chau and Lung Kwu Chau Marine Park and the Brothers Marine Park. Audit could not find pipe structures 1 and 2 (see Photographs 2(a) and (b) in para. 3.11) at the original location of 18 June 2020. Similar structures were however found in the vicinity (see Photographs 3 and 4). The distance between Sha Chau and Lung Kwu Chau is some 3.6 kilometres.

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**Note 17:** *Audit noted that MD assisted AFCD in removing a stranded vessel and also a sunken vessel on 11 December 2019 near west coast of Lung Kwu Chau (i.e. inside Sha Chau and Lung Kwu Chau Marine Park).*



**Photograph 3**

**Two pipe structures at Lung Kwu Chau**



*Source: Photograph taken by Audit staff on 24 July 2020 (11:52 a.m.)*

**Photograph 4**

**A pipe structure at the Sha Chau Pier**



*Source: Photograph taken by Audit staff on 24 July 2020 (12:56 p.m.)*



3.14 *Long time taken to remove large objects washed ashore.* In response to Audit's enquiry in July 2020, MD informed Audit that the pipe structures at the Sha Chau and Lung Kwu Chau Marine Park were first reported to TFMR at its meeting on 9 July 2020 (Note 18). On 10 July 2020, EPD requested MD to render assistance to AFCD to remove the pipe structures. On 13 July 2020, MD received the request from AFCD to assist in removing the pipe structures at Lung Kwu Chau. The incident posed risk to navigation safety and attracted public attention, as follows:

- (a) *Pipe structure 1.* A pilot of an ocean-going vessel informed MD on 3 July 2020 that there was a structure afloat at the fairway east of the Urmston Road Anchorage (Note 19). On that day, MD arrived on scene and located the floating structure which was a pair of pipes. The pipes were then towed to Tuen Mun Typhoon Shelter and secured there on the same day; and
- (b) *Pipe structure 2.* A member of the public informed MD on 19 July 2020 that a floating structure was found drifting off Sha Chau which might endanger the navigational safety of vessels. MD conducted a search immediately and located the pipe structure on the same day. It was towed and secured to the closest pier at Sha Chau (Note 20).

Eventually, on 29 July 2020, the pipe structures were removed by MD's contractor (see Photographs 5(a) and (b)). According to MD, pipe structures afloat in the sea might endanger the navigational safety of vessels. In Audit's view, the long time taken to address the problem (7 months from December 2019 to July 2020) is less than satisfactory in view of the potential navigation risk posed to vessels. Audit considers that AFCD should in consultation with MD, consider improving the salvage operation of large floating objects found in the Marine Parks and Marine Reserve.

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**Note 18:** *From the agenda of the meeting, Audit found an aerial photograph taken by EPD on 29 May 2020 showing pipe structure 2 lying on the coastline of Lung Kwu Chau.*

**Note 19:** *Urmston Road is a broad body of water between Lantau Island and Tuen Mun.*

**Note 20:** *According to MD, the pipe structure was in large dimension and very heavy, and it could not be safely towed for a long distance.*

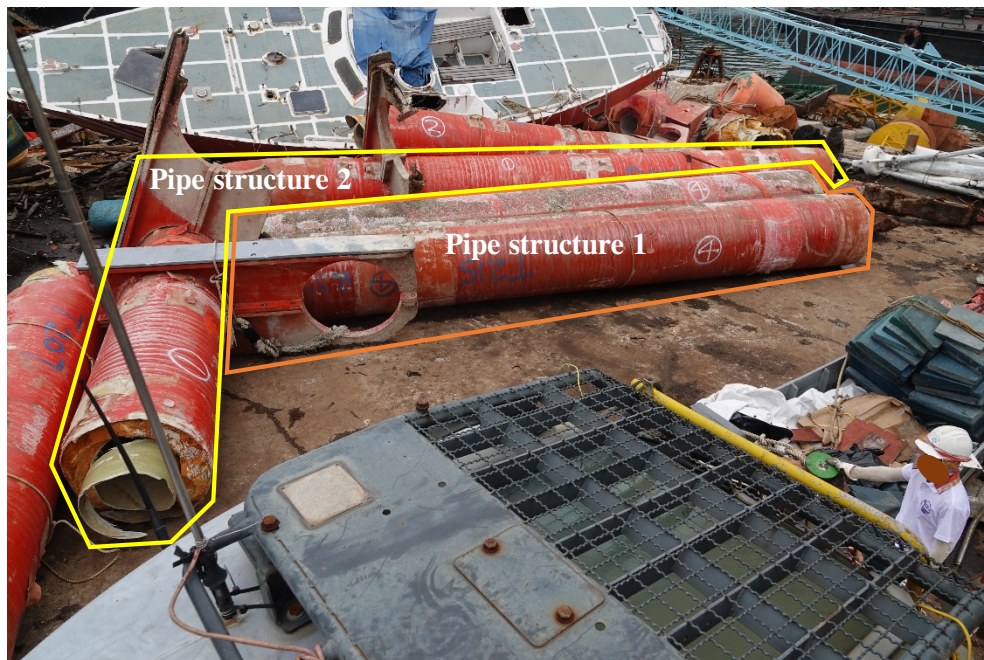
Photographs 5(a) and (b)

Pipe structures 1 and 2 salvaged by MD contractor  
on 29 July 2020

(a)



(b)



Source: Photographs taken by Audit staff on 13 August 2020 (10:42 a.m.)

***Removal of marine refuse found beyond high water mark  
of Sha Chau and Lung Kwu Chau Marine Park***

3.15      ***Cleansing contract of the Sha Chau and Lung Kwu Chau Marine Park.*** Sha Chau and Lung Kwu Chau are islands situated in the western side of Hong Kong. The rich fisheries resources in this area are also a feeding ground for Chinese White Dolphin. In view of the ecological value, the area was designated as the Sha Chau and Lung Kwu Chau Marine Park in November 1996. The landward boundary of the Sha Chau and Lung Kwu Chau Marine Park generally follows the high water mark along the coastline. According to the cleansing contract of the Marine Park, the contractor should clear all refuse at areas near the high water mark and the edge of the sea on beaches at Sha Chau and Lung Kwu Chau as delineated in the maps attached to the contract, as well as all floating refuse within the Sha Chau and Lung Kwu Chau Marine Park boundary. The contractor clears refuse at each island twice a week, and performs daily ad hoc cleansing services for a maximum number of 10 days in the 24-month contract period.

3.16      ***Marine refuse found beyond high water mark of Sha Chau and Lung Kwu Chau.*** During the Audit's site visit on 18 June 2020, Audit found a large quantity of refuse on a beach at the eastern side of Sha Chau, particularly at the area beyond high water mark and next to the natural vegetation (i.e. back-of-beach area — see Photograph 6(a)). The refuse included barrels, bamboo sticks, bottles and foam boxes. The area beyond high water mark of a beach at the northern side of Sha Chau had also accumulated lots of marine refuse (see Photograph 7(a)). Two subsequent Audit inspections on 24 July and 24 August 2020 found that refuse accumulated in the two locations had not been completely removed (see Photographs 6(b) and (c) and Photographs 7(b) and (c)). A large quantity of marine refuse was also found in the back-of-beach area in a beach at the south-east side of Lung Kwu Chau during Audit's site visits on 24 July and 24 August 2020 (see Photographs 8(a) and (b)).



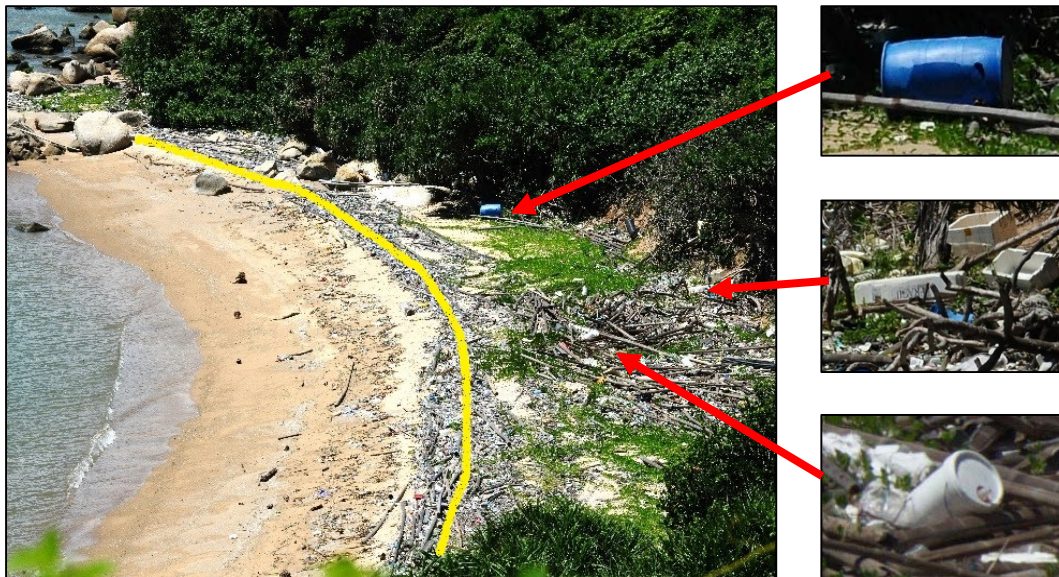
**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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**Photographs 6(a), (b) and (c)**

**Refuse found in the back-of-beach area  
at the eastern side of Sha Chau**

**(a) Site visit on 18 June 2020 (10:53 a.m.)**



**(b) Site visit on 24 July 2020 (1:12 p.m.)**



Photographs 6(a), (b) and (c) (Cont'd)

(c) Site visit on 24 August 2020 (11:57 a.m.)



Legend:  High water mark identified by AFCD

Source: *Photographs taken by Audit staff*

Remarks: *21 clean-up operations were conducted between 15 June and 24 August 2020 for the beach area (i.e. area below the high water mark). According to AFCD, the back-of-beach area is not included in the existing contract.*



**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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**Photographs 7(a), (b) and (c)**

**Refuse found in the back-of-beach area  
at the northern side of Sha Chau**

**(a) Site visit on 18 June 2020 (11:02 a.m.)**



**(b) Site visit on 24 July 2020 (1:17 p.m.)**



Photographs 7(a), (b) and (c) (Cont'd)

(c) Site visit on 24 August 2020 (12:03 p.m.)



Legend:  High water mark identified by AFCD

Source: *Photographs taken by Audit staff*

Remarks: *21 clean-up operations were conducted between 15 June and 24 August 2020 for the beach area (i.e. area below the high water mark). According to AFCD, the back-of-beach area is not included in the existing contract.*



**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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**Photographs 8(a) and (b)**

**Refuse found in the back-of-beach area  
at the south-east side of Lung Kwu Chau**

**(a) Site visit on 24 July 2020 (11:42 a.m.)**



**(b) Site visit on 24 August 2020 (12:26 p.m.)**



*Source: Photographs taken by Audit staff*



3.17 *Need to improve the cleanliness of back-of-beach area of Lung Kwu Chau.* The back-of-beach area of Lung Kwu Chau and Sha Chau was identified by the Government in 2018 as one of the top 5 priority sites for one-off in-depth clean-up operation. According to AFCD, it was responsible for clean-up of marine refuse within the boundary of the Marine Park. Given the special circumstances of the back-of-beach area, AFCD agreed to conduct a one-off in-depth clean-up operation covering the back-of-beach area of Sha Chau and Lung Kwu Chau with EPD's funding support, albeit falling outside the boundary of the Marine Park. In 2018, AFCD awarded an ad hoc six-month (November 2018 to May 2019) cleansing contract for the back-of-beach area of Lung Kwu Chau by a quotation exercise (Note 21). It was reported in TFMR meeting held in July 2019 that AFCD had completed a one-off intensive clean-up operation at Lung Kwu Chau in April 2019. In January 2020, AFCD awarded another six-month (February to July 2020) ad hoc contract for Lung Kwu Chau also by quotation. In both contracts, the contractor was required to clean up all refuse in the back-of-beach area within 6 months from the commencement of the contract. Audit examination of the ad hoc cleansing contracts (see Table 6) revealed that:

- (a) the frequency of collection, number of staff to be deployed and working hours per day had not been specified; and
- (b) the contractor was not required to submit digital images of the site after each clean-up operation as evidence supporting that the cleansing work was satisfactorily completed.

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**Note 21:** *For the back-of-beach area of Sha Chau, upon receipt of EPD's notification in December 2019, AFCD tried to identify potential cleansing service companies to provide the services. According to AFCD, since February 2020, the procurement process had been hindered by the outbreak of COVID-19 and associated work-from-home arrangements with provision of mainly basic and urgent public services. In August 2020, AFCD awarded a six-month contract, effective from 1 September 2020, for the removal of all refuse at the back-of-beach area of Sha Chau at a contract sum of \$1.29 million.*

**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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**Table 6**

**Lung Kwu Chau “back-of-beach” cleansing contracts  
(November 2018 to July 2020)**

<b>Contract</b>	<b>Ad hoc Contract A</b>	<b>Ad hoc Contract B</b>
<b>Contract period</b>	29 November 2018 to 28 May 2019	1 February to 31 July 2020
<b>Contract sum (\$)</b>	850,000	770,000
<b>Contract duration (months)</b>	6	6
<b>Location</b>	Back-of-beach area on Lung Kwu Chau	Back-of-beach area on Lung Kwu Chau
<b>No. of general cleaners per day of each cleansing duty</b>	Not specified	Not specified
<b>No. of working hours per general cleaner per day of cleansing duty</b>	Not specified	Not specified
<b>No. of days of cleansing duty per week</b>	Not specified	Not specified

*Source: Audit analysis of AFCD records*

Audit’s site inspection on 24 August 2020 revealed that the refuse had not been fully cleaned up as required under Contract B (see Photographs 8(a) and (b) in para. 3.16). According to AFCD, the cleansing operation under Contract B was postponed and it would work closely with the contractor to complete the service requirements under the Contract. Audit considers that AFCD needs to strengthen the monitoring of contractor’s work in cleaning up the back-of-beach area of Lung Kwu Chau and improve contract provisions on the frequency of shoreline refuse collection and documentation of evidence (e.g. taking photographs and/or video clips) after completion of each clean-up work in similar cleansing contracts in future. AFCD should review the effectiveness of the ad hoc cleansing services at back-of-beach area of Lung Kwu Chau and report to the Working Group.

3.18 *Refuse located at a back-of-beach area adjacent to a footpath on Lung Kwu Chau.* Audit inspections on 24 July and 24 August 2020 also found that a large quantity of refuse was accumulated at the back-of-beach area adjacent to a footpath on Lung Kwu Chau (see Photographs 9(a) and (b)). According to AFCD:

- (a) the refuse found was not within the Sha Chau and Lung Kwu Chau Marine Park and was not covered by Contract B (see Table 6 in para. 3.17). AFCD did not have the expertise and could not identify suitable contractor to handle such refuse at dangerous and steep locations; and
- (b) the case should be considered at the forum of the Working Group meeting, possibly with collaborated efforts of other government departments.

Audit considers that AFCD should explore effective measures in removing refuse located at the back-of-beach area of Lung Kwu Chau not covered by the existing contract and seek the steer of the Working Group where appropriate.

**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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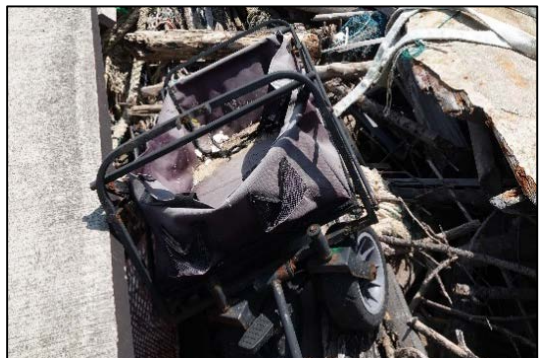
**Photographs 9(a) and (b)**

**Refuse located at a back-of-beach area adjacent to a footpath  
on Lung Kwu Chau**

**(a) Site visit on 24 July 2020  
(11:51 a.m. to 12:06 p.m.)**



**(b) Site visit on 24 August 2020  
(12:59 p.m. to 1:03 p.m.)**



*Source: Photographs taken by Audit staff*

*Remarks: According to AFCD, the refuse found was not within the boundary of Sha Chau and Lung Kwu Chau Marine Park.*

### ***Cleanliness of the Brothers Marine Park***

3.19 ***Cleansing contract of the Brothers Marine Park.*** The Brothers are a group of islands (including West Brother (also known as Tai Mo To), East Brother (also known as Siu Mo To) and Tsz Kan Chau) located at the north of Lantau Island. To compensate for the loss of Chinese White Dolphin habitat arising from the reclamation and marine works under the Hong Kong-Zhuhai-Macao Bridge Hong Kong Boundary Crossing Facilities project, the Brothers was designated as the Brothers Marine Park on 30 December 2016. The landward boundary of the Brothers Marine Park includes coastal area below the high water mark. According to the cleansing contract of the Brothers Marine Park, the contractor should clear all refuse at areas near the high water mark and the edge of the sea on beaches at West Brother and East Brother as delineated in the map attached to the contract, as well as all floating refuse within the boundary of the Brothers Marine Park. The contractor should clear refuse every other Tuesday, and perform daily ad hoc cleansing services for a maximum number of 10 days in the 24-month contract period. In practice, the contractor cleared refuse on West Brother and East Brother alternatively (each Island was cleaned once a month).

3.20 ***Audit's site visits in July and August 2020.*** Audit's site visit on 24 July 2020 (see para. 3.13) found a large quantity of refuse (barrels, bamboo sticks and foam boxes) accumulated along the shorelines of West Brother and East Brother (see Photograph 10(a) and Photograph 11(a)). Audit's follow-up visit on 24 August 2020 found that the refuse accumulated along the shorelines of West Brother and East Brother (see Photograph 10(b) and Photograph 11(b)) had not been removed.



**Clean-up operations by  
Agriculture, Fisheries and Conservation Department**

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**Photographs 10(a) and (b)**

**Shoreline refuse found along the shoreline of West Brother  
(24 July and 24 August 2020)**

**(a) Site visit on 24 July 2020 (10:56 a.m.)**



**(b) Site visit on 24 August 2020 (10:52 a.m.)**



*Source: Photographs taken by Audit staff*

*Remarks: Clean-up operations were conducted on 2 June, 24 July and 10 August 2020.*

**Photographs 11(a) and (b)**

**Shoreline refuse found along the shoreline of East Brother  
(24 July and 24 August 2020)**

**(a) Site visit on 24 July 2020 (10:19 a.m.)**



**(b) Site visit on 24 August 2020 (10:38 a.m.)**



*Source: Photographs taken by Audit staff*

*Remarks: Clean-up operations were conducted on 16 June, 28 July and 11 August 2020.*

3.21 ***Need to improve the cleanliness of the Brothers Marine Park.*** Audit compared the frequency of cleansing services of 5 recurrent contracts for the Marine Parks and Marine Reserve as at 1 July 2020 (see Table 3 in para. 3.2), and noted that the cleansing frequency for the Brothers Marine Park was the lowest among the Marine Parks and Marine Reserve. Audit considers that AFCD should take prompt actions to improve the cleanliness of the Brothers Marine Park and consider the need for increasing the cleansing frequency.

## Audit recommendations

3.22 Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation should:

- (a) in consultation with MD, consider improving the salvage operation of large floating objects found in the Marine Parks and Marine Reserve;
- (b) strengthen the monitoring of contractor's work in cleaning up the back-of-beach area of Lung Kwu Chau and improve contract provisions on the frequency of shoreline refuse collection and documentation of evidence (e.g. taking photographs and/or video clips) after completion of each clean-up work in similar cleansing contracts in future;
- (c) review the effectiveness of the ad hoc cleansing services at back-of-beach area of Lung Kwu Chau and report to the Working Group;
- (d) explore effective measures in removing refuse located at the back-of-beach area of Lung Kwu Chau not covered by the existing contract and seek the steer of the Working Group where appropriate; and
- (e) take prompt actions to improve the cleanliness of the Brothers Marine Park and consider the need for increasing the cleansing frequency.

## Response from the Government

3.23 The Director of Agriculture, Fisheries and Conservation agrees with the audit recommendations. He has said that AFCD will take follow-up actions to implement the recommendations.



## PART 4: CLEAN-UP OPERATIONS BY LEISURE AND CULTURAL SERVICES DEPARTMENT

4.1 This PART examines the clean-up operations by LCSD to collect and remove shoreline refuse at gazetted beaches.

### Collection and removal of shoreline refuse at gazetted beaches

#### *Cleaning arrangements*

4.2 *Cleansing contracts.* LCSD is responsible for the cleanliness of 41 gazetted beaches located in five districts, namely Southern, Sai Kung, Islands, Tsuen Wan and Tuen Mun. The cleansing work is performed by contractors under three 36-month contracts on provision of cleansing and supporting services to leisure venues (Note 22) covering different districts (see Table 7).

Table 7

Cleansing contracts for gazetted beaches

District	No. of beaches	Contract period	Estimated contract value for beach cleansing services (\$ million)
Southern	12	Apr 2020 to Mar 2023	67.4
Sai Kung	6	Mar 2019 to Feb 2022	25.4
Islands, Tsuen Wan, and Tuen Mun	23	May 2020 to Apr 2023	77.1

Source: LCSD records

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**Note 22:** Leisure venues covered in the cleansing contracts include parks and playgrounds, sports centres and tennis and squash centres, swimming pools, sports grounds and recreation grounds.

## Clean-up operations by Leisure and Cultural Services Department

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4.3 ***Contractual requirements.*** The cleansing contracts require the contractors to:

- (a) have the whole beach cleansed three times daily in accordance with a schedule as specified in the contract or as directed by the government representative (i.e. LCSD venue staff);
- (b) provide the required number of full-time on-site workers at each venue to perform the services as stipulated in the cleansing schedule, which, among others, include:
  - (i) ***Water area.*** Collecting refuse/junks and cleaning the coast lines of the beach including rocky areas, jetty and landing platform twice a day, and picking up pebbles, rocks and sharp articles underneath the water at the depth of 0.5 metre as directed by the government representative; and
  - (ii) ***Sand area.*** Excavating refuses, junks and sharp articles which buried underground the sand at the depth of 0.5 metre once a day, and collecting refuses, junks, sea weeds, jelly fishes and dead bodies of marines as directed by the government representative; and
- (c) supply labour and transportation for collected refuses for dumping to the approved dumping sites on the same day.

The contractor provides the above regular cleansing service for each beach at a monthly rate as specified in the contract. Upon the request of the government representative, the contractor shall provide additional workers to perform cleansing work at a unit rate as specified in the contract.

4.4 ***Removal of sea-borne refuse found on shark prevention nets.*** Apart from the cleansing contracts, LCSD has engaged a contractor to provide maintenance services of the shark prevention nets installed in 38 bathing beaches (Note 23). The maintenance services include removal of sea-borne refuse found on the shark

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**Note 23:** *Of the 41 gazetted beaches, 3 (Rocky Bay Beach, Hairpin Beach and Gemini Beaches) are not open for swimming and not provided with shark prevention nets.*

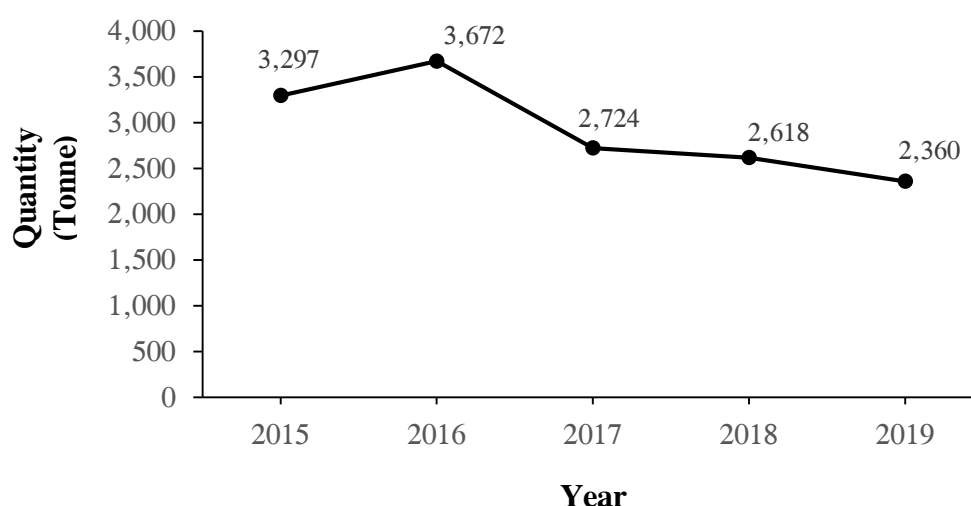
prevention nets. The maintenance contract has a duration of three years commencing from 1 December 2018 with an estimated contract value of \$78.5 million.

### ***Cleanliness condition of gazetted beaches***

4.5 ***Quantity of refuse collected.*** According to LCSD statistics from 2015 to 2019, the quantity of shoreline refuse collected decreased by 36% from 3,672 tonnes in 2016 to 2,360 tonnes in 2019 (see Figure 6).

**Figure 6**

**Quantity of shoreline refuse collected at gazetted beaches  
(2015 to 2019)**



*Source: Audit analysis of LCSD records*

4.6 ***EPD inspection results.*** Since 2020, EPD has engaged a contractor to conduct inspections to monitor the cleanliness condition of 29 priority sites and 90 other coastal sites (see para. 2.7), which include all 41 gazetted beaches. Audit analysed the cleanliness grading accorded at each of the 508 inspections conducted by EPD contractor from mid-January to mid-August 2020 and found that the cleanliness condition of gazetted beaches was generally more satisfactory than that of the other coastal sites. Specifically, “Grade 1 — Clean” was accorded by the contractor in 74% of the inspections of gazetted beaches, as compared to only 32% for the inspections of other coastal sites (see Table 8).

Table 8

**Comparison of cleanliness grading of gazetted beaches and other coastal sites  
based on 508 inspections conducted by EPD contractor  
(Mid-January to mid-August 2020)**

Cleanliness grading	Number of inspections	
	41 gazetted beaches	78 other coastal sites
“Grade 1 — Clean”	114 (74%)	115 (32%)
“Grade 2 — Satisfactory”	39 (25%)	196 (55%)
“Grade 3 — Fair” or worse	1 (1%)	43 (13%)
Total	154 (100%)	354 (100%)

Source: *Audit analysis of EPD records*

4.7 *Audit’s site visits.* Audit conducted site visits to four gazetted beaches in July 2020 and found that the cleanliness condition of gazetted beaches was satisfactory in general (see Photographs 12(a) to (d)).

Photographs 12(a) to (d)

Cleanliness condition of gazetted beaches during Audit's site visits

(a) Silver Mine Bay Beach



(b) Tong Fuk Beach



(c) Golden Beach



(d) Ting Kau Beach



*Source: Photographs taken by Audit staff in July 2020*

4.8 **Areas for improvement.** The satisfactory cleanliness condition of the gazetted beaches might be attributable to the provision of daily cleansing service (see para. 4.3) and the supervision of LCSD venue staff, while coastal sites under the management of other departments (i.e. AFCD and FEHD) are subject to a lower cleansing frequency (e.g. weekly or monthly). Despite the more satisfactory cleanliness condition of the gazetted beaches as compared with other coastal sites, Audit examination has found a number of areas for improvement, which are elaborated in paragraphs 4.9 to 4.15.

***Need to develop performance standards  
on cleanliness condition of beaches***

4.9 ***Lack of performance standards on cleanliness of beaches.*** According to the cleansing contracts, the contractor is required to carry out the cleansing services in accordance with a set of standard of cleanliness, which covers different locations such as floor surfaces, glass doors and windows, carpeted areas, and fixed installations and furniture. Taking floor surfaces as an example:

- (a) acceptable standard means “dry and free from surface dirt, litter, waste materials and grease. Marble, tile and rubber-stud floor of lobby, main thoroughfare and lift should be waxed after cleaning”;
- (b) marginally acceptable standard means “reasonably dry and predominantly free from surface dirt, litter, waste materials and grease”; and
- (c) unacceptable standard means “wet, greasy and widespread distribution or minor accumulation of surface dirt, litter and waste materials”.

Photographs illustrating an acceptable standard of cleanliness for different locations are also included in the contracts. Audit examination of the cleansing contracts however found that the standard of cleanliness did not cover beaches (e.g. water area and sand area of a beach). In the absence of a standard of cleanliness for beaches, it is difficult to assess objectively the performance of the contractor in providing cleansing services for the beaches. In Audit’s view, the Shoreline Cleanliness Grading System adopted in EPD’s inspections (see para. 2.4) can be a useful reference for LCSD in developing a set of standard of cleanliness for the beaches in the cleansing contracts. For example, acceptable, marginally acceptable and unacceptable standards could be respectively defined as “Grade 1 — Clean”, “Grade 2 — Satisfactory” and “Grade 3 — Fair” or worse based on EPD inspection standards.

***Need to ensure accuracy and timely reporting of statistics on special  
cleansing operations***

4.10 ***Special cleansing operations prior to 2018.*** As an initiative of enhancing efforts to remove refuse from the marine environment under the 2015 Study, LCSD conducted additional ad hoc clean-ups (hereinafter referred to as special cleansing operations) at the priority sites during wet seasons and at the remaining gazetted beaches after heavy rainfall, strong monsoon, typhoons or other inclement weather.

**Clean-up operations by  
Leisure and Cultural Services Department**

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The statistics of special cleansing operations from 2015 to 2017 were reported to the Working Group in January 2017 and January 2018, as follows:

- (a) from April 2015 to March 2016, LCSD conducted 123 special cleansing operations at three gazetted beaches (priority sites) and marine refuse weighing over 675,250 kilogram (kg) was collected in these operations; and
- (b) from December 2016 to November 2017, LCSD conducted:
  - (i) 138 special cleansing operations at the three priority sites and marine refuse weighing over 226,000 kg was collected in these operations;
  - (ii) 281 special cleansing operations at the remaining 38 gazetted beaches on top of its daily routine cleaning efforts; and
  - (iii) 4 special cleansing operations for clearing marine refuse on water area of beaches after inclement weather during the wet season.

4.11 *Special cleansing operations since 2018.* Audit noted that neither the Working Group nor TFMR had been informed of the statistics of special cleansing operations after January 2018. Upon request, LCSD provided Audit with a statistical return on the special cleansing operations conducted in the 41 gazetted beaches from January 2018 to June 2020 (see Table 9).

Table 9

Number of special cleansing operations  
(January 2018 to June 2020)

Year	Number of special cleansing operations		
	4 gazetted beaches (priority sites)	37 gazetted beaches (non-priority sites)	Total
2018	99	363	462
2019	100	236	336
2020 (up to June)	24	931	955

Source: Audit analysis of LCSD records

4.12 **Audit observations.** Audit analysis of the number of special cleansing operations revealed the following issues:

- (a) **Priority sites.** The number of special cleansing operations conducted in the four priority sites (i.e. Pui O Beach and Cheung Chau Tung Wan Beach in Islands District, and Shek O Beach and Rocky Bay Beach in Southern District) significantly decreased from around 100 each in 2018 and 2019 to 24 for the first half of 2020. Among the four priority sites, no special cleansing operation was conducted in Shek O Beach from January 2018 to June 2020. The decrease in the number of special cleansing operations conducted might reflect a general improvement in the cleanliness condition of the priority sites. In this connection, there is a need for EPD to continue keeping in view the need for updating the coastal sites in the shoreline cleanliness monitoring programme (see para. 2.18). In October 2020, LCSD informed Audit that: (i) LCSD would review the priority site list with EPD; and (ii) in view that the cleanliness condition of the four priority sites had improved, LCSD would propose to EPD to remove these sites from the list; and
- (b) **Non-priority sites.** The number of special cleansing operations increased significantly from 236 in 2019 to 931 for the first half of 2020. Of the 931 special cleansing operations, 849 (91%) were conducted in the six beaches in Sai Kung District. As a comparison, LCSD only conducted 31 special cleansing operations in the first half of 2019. Despite the



significant increase in the number of special cleansing operations in the six beaches in Sai Kung District, the total quantity of refuse collected was about 420 tonnes in both the first half of 2019 and that of 2020. In response to Audit's enquiry on the significant discrepancy, in September 2020, LCSD said that:

- (i) due to the outbreak of COVID-19, it engaged one more cleansing worker per day at each of the six beaches in Sai Kung from February to May 2020 and in some of the Sai Kung beaches in June 2020 to supplement the existing cleansing staff with a view to stepping up hygiene and other epidemic preventive measures. It was reasonable that the amount of refuse collected at the six beaches had not increased; and
- (ii) the statistical return of additional cleansing operations provided to Audit was unnecessarily exaggerated. The provision of one additional cleansing worker mentioned in (i) was incorrectly reported as 842 special cleansing operations in the statistical return. Taking the month of February 2020 as an example, the provision of one additional cleansing worker was incorrectly counted as 174 special cleansing operations (i.e. 29 days  $\times$  6 beaches  $\times$  1 worker).

In Audit's view, there is a need to improve the accuracy of management information on special cleansing operation statistics for reporting to the Working Group and TFMR.

### ***Need to tighten controls on provision of additional cleansing workers***

4.13 ***Manpower requirements in cleansing contracts.*** Detailed manpower requirements for each beach are laid down in the cleansing contracts taking into account the fluctuations in workload. For example, a small number of cleansing workers is required during October to April (i.e. non-swimming season) and a large number of cleansing workers is required on Saturdays or general holidays from June to August.

4.14 ***Inadequacies in provision of additional cleansing workers.*** While manpower requirements in the cleansing contracts should be commensurate with the

## Clean-up operations by Leisure and Cultural Services Department

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fluctuations in workload, there may be ad hoc needs for additional cleansing workers for special or emergency occasions (e.g. festive event or sudden surge of marine refuse after passage of a typhoon). Audit examination of the requests made by LCSD for provision of additional cleansing workers by contractors for beaches in different districts from April 2017 to March 2020 revealed the following inadequacies:

- (a) ***LCSD's guidelines on provision of additional cleansing workers not always followed.*** According to the cleansing contract, a written service order should be served to the contractor five days in advance for requests of additional cleansing workers. According to LCSD's Contract Management Manual which provides guidelines on managing requests of additional cleansing workers, any request for additional/ad hoc service should be justified and certified by an appropriate staff in respect of the need and acceptance of the service, and approved by an appropriate authority. Audit examined LCSD's records and found that: (i) justifications for the requests for additional cleansing workers were not documented; and (ii) additional cleansing workers had been deployed before the issue of a written service order on some occasions. For example, on 29 March 2019, a venue staff in Big Wave Bay Beach submitted a request to the beach manager for additional service (2 hours each of 2 workers) on every Saturday, Sunday and Monday from May to September 2019. On 3 June 2019, the venue staff informed the beach manager that the contractor had not yet received the relevant service order, though additional service was already deployed in May 2019. On 18 June 2019, the beach manager issued a service order to the contractor for the additional service from May to September 2019; and
  
- (b) ***Deployment of additional workers not resulting in increase in quantity of refuse collected.*** From June 2018 to March 2020, LCSD requested the contractor to provide four additional cleansing workers to work for eight hours on alternate Fridays each month in Rocky Bay Beach. Audit examination of the daily refuse statistics however revealed that the quantity of refuse collected on the Fridays with additional cleansing workers did not show a significant increase as compared to the quantity of refuse collected on the Fridays without additional cleansing workers. In response to Audit's enquiry, LCSD in September 2020 said that: (i) the quantity of refuse collected at beaches should not be the only indicator to evaluate the cleansing work force requirement; and (ii) the additional workers had various duties which included upkeeping the cleansing and hygiene conditions of the toilets, changing rooms and barbeque sites, etc.

While noting LCSD's explanations, Audit has some reservations on the need for deploying additional cleansing workers in Rocky Bay Beach because it is not open to the public for swimming and does not have any related facilities (i.e. toilets, changing rooms and barbeque sites).

***Need to improve accuracy of shoreline refuse data***

4.15 ***Collection of shoreline refuse data by LCSD.*** Apart from shoreline refuse (see para. 1.2), LCSD also collects land refuse (Note 24). Venue staff records the total number of bags and/or the total weight of each type of refuse (i.e. shoreline refuse and land refuse) in kg (Note 25) for each gazetted beach on a daily basis. LCSD provides a summary of the shoreline refuse data of each gazetted beach to EPD on a monthly basis (see para. 2.3). Audit's examination on the collection of shoreline refuse data revealed the following inadequacies:

- (a) ***Lack of guidelines on requirement of refuse data collection.*** LCSD venue staff collect and report data for both shoreline refuse and land refuse. However, LCSD's Guidelines on Management of Public Beaches do not have laid-down procedures on how to classify, count and weigh the bags/bins of refuse collected, which has led to the following issues:
  - (i) ***Refuse collected not consistently classified as shoreline refuse.*** Audit conducted interviews with venue staff of 13 beaches in four districts (i.e. Islands, Southern, Tuen Mun and Tsuen Wan) from July to September 2020 and found that venue staff in different beaches had different interpretations on how to classify refuse collected as shoreline refuse or land refuse, as follows:
    - ***Interpretation 1.*** For 2 beaches in Tsuen Wan District, only refuse collected in the water area would be classified as shoreline refuse and those collected in other areas would be classified as land refuse;

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**Note 24:** *According to the 2015 Study Report, land refuse refers to any solid waste, discarded or lost material, resulting from human activities that has not yet entered the marine environment and found on land.*

**Note 25:** *According to the 2015 Study Report, LCSD workers assumed a bag of refuse carried a weight of 25 kg.*

- **Interpretation 2.** For 3 beaches in Southern District and 5 beaches in Islands District, refuse collected from water area up to the high tide mark of the sand area would be classified as shoreline refuse and those collected beyond the high tide mark would be classified as land refuse; and
- **Interpretation 3.** For 3 beaches in Tuen Mun District, refuse collected in the water area and on the entire sand area would be classified as shoreline refuse, and only those collected beyond the sand area (e.g. footpaths and barbeque facilities) and from trash bins would be classified as land refuse.

Photograph 13 below illustrates the different interpretations on the beach area in which refuse collected was classified as shoreline refuse. As the inconsistent classification would affect the accuracy of shoreline refuse data reported, there is a need to lay down guidelines to standardise the classification of shoreline refuse;

**Photograph 13**

**An illustration of shoreline refuse location**



Interpretation 1

Interpretation 2

Interpretation 3

Legend: — Low tide mark  
— High tide mark

Source: Photograph taken by Audit staff in July 2020

- (ii) ***Variation in estimating refuse weight.*** According to the interviews with the venue staff of different beaches in the four districts (see (i) above), the refuse weight was estimated based on a formula (i.e. multiplying the number of bags/bins of refuse collected by an estimated weight for each bag/bin of refuse). The estimated weight for each bag/bin of refuse in each beach was either 15 kg or 25 kg (for garbage bag) and either 250 kg or 300 kg (for garbage bin). No record was available showing when and how LCSD determined the estimated weight for each bag/bin of refuse and whether LCSD had regularly calibrated the estimated weight. To assess the reasonableness of the estimated weight for each bag of refuse, Audit conducted a sample check to measure the weight of 28 bags of refuse collected in three beaches in Southern District and two beaches in Tsuen Wan District during Audit's site visits in August and September 2020. Against the estimated weight of 15 kg, Audit's sample check found that the weight for each bag of refuse ranged from 1.16 kg to 15.89 kg (9.57 kg on average); and
  - (iii) ***Refuse on shark prevention nets not reported.*** The maintenance contractor of shark prevention nets is required to report to LCSD the quantity of refuse removed during its maintenance service (see para. 4.4) on a regular basis. In 2019, the contractor reported that refuse with a total weight of 14,847 kg had been removed. Audit however found that LCSD had not included the quantity of refuse reported by the maintenance contractor in compiling the marine refuse data for submission to EPD; and
- (b) ***Need to monitor and investigate abnormal fluctuations in shoreline refuse data reported.*** While LCSD has put in place a mechanism to collect marine refuse data on a daily basis and to consolidate on a monthly basis for submission to EPD, no record was available showing that LCSD had monitored the fluctuations in shoreline refuse data collected and investigated any abnormal fluctuations, which might be due to errors or omissions in reporting. Audit analysis of the shoreline refuse data reported by LCSD found the following two instances of abnormal fluctuation:
- (i) the quantity of shoreline refuse collected in South Bay Beach was reported as zero in the 12-month period from July 2019 to June 2020, while the reported figure was 20,465 kg from July 2018 to June 2019; and

- (ii) the quantity of shoreline refuse collected in Deep Water Bay Beach decreased by 99% from 6,000 kg in the 7-month period from October 2018 to April 2019 to 60 kg from October 2019 to April 2020.

## **Audit recommendations**

4.16 Audit has *recommended* that the Director of Leisure and Cultural Services should:

- (a) consider incorporating into the cleansing contracts performance standards on cleanliness condition of beaches;
- (b) ensure that the results of special cleansing operations are reported to the Working Group and TFMR;
- (c) improve the accuracy of management information on special cleansing operation statistics for reporting to the Working Group and TFMR;
- (d) tighten controls on the provision of additional workers for cleansing work of beaches; and
- (e) improve the accuracy of shoreline refuse data by:
  - (i) laying down guidelines on classifying, counting and weighing the bags/bins of refuse collected; and
  - (ii) monitoring and investigating any abnormal fluctuations in the shoreline refuse data reported.

## **Response from the Government**

4.17 The Director of Leisure and Cultural Services agrees with the audit recommendations. He has said that:

- (a) regarding the audit recommendation in paragraph 4.16(a), LCSD will incorporate the performance standards on cleanliness condition of beaches in the future tender with reference to EPD's Shoreline Cleanliness Grading System;
- (b) regarding the audit recommendation in paragraph 4.16(c), LCSD will review the method of counting on the number of special cleansing operations with a view to providing clear information; and
- (c) regarding the audit recommendation in paragraph 4.16(e), LCSD will:
  - (i) review and standardise the classification of shoreline refuse in bathing beaches;
  - (ii) review the method of estimating refuse weight;
  - (iii) report the sea refuse collected by the contractor of shark prevention nets to EPD; and
  - (iv) pay attention to checking the shoreline refuse data accuracy.

## **PART 5: CLEAN-UP OPERATIONS BY FOOD AND ENVIRONMENTAL HYGIENE DEPARTMENT**

5.1 This PART examines the clean-up operations by FEHD, focusing on:

- (a) monitoring of clean-up operations (paras. 5.2 to 5.11);
- (b) audit inspections of priority sites under the purview of FEHD (paras. 5.12 to 5.15); and
- (c) tendering of clean-up service (paras. 5.16 to 5.27).

### **Monitoring of clean-up operations**

5.2 *Clean-up contract.* FEHD is responsible for the cleanliness of ungazetted beaches and coastal areas in Hong Kong that are not under the purview of other government departments. According to FEHD:

- (a) it conducts clean-up operations on a regular basis ranging from daily to half yearly subject to the ground situation and will carry out additional clean-up operations as and when required, e.g. the surge of marine refuse washed ashore due to spillage incidents or in the aftermath of typhoons. Most of ungazetted beaches and coastal areas are located at the remote or undeveloped areas which are not easily accessible by vehicles; and
- (b) Hong Kong has a long coastline. Some locations, especially outlying islands, can only be accessed by vessels. Furthermore, facing unforeseeable circumstances, including weather condition and tidal movement (such as heavy wind and rough seas at winter season and typhoon at summer season), it can only conduct clean-up operations at the pertinent locations as circumstances permit. Given the scale and the complexity, the clean-up operations are by no means easy.

5.3 As of August 2020, of the 306 sites of ungazetted beaches and coastal areas under FEHD's purview, the clean-up work of 287 (94%) sites was outsourced to a contractor and clean-up work of the remaining 19 (6%) sites was undertaken by FEHD



in-house staff (Note 26). The current 24-month clean-up contract (from June 2019 to May 2021) at a contract sum of \$89.2 million includes 287 sites of ungazetted beaches and coastal areas and another 782 territorial sites. The Environmental Hygiene Branch of FEHD is responsible for monitoring the work carried out by its contractor. From 2015 to 2019, FEHD collected 4,045 tonnes (averaging 809 tonnes per annum) of shoreline refuse in the ungazetted beaches and coastal areas under its purview.

**5.4**      *Contractual and operational requirements.* The clean-up contract requires the contractor to provide clean-up service to the satisfaction of the government representative (i.e. FEHD staff). The contractor is required to:

- (a)      provide a minimum number and post of contractor personnel, type of vehicle and vessel for each site in each Districts Group (see Contract E in Table 10 in para. 5.16) and submit in advance the work schedules (per month in practice) for the approval of FEHD; and
- (b)      upon completion of clean-up service, submit to FEHD:
  - (i)      at the end of each day, digital images showing the conditions of sites/areas, taken on close and wide shots before, during and after providing the clean-up service; and
  - (ii)     within two days, a return with photographs to FEHD.

### ***Need to update guidelines for assessing the cleanliness level***

**5.5**      According to FEHD's Operational Manual for Management of Public Cleansing Contracts (Operational Manual — Note 27), FEHD staff shall assess the overall performance of the contractor through random checking (e.g. field inspections

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**Note 26:** *As a significant part of the clean-up work is carried out by an outside contractor, this audit review focused on the clean-up operations performed by the FEHD contractor and monitoring work carried out by FEHD.*

**Note 27:** *In July 2020, FEHD informed Audit that the Operational Manual was applicable to FEHD's cleansing service contract for special sites/areas, ungazetted beaches and coastal areas, and other cleansing contracts, e.g. street cleansing contracts.*

## **Clean-up operations by Food and Environmental Hygiene Department**

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on contractor's service and the service records submitted by the contractor). According to FEHD:

- (a) it monitors the contractor's performance according to the performance requirements laid down in the contract and requires the contractor to follow the Execution Plan (submitted by the contractor), among others, which sets out the performance level for fulfilling the service requirements with FEHD's approval; and
- (b) at pre-contract meetings held with the awarded contractor, the representatives of District Environmental Hygiene Offices (District Offices) have highlighted the scope of service required and the level of cleanliness to be attained, and briefed the contractor on the special features and essential requirements in the execution of the contract.

The frontline staff will determine whether the cleanliness level achieved is satisfactory based on both the terms and condition of the contract and the work plans (including the Execution Plan) proposed by the contractor and approved by FEHD. In Audit's view, FEHD needs to update the guidelines for assessing the cleanliness level achieved by the contractor, making reference to EPD's Shoreline Cleanliness Grading System for the cleanliness level where appropriate (see para. 2.4).

### ***Need to comply with the monitoring requirements of the Operational Manual***

5.6 According to FEHD's Operational Manual:

- (a) Senior Foremen should inspect at least 50% of the scheduled work sites on the day the service is provided. The inspection is preferred to be carried out immediately after the service is completed. For work sites in remote areas, a Senior Health Inspector can exercise discretion to determine the most suitable minimum inspection frequency. The Senior Foreman has to upload his Daily Inspection Report to FEHD's Contract Management System (Note 28); and

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**Note 28:** *In 2002, the Contract Management System was implemented for managing the performance of public cleansing contracts. The System contains a database of inspection records and default notices issued to contractors.*

- (b) the Health Inspector/Senior Health Inspector should log into the System to review the Daily Inspection Reports submitted by the Senior Foreman. The Health Inspector should conduct checking on the submissions of the Senior Foreman, by making use of the System, at least twice a week. A Senior Health Inspector should conduct random checks on the submissions at least once a week. The “Daily Inspections Log Report” generated by the System shows whether the Health Inspector or the Senior Health Inspector has reviewed the submissions made by the Senior Foreman.

5.7 In June and July 2020, Audit paid visits to FEHD’s Islands and Sai Kung District Offices, and found that:

- (a) according to three samples provided by Islands District Office, the work sites inspected had not been recorded on the Senior Foreman’s Daily Inspection Reports. Without information on work sites inspected, Audit was unable to conduct analysis on the inspection records and could not ascertain whether the 50% target inspection rate for Senior Foremen had been achieved (see para. 5.6(a)); and
- (b) the Daily Inspections Log Reports of the two District Offices from June 2019 to May 2020 showed that:
  - (i) ***Islands District Office comprising one Health Inspector and one Senior Health Inspector responsible for the clean-up contract.*** The Health Inspector had logged into the Contract Management System for three days, while the Senior Health Inspector had not logged into the System; and
  - (ii) ***Sai Kung District Office comprising one Health Inspector and one Senior Health Inspector responsible for the clean-up contract.*** Both the Health Inspector and the Senior Health Inspector had not logged into the System.

The requirement of the Operational Manual to make use of the Contract Management System to conduct checking on the submissions of the Senior Foreman once/twice a week had not been fully achieved (see para. 5.6(b)).

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5.8 Regarding the findings of Audit's site visits in paragraph 5.7, FEHD said that:

- (a) the Senior Foreman provided entries of the inspection results at the Daily Inspection Reports of the Contract Management System but had not clearly stated the location name of the inspected sites in the Daily Inspection Reports. However, the images of the site inspected had been uploaded to the System. As such, the required information could not be easily retrieved from the System by just searching the location name of the inspected site (see para. 5.7(a)); and
- (b) in order to assess the contractor's performance and the supervision work of Senior Foreman, the Health Inspectors and Senior Health Inspectors (supervising officers) of Islands and Sai Kung District Offices had vetted paper records, i.e. daily work programmes, daily attendance records and daily returns with photographs submitted by the contractor to report the completion of clean-up work as required (see para. 5.4(b)). The supervising officers of the two District Offices had logged into the System to check for the Daily Inspection Reports submitted by the Senior Foremen in their District Offices since June and September 2020 respectively (see para. 5.7(b)).

In Audit's view, FEHD needs to record the work sites inspected in Senior Foremen's submissions and make use of the Contract Management System to conduct checking to ensure its supervisory staff have complied with the monitoring requirements as stated in FEHD's Operational Manual.

### ***Need to lay down procedures for estimating the quantity of shoreline refuse collected***

5.9 In 2019, FEHD collected about 1,213 tonnes of shoreline refuse. According to the contract provisions, the contractor should keep a detailed record of the amount of waste in kg. At the end of each month, the contractor should submit a copy of such record to FEHD staff. According to FEHD, the shoreline refuse collected varied, ranging from small litters (e.g. glass bottles and foam boxes) to bulky and heavy articles (e.g. refrigerator and planks). Audit noted that, similar to LCSD (see para. 4.15(a)), FEHD did not lay down procedures in the contract on how to estimate the quantity of shoreline refuse collected. Audit considers that FEHD needs to lay down procedures for estimating the quantity of shoreline refuse collected.

## Audit recommendations

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

- (a)      **update the guidelines for assessing the cleanliness level achieved by the contractor;**
- (b)      **remind FEHD's supervisory staff to comply with the monitoring requirements of FEHD's Operational Manual; and**
- (c)      **lay down procedures for estimating the quantity of shoreline refuse collected.**

## Response from the Government

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

- (a)      FEHD has established guidelines for monitoring the performance of the contractor. To facilitate the assessment of whether the cleanliness level achieved is satisfactory, FEHD will update the guidelines to set out a benchmark on the level of cleanliness by illustrating with photographs and descriptions at the contract requirements for the contractor to attain and achieve in the next contract upon renewal in June 2021;
- (b)      FEHD will further remind FEHD's supervisory staff from time to time to comply with the monitoring requirements of FEHD's Operational Manual; and
- (c)      since the outcome basis approach (see para. 5.20) is adopted in the current service contract, the contractor is required to provide clean-up operations to the satisfaction of FEHD at a fixed service charge regardless of the amount of refuse collected. According to the contract provisions, the contractor is required to provide a detailed record of the amount of shoreline refuse collected. FEHD will consider laying down procedures in the service contract for the contractor to provide a more accurate assessment of the

## **Clean-up operations by Food and Environmental Hygiene Department**

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quantity of the shoreline refuse collected as far as practicable in the next contract upon renewal in June 2021.

## **Audit inspections of priority sites under the purview of Food and Environmental Hygiene Department**

### ***Need to strengthen the supervision on the contractor's work***

5.12 From June to mid-September 2020, Audit conducted field visits to three priority sites:

- (a) ***Ting Kok Road near Po Sam Pai Village in Tai Po District.*** Audit inspections on 21 June and 9 August 2020 found a large quantity of refuse along the shoreline of Ting Kok Road near Po Sam Pai Village (see Photographs 14(a) and (b)). According to FEHD records, the contractor cleaned up the site on 5 June and 10 July 2020. Up to 13 September 2020, the refuse had not yet been removed by the contractor (see Photograph 14(c));
- (b) ***Lung Kwu Tan near Lung Tsai in Tuen Mun District.*** Audit inspections on 14 and 29 July and 25 August 2020 found a plastic bucket and a large bamboo scaffold at the shoreline of Lung Kwu Tan near Lung Tsai (see Photographs 15(a) to (c)). According to FEHD records, the contractor cleaned up the site on 13 and 27 July and 24 August 2020. Up to 9 September 2020, the refuse had not yet been removed by the contractor (see Photograph 15(d)); and
- (c) ***Shui Hau in Islands District.*** Audit inspections on 7 and 25 August 2020 found a large quantity of refuse along the shoreline of Shui Hau (see Photographs 16(a) and (b)). According to FEHD records, the contractor cleaned up the site on 1 and 22 August 2020. Up to 15 September 2020, the refuse had not been fully cleaned up by the contractor (see Photograph 16(c)).

**Photographs 14(a) to (c)**

**Refuse found in Ting Kok Road near Po Sam Pai Village, Tai Po District**

**(a) Site visit on 21 June 2020 (5:06 p.m.)**



**(b) Site visit on 9 August 2020 (2:57 p.m.)**



**(c) Site visit on 13 September 2020 (2:02 p.m.)**



*Source: Photographs taken by Audit staff*



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**Photographs 15(a) to (d)**

**Refuse found in Lung Kwu Tan near Lung Tsai, Tuen Mun District**

**(a) Site visit on 14 July 2020 (10:54 a.m.)**



**(b) Site visit on 29 July 2020 (3:47 p.m.)**



**(c) Site visit on 25 August 2020 (2:02 p.m.)**



**(d) Site visit on 9 September 2020 (11:47 a.m.)**



*Source: Photographs taken by Audit staff*



**Photographs 16(a) to (c)**

**Refuse found in Shui Hau, Islands District**

**(a) Site visit on 7 August 2020 (10:18 a.m.)**



**(b) Site visit on 25 August 2020 (10:39 a.m.)**



**(c) Site visit on 15 September 2020 (2:24 p.m.)**



*Source: Photographs taken by Audit staff*

5.13 Regarding the findings of Audit's site visits in paragraph 5.12, in late September 2020, FEHD informed Audit of the following:

## **Clean-up operations by Food and Environmental Hygiene Department**

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- (a) ***Regarding paragraph 5.12(a).*** Certain quantity of refuse trapped in the vegetation had not yet been removed by the contractor. The location in question was situated inside a mangrove at Ting Kok, namely “Site of Special Scientific Interest”. The refuse was trapped in vegetation which was not readily accessible. The contractor could only conduct clean-up operations by hand picking refuse deposited at the periphery of the mangrove as far as practicable to avoid causing damage to the vegetation. Tai Po District Office of FEHD had sought the assistance of AFCD in providing expertise advice and conducting a joint clean-up operation;
- (b) ***Regarding paragraph 5.12(b).*** The articles (suspected construction articles), which were private properties, did not obstruct the clean-up operations. Tuen Mun District Office of FEHD provided the information to the Lands Department on 18 September 2020 for any actions deemed necessary. Site visit by FEHD on 21 September 2020 found that the articles were removed (Note 29); and
- (c) ***Regarding paragraph 5.12(c).*** Due to the geographical location, marine refuse washed ashore would accumulate again after conducting clean-up operations. FEHD reviews the clean-up frequency from time to time and also mounts additional clean-up operations if there is a surge of shoreline refuse.

In Audit’s view, FEHD needs to step up its efforts in monitoring the cleanliness of priority sites and strengthen the supervision on the contractor’s work.

### **Audit recommendation**

5.14      **Audit has *recommended* that the Director of Food and Environmental Hygiene should step up efforts in monitoring the cleanliness of priority sites and strengthen the supervision on the contractor’s work.**

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**Note 29:** *On 8 October 2020, FEHD informed the Lands Department that the articles were not detected in its latest inspection. Hence, no further action by the Lands Department was deemed necessary.*

## **Response from the Government**

5.15 The Director of Food and Environmental Hygiene agrees with the Audit recommendation. She has said that:

- (a) the clean-up services provided by FEHD are usually at very remote locations, requiring long travelling time or are not readily accessible, especially those locations on outlying islands which can only be accessed by vessels. Furthermore, facing unforeseeable circumstances including weather condition and tidal movement (such as heavy wind and rough seas at winter season and typhoon at summer season), FEHD staff can only conduct inspections at the pertinent locations as circumstances permit. In order to better monitor the cleanliness of the priority sites, FEHD has proactively implemented a trial scheme to install 360-degree cameras (see paras. 6.13 and 6.14) at 15 priority sites in remote areas since March 2020 to closely monitor the accumulation of shorelines refuse and to mount clean-up operations according to the actual situation; and
- (b) FEHD has established guidelines for monitoring the performance of the contractor. To facilitate the assessment of whether the cleanliness level achieved is satisfactory, FEHD will update the guidelines to set out a benchmark on the level of cleanliness by illustrating with photographs and descriptions at the contract requirements for the contractor to attain and achieve in the next contract upon renewal in June 2021. This will help step up monitoring the cleanliness of priority sites and strengthen the supervision on the contractor's work.

## **Tendering of clean-up service**

5.16 From 2016 to 2021, FEHD adopted different grouping strategies for the contracts for provision of clean-up (and waste removal) services for the ungazetted beaches and coastal areas and other territorial sites under its purview (see Table 10).

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**Table 10**

**Contracts for provision of clean-up (and waste removal) services  
for the ungazetted beaches and coastal areas and other territorial sites  
under FEHD's purview  
(March 2016 to May 2021)**

<b>Contract period</b>	<b>Contract particulars</b>	<b>Awarded contract price for whole contract (Note 5) (\$ million)</b>	<b>Estimated contract price for shoreline clean-up (Note 6) (\$ million)</b>
1.3.2016 – 28.2.2018 (Note 1)	<b>Contract A</b>		
	Hong Kong and Islands Districts Group	5.0	2.5
	<b>Contract B</b>		
	Kowloon Districts Group	1.5	0.5
	New Territories Districts Group	4.8	2.4
1.3.2017 – 28.2.2018 (Notes 1 and 2)	<b>Contract C</b>		
	Hong Kong and Islands and Kowloon Districts Group	7.4	6.5
	New Territories Districts Group	6.8	5.8
1.6.2018 – 31.5.2019	<b>Contract D</b>		
	All districts	64.9	38.0
1.6.2019 – 31.5.2021	<b>Contract E</b>		
	Districts Group I (Note 3)	57.3	37.0
	Districts Group II (Note 4)	31.9	14.8

*Source: Audit analysis of FEHD records*

*Note 1: These three contracts were extended for three months to 31 May 2018 to allow more time to prepare for the tender exercise in 2018 (i.e. Contract D).*

*Note 2: Contract C included additional sites not covered by Contracts A and B.*

*Note 3: Districts Group I included Districts on Hong Kong Island, Islands District, Kwai Tsing District and Tsuen Wan District.*

**Table 10 (Cont'd)**

- Note 4: Districts Group II included Districts in Kowloon, Tuen Mun District, Yuen Long District, North District, Tai Po District, Sha Tin District and Sai Kung District.*
- Note 5: The awarded contract price for the service locations included special sites/areas (e.g. unallocated Government lands, slopes and soft landscape areas, nullahs, channels and watercourses), ungazetted beaches and coastal areas.*
- Note 6: The estimated contract price for the service locations included ungazetted beaches and coastal areas only.*
- Remarks: According to FEHD, the contract prices were affected by factors such as duration of a contract, manpower and service requirements (e.g. frequency of clean-up service), and pricing strategies of the tenderers.*

5.17 Audit examination on tendering of FEHD's contracts revealed the following areas for improvement:

- (a) suspected false declaration on conviction records by a contractor in a tender (para. 5.18);
- (b) over-reliance on a single contractor (para. 5.19); and
- (c) significant variances between actual hours and estimated hours for completing clean-up service (paras. 5.20 to 5.23).

***Suspected false declaration on conviction records  
by a contractor in a tender***

5.18 According to the then Financial Circular (FC) No. 4/2006 "Tightened Measures on the Management of Service Contractors" (Note 30), for service contracts that relied heavily on the deployment of non-skilled workers (Note 31), Controlling

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**Note 30:** *FC No. 3/2019 "Protection of Non-skilled Workers Engaged by Government Service Contractors" (issued on 12 March 2019) sets out the expanded scope of the debarment mechanism and the demerit point system of FC No. 4/2006, and applies to non-skilled worker contracts for which tenders/quotations are invited on or after 1 April 2019.*

**Note 31:** *Non-skilled workers referred to those performing the functions comparable to the duties of Government Model Scale 1 Grade Staff (e.g. workmen).*

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Officers should include a mandatory requirement for assessment of tenderers' past performance in terms of convictions under relevant ordinances, which included the offence to be an employer of a person who was not lawfully employable under the Immigration Ordinance (Cap. 115) (Note 32). Conviction under appeal or review should still be counted for the purpose of tender evaluation until it was quashed by the Court. For the purpose of tender evaluation, Controlling Officers should require tenderers to submit a statement of conviction under the relevant ordinances in respect of the performance of a government service contract or private business contract. The reference period for counting of tenderers' conviction record should be the five-year period immediately preceding the tender closing date. The Government would not consider a tender further or would terminate the contract if the concerned tenderer or contractor was subsequently found to have made a false declaration at the tendering stage. Audit noted a case of suspected false declaration in tender submission (see Case 1).

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**Note 32:** *Other relevant ordinances included the Mandatory Provident Fund Schemes Ordinance (Cap. 485), the Employment Ordinance (Cap. 57) and the Employees' Compensation Ordinance (Cap. 282).*

**Case 1**

**Suspected false declaration in tender submission**

1. Contractor X submitted a tender in March 2018 (for Contract D in Table 10 in para. 5.16) and declared that it had not committed any of the offences (including no record of conviction under the Immigration Ordinance). In the same month, in reply to FEHD's request for checking of conviction records, Immigration Department (ImmD) said that there was no relevant conviction record of Contractor X. Since the Contractor declared no record of conviction and ImmD also confirmed the same upon FEHD's verification, FEHD awarded Contract D to Contractor X on 30 May 2018.

2. FEHD only noticed that Contractor X had a conviction record in October 2019 when ImmD informed FEHD that Contractor X was convicted in April 2017 for employing a person who was not lawfully employable under the Immigration Ordinance, in relation to a direct procurement by quotation. According to FEHD:

- (a) the information provided by ImmD showed that on 15 May 2018, Contractor X's conviction was upheld by the Court of First Instance and it applied for leave to appeal to the Court of Final Appeal but the Court refused to grant leave in April 2019; and
- (b) since Contract D had expired in May 2019, no follow-up action could be taken by FEHD (Note).

3. In this connection, ImmD informed Audit in mid-October 2020 that it had conducted an internal review in December 2019 and the checking procedures had been strengthened.

***Audit comments***

4. Audit noted that ImmD had inaccurately informed FEHD during the appeal period that Contractor X had no conviction under the Immigration Ordinance, contrary to the requirement of FC No. 4/2006 (the scope of the debarment mechanism and the demerit point system were expanded and incorporated in FC No. 3/2019 — see Note 30 to para. 5.18) that conviction under appeal should still be counted until it is quashed by the Court. In Audit's view, ImmD needs to continue to strengthen the checking procedures on conviction records against the Immigration Ordinance and remind the checking staff of the requirements of the relevant FC that conviction under appeal should still be counted until it is quashed by the Court.

*Source: Audit analysis of FEHD records*

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### Case 1 (Cont'd)

*Note: According to FEHD:*

- (a) *other than Contract D, Contractor X was also awarded 10 FEHD contracts from April 2017 to October 2019. Contractor X declared that it had no conviction under relevant ordinances for all its tender submissions, and ImmD advised in its replies to FEHD's requests for checking of conviction records in respect of each tender submission from Contractor X that there was no relevant conviction record of Contractor X; and*
- (b) *among those 10 contracts:*
  - (i) *3 had already expired by the time of notification from ImmD in October 2019 and hence no follow-up action could be taken by FEHD;*
  - (ii) *3 other contracts were due to expire by end of April and June 2020. Having regard to the lead time of around 7 months for a tender exercise (open tender to appoint a new contractor), they were allowed to continue until expiry; and*
  - (iii) *for the remaining 4 contracts, they had been terminated before their expiry.*

### ***Over-reliance on a single contractor***

5.19 Under Contract D (see Table 10 in para. 5.16), FEHD bundled the previous three regional contracts (see Contracts A to C in Table 10) into one contract (i.e. to cover the whole territory) to enhance its flexibility in mobilising adequate contractor's staff within a short period to cope with the sudden surge of refuse in any district due to unforeseeable circumstances. In approving the acceptance of recommended tender for Contract D in May 2018, the Central Tender Board commented that the over-reliance on a single contractor was undesirable from the risk management perspective and requested FEHD to take this into account in future. In response, FEHD divided the clean-up service in tender of the succeeding contract (Contract E) into two Districts Groups (see Table 10). In May 2019, Contractor Y was awarded the contracts of both Districts Groups. According to the Financial Services and the Treasury Bureau Circular Memorandum No. 4/2019 "Concentration Risk in relation to Cleansing and Security Service Contracts" issued in April 2019, in order to promote competition, government departments are encouraged:

- (a) to split large contracts into smaller ones to facilitate small and medium-sized enterprises' participation in government tenders; and



- (b) to restrict the number of contracts to be awarded to the same tenderer if a tender involves more than one contract.

However, FEHD had not imposed any restriction on awarding the clean-up service for Districts Groups I and II to the same contractor. In order to strike a balance between competition and efficiency, FEHD might wish to, in consultation with the Department of Justice as appropriate, consider splitting the territory-wide clean-up service contract into different Districts Groups and imposing a restriction to the effect that the contracts cannot be awarded to a single contractor in future, taking due consideration of the prevailing market condition.

***Significant variances between actual hours  
and estimated hours for completing clean-up service***

5.20 According to FEHD, the estimated clean-up frequency and period of the existing contract are worked out based on experience of previous contracts with forecasting adjustments made by pertinent District Offices to account for the weather conditions, local and regional rainfall, water current/tidal movement, spillage incidents, flooding incidents in neighbouring waters and prevailing wind direction for the two-year contract period. The estimated clean-up frequency and hours for completing clean-up service (i.e. estimated hours) of individual sites in all districts are included in the clean-up contracts (see Contracts D and E in Table 10 in para. 5.16). The contractors planned their work in the work schedules. While the previous contract (Contract D) required the contractor to ensure full attendance of its personnel during the working hours specified in the work schedules (i.e. fixed-manpower approach or input basis approach), the current contract (Contract E) requires the contractor to perform clean-up service to achieve the cleanliness level to the satisfaction of FEHD (i.e. job basis approach or outcome basis approach).

5.21 According to the contract provisions of the current contract:

- (a) before 10:00 a.m. of a working day, the contractor shall submit attendance records to FEHD showing the name, post and hours of attendance of the contractor personnel who are on duty; and
- (b) the contractor will be paid based on the hourly rates (proposed by the contractor during the tendering process and accepted by FEHD) and the

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estimated hours for individual sites (inserted by FEHD in the contract) (Note 33).

5.22 In September 2020, FEHD informed Audit that:

- (a) it adopted an outcome basis approach in monitoring the clean-up service provided by the contractor. The estimated hours of each site stated in the contract specifications by FEHD provided a reference for the contractor to estimate the contract price for clean-up service of each site; and
- (b) the actual time for clean-up service at each site may vary, subject to the quantity of shoreline refuse to be collected. The contractor must complete the clean-up service at a standard to the satisfaction of FEHD. If the completion time exceeded the estimated hours of the site, the contractor would not be paid for the excess hours.

5.23 Audit selected one district each (with the longest estimated hours) from Districts Groups I and II of the current contract for comparing the estimated and actual hours for clean-up service from June 2019 to May 2020. As shown in Table 11, the actual hours incurred by the contractor were significantly less than the estimated hours included in the contract (38.3% of the estimated hours for Islands District and 53.3% for Sai Kung District respectively).

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**Note 33:** *This was different from the previous contract in which the contractor was paid at a lump sum of monthly rate upon providing clean-up service according to the contract requirements (i.e. ensuring full attendance of its personnel during the working hours specified in the work schedules).*

**Table 11**

**Comparison of estimated and actual hours for  
clean-up service in Islands and Sai Kung Districts  
(June 2019 to May 2020)**

<b>Particulars</b>	<b>Islands District (hours)</b>	<b>Sai Kung District (hours)</b>
Estimated hours (as stated in work schedules — Note 1) (a)	26,744	8,200
Revised estimated hours (as stated in monthly invoices — Note 2) (b)	26,152	8,016
Actual hours (as stated in attendance records) (c)	10,016	4,272
Percentage of actual hours as compared with revised estimated hours [(c) ÷ (b)] × 100%	38.3%	53.3%

*Source: Audit analysis of FEHD records*

*Note 1: This referred to the estimated hours required to complete the clean-up service in the contract.*

*Note 2: FEHD may amend the work schedules to suit operational needs and weather condition, and revise the estimated hours.*

*Remarks: In May 2020, FEHD requested the contractor to increase the clean-up frequency for Tung Lung Island in Sai Kung District from June 2020 to May 2021. The additional services costs will be counted against the amount of additional services of Districts Group II.*

In view of the significant variances between actual hours and estimated hours for carrying out clean-up service, Audit considers that FEHD needs to make realistic estimation of clean-up service hours for inclusion in future contracts as far as practicable.

## **Audit recommendations**

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

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- (a) **in consultation with the Department of Justice as appropriate, consider splitting the territory-wide clean-up service contract into different Districts Groups and imposing a restriction to the effect that the contracts cannot be awarded to a single contractor in future, taking due consideration of the prevailing market condition; and**
- (b) **make realistic estimation of clean-up service hours for inclusion in future contracts as far as practicable.**

**5.25 Audit has *recommended* that the Director of Immigration should continue to strengthen the checking procedures on conviction records against the Immigration Ordinance and remind the checking staff of the requirements of the relevant FC (e.g. FC No. 3/2019) that conviction under appeal should still be counted until it is quashed by the Court.**

## **Response from the Government**

**5.26 The Director of Food and Environmental Hygiene agrees with the audit recommendations in paragraph 5.24 in general. She has said that:**

- (a) **the current contract has split the territory-wide clean-up service contract into two Districts Groups. FEHD will consider splitting the territory-wide clean-up service contract into different Districts Groups as far as practicable. That said, the availability of market players for the clean-up service and the implications on the overall standard of the service need have to be carefully considered if a restriction is to be imposed to the effect that the contracts could not be awarded to a single contractor in future;**
- (b) **FEHD experienced unforeseen incidents that required pooling up resources of districts in same group to conduct massive/urgent/contingent clean-up operations in the affected individual district such as after the passage of super typhoons, e.g. Hato in 2017 and Mangkhut in 2018, massive spillage incidents and some areas were prone to accumulating shoreline refuse e.g. Shui Hau. The most recent incident was media reports of pork hocks being washed ashore from the Mainland on 11 July 2020 (see para. 2.22). As informed by EPD, rotten pork hocks were found in the shoreline in Tuen Mun District and Tsuen Wan District which posed environmental hygiene problem. It is the public expectation that the Government would**

expeditiously restore the affected area to normal cleaning condition. Therefore, a reasonably-sized contract of districts groups and suitable grouping of districts to perform such function is necessary. In Contract E, the strategic grouping of districts into two was introduced so that the manpower within the districts group could be flexibly deployed. For illustration, contract staff in Districts Group I (see Note 3 to Table 10 in para. 5.16) would be mobilised from Kwai Tsing District and Tsuen Wan District to Lantau Island e.g. Shui Hau through the road networks in case of surge of refuse. In the past few years, FEHD put on trial different models/approaches with a view to providing effective clean-up services. FEHD will keep under review and adjust district grouping where necessary based on experience and operational needs; and

- (c) the estimated clean-up service hours were worked out based on past contract estimation and a number of factors including weather conditions, local and regional rainfall, water current/tidal movement, spillage incidents, flooding incidents in neighbouring waters, and prevailing wind direction for the current contract. Given the scale and complexity, the clean-up operations are by no means easy. The amount of refuse collected fluctuates and is affected by many unforeseeable circumstances. FEHD will suitably make use of the actual hours performed by the contractor for completing the clean-up service in the current contract to provide more realistic estimation in the next contract.

5.27 The Director of Immigration agrees with the audit recommendation in paragraph 5.25 and said that ImmD has taken follow-up actions following an internal review conducted in December 2019 immediately after the incident came to ImmD's notice.

## **PART 6: OTHER RELATED ISSUES**

6.1 This PART examines other related issues in tackling shoreline refuse, focusing on:

- (a) publicity and public engagement efforts in promoting shoreline cleanliness (paras. 6.2 to 6.12);
- (b) using 360-degree camera system to monitor remote coastal sites (paras. 6.13 to 6.19);
- (c) enforcement against marine littering (paras. 6.20 to 6.24); and
- (d) provision of more water dispensers at gazetted beaches (paras. 6.25 to 6.35).

### **Publicity and public engagement efforts in promoting shoreline cleanliness**

6.2 **2015 Study.** After the setting up of the Working Group in 2012, various promotional activities were initiated in 2013 and 2014, such as the Clean Shorelines Campaign, Clean Shorelines Days, a slogan competition, a comics competition and a video filming competition to promote clean shorelines messages. A thematic website was also set up to serve as a platform for public education and engagement, information sharing, promoting participation in clean-up events, and reporting on marine refuse pollution. The 2015 Study Report identified conducting publicity campaigns to engage the community to contribute and participate as one of the improvement measures. Specific actions under the improvement measure included:

- (a) maintaining and improving a dedicated website as a platform for interaction with local community and the public; and
- (b) conducting monthly clean-up events coordinated by EPD in partnership with community groups.

6.3 ***Clean Shorelines Liaison Platform.*** In October 2018, the Chief Executive announced in the 2018 Policy Address that the Government would establish a Clean Shorelines Liaison Platform to leverage community efforts to protect the marine environment. The Clean Shorelines Liaison Platform, which includes the “Clean Shorelines” social platforms, dedicated website, designated hotline and e-mail address, is used for coordinating and promoting shorelines clean-up actions, providing appropriate support and assistance to related activities, and sharing the clean-up results.

6.4 ***Shorelines clean-up events.*** According to EPD statistics, the number of shoreline clean-up events organised was on an increasing trend from 2015 to 2019 (see Table 12).

**Table 12**

**Shoreline clean-up events organised  
(April 2015 to July 2020)**

<b>Year</b>	<b>Number of shoreline clean-up events</b>
2015 (from April)	126
2016	211
2017	213
2018	425
2019	442
2020 (up to July)	101
<b>Total</b>	<b>1,518</b>

*Source:* Audit analysis of EPD records

*Remarks:* Of the 1,518 clean-up events, 78 were organised by EPD (i.e. Shorelines Clean-up Days) and the remaining 1,440 were organised by different community groups (e.g. green groups, schools and other NGOs).

### *Clean-up events for remote and difficult-to-access coastal sites*

6.5 *No clean-up events organised at three priority sites.* Audit analysed the 543 clean-up events organised from January 2019 to July 2020 and found that no clean-up events were organised at three priority sites, namely: (i) Cape D' Aguilar, beach next to the Swire Institute of Marine Science; (ii) Sha Chau and Lung Kwu Chau Marine Park; and (iii) Lo Tik Wan in Lamma Island. Audit also noted that EPD had not included the former two sites as clean-up locations on the Clean Shorelines website (Note 34). Given the unsatisfactory cleanliness condition of the back-of-beach area of Sha Chau and Lung Kwu Chau Marine Park (see para. 3.16), Audit considered that there are merits for EPD to explore with AFCD on mobilising community efforts in organising clean-up events in the Marine Park. It is relevant to note that four clean-up events had previously been held in the Marine Park in 2012 and 2013. In response to Audit's enquiry, in September 2020, EPD said that:

- (a) the three priority sites were naturally unpopular choices for organising clean-up events. For Sha Chau and Lung Kwu Chau Marine Park in particular, the organisers of the clean-up events in 2012 and 2013 were experienced in conducting clean-up events and had their own agenda in selecting the clean-up venue (e.g. the events in 2012 were Chinese White Dolphin watching tours); and
- (b) apart from the ecological sensitivity of the Marine Park, the locations were very remote, difficult to access (i.e. no public transportation) and without provision of ancillary facilities such as public toilets nearby, and might not be suitable for general community groups (e.g. no retreat route in case of inclement weather). As such, the locations were not favoured by clean-up event organisers. It was foreseeable that it might not be effective to mobilise organisers to conduct clean-up events at the locations.

Notwithstanding the above, in order to encourage experienced and enthusiastic community groups to conduct clean-up events at the above coastal sites with genuine marine refuse problems, EPD should consider periodically promulgating their cleanliness conditions on the Clean Shorelines website (see para. 2.13).

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**Note 34:** *EPD has listed 78 clean-up locations with transportation method on the Clean Shorelines website for easy reference by community groups and members of the public.*



***Need to encourage the use of marine refuse data cards during clean-up events***

6.6 *Use of marine refuse data cards on the low side.* EPD encourages community groups to collect coastal refuse data and report them to EPD upon completion of each clean-up operation. EPD has uploaded onto the Clean Shorelines website two data card templates, one format is more comprehensive while another format is relatively simpler, serving the needs of different organisers or the objectives of different clean-up events. The organisers are encouraged to complete the data cards and submit to EPD. Such marine refuse data can serve as reference for assessing the marine refuse problem in Hong Kong. According to EPD:

- (a) the data collection exercise is for educational purposes only, with a view to letting the participants gain hands-on experience on marine refuse classification, thereby instilling habitual changes to reduce waste at source in our city at large; and
- (b) the data collected are for general reference only and not meant, by design, for carrying robust analysis with adequate statistical significance.

Audit noted that of the 1,440 clean-up events organised by community groups (Note 35) from April 2015 to July 2020 (see Remarks to Table 12 in para. 6.4), EPD only received 20 sets of marine refuse data from the organisers of 58 clean-up events. In Audit's view, EPD should continue to encourage the use of marine refuse data cards during clean-up events.

***Need to remind contractor to report accurate figures in monthly analytical reports of social media pages***

6.7 *Clean Shorelines social media pages.* EPD set up three Clean Shorelines social media pages (hereinafter referred to as Pages A, B and C) in July 2018, December 2019 and January 2020 for enhancing communication and interaction with the public through social media as well as drawing more attention to protection and appreciation of the marine environment. The numbers of followers/subscribers of

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**Note 35:** *For the clean-up events organised by EPD, since November 2018, EPD had required its event management contractor to report either the marine refuse data or the total amount of marine refuse collected for each event.*

Pages A, B and C were 4,104, 1,010 and 17 respectively as at 30 September 2020. The maintenance of Pages A and B is outsourced to a contractor.

6.8 ***Errors in monthly analytical reports.*** The contractor of Pages A and B is required to submit monthly analytical reports which summarise figures of the pages (Note 36). Audit examination of 23 monthly analytical reports from November 2018 to mid-June 2020 revealed that there were a number of errors in the figures reported in the reports. For example, a decrease by 43% in the figure “total interaction” for Page A in August 2019 was mistakenly shown as an increase by 43% (see Appendix B for a full list of the errors found in the monthly analytical reports). In response to Audit’s enquiry, in September 2020, EPD said that the figures were not performance indicators of the social media platforms (Note 37) and were for record and potential long-term reference purposes only. In light of the record and future reference value of the figures reported, EPD needs to remind its contractor to report accurate figures in the monthly analytical reports.

### ***Need to gauge public views on shoreline cleanliness***

6.9 ***Planned survey not conducted.*** According to the Working Group meeting in May 2016, EPD planned to conduct a survey to gauge the public impression on shoreline cleanliness. The objectives of the survey were to collect public views on shoreline cleanliness following the implementation of improvement measures by the Working Group since April 2015 and to identify areas for improvement. The

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**Note 36:** *The figures include: (a) fans number; (b) reach (i.e. the total number of people who read the posts at least once); (c) number of engaged users (i.e. the number of people who have reacted to posts, shared the posts, commented or clicked on the posts); (d) engagement rate (i.e. a percentage calculated by dividing the number of engaged users by the reach); (e) total interaction (i.e. the total number of reactions, shares and comments on the posts); (f) number of new contents uploaded; and (g) post engagement (i.e. the total number of reactions, shares, comments and clicks on the posts).*

**Note 37:** *According to EPD, the effectiveness of the various media and channels of the Clean Shorelines Liaison Platform is gauged in conjunction from: (a) the expansion of network with volunteer groups and individuals; (b) notice and promotion of their events through the channels; (c) assistance and support provided by EPD; (d) spreading of the environmental messages and safety guidelines; (e) sharing and reflection of the posts and the finished events; (f) understanding and recognition of the clean shorelines work and efforts; and (g) overall improvement in shoreline cleanliness.*

proposed survey consisted of two parts, namely a telephone interview to be conducted in July and August 2016 to collect views from the public, and a feedback collection exercise for participants of the clean-up events held during the period from July 2016 to January 2017. However, Audit noted that the survey was cancelled in August 2016. Regarding the reasons for cancellation, EPD informed Audit in August 2020 that:

- (a) beaches and coastal areas in the southern part of Hong Kong were hit by a sudden surge in marine refuse in July 2016, when the quantity collected increased by six to ten times above the norm;
- (b) it was believed that the floods occurring in the Mainland in mid-June 2016 might have washed an unusual amount of refuse to the sea, where the refuse was carried to Hong Kong by the southwest monsoon wind and sea currents;
- (c) it was considered that this unprecedented incident could have distorted the survey results; and
- (d) EPD had all along been committed to closely interact with the public and gauge their views on shoreline cleanliness by various media and channels including face-to-face public engagement sessions and activities organised through the Clean Shorelines Liaison Platform as well as participation in events of community groups and NGOs.

6.10 ***Need to gauge public views on shoreline cleanliness.*** According to EPD, since the release of the 2015 Study Report, the Working Group has been taking various measures to improve shoreline cleanliness, as well as to enhance the public awareness of keeping the shorelines clean, and it has been gathering feedback on these measures through face-to-face public engagement sessions and clean shorelines activities. Audit noted that the Working Group had encountered difficulties in conducting face-to-face engagement sessions and organising clean shorelines activities after 2018 due to various reasons (e.g. social unrest in 2019 and the outbreak of COVID-19 in 2020). In Audit's view, there are merits for the Working Group to consider appropriate ways to gauge public views on shoreline cleanliness at a future opportune time, e.g. reaching out to the community with partners and stakeholders through the Clean Shorelines Liaison Platform.

## Audit recommendations

6.11 **Audit has *recommended* that the Director of Environmental Protection should:**

- (a) **continue to encourage the use of marine refuse data cards during clean-up events;**
- (b) **remind the contractor of social media pages to report accurate figures in the monthly analytical reports; and**
- (c) **arrange for the Working Group to consider appropriate ways to gauge public views on shoreline cleanliness at a future opportune time.**

## Response from the Government

6.12 The Director of Environmental Protection agrees with the audit recommendations.

## Using 360-degree camera system to monitor remote coastal sites

6.13 *Trial scheme on hiring camera system services.* To address the environmental hygiene problem caused by accumulation of shoreline refuse washed ashore, FEHD launched a trial scheme on hiring camera system services (see Photograph 17 for an example of the camera) at five priority sites (Note 38) for close monitoring of shoreline refuse so that more effective refuse clean-up operations could be arranged. Digital images were captured in day time and uploaded to a central server automatically. FEHD staff monitored the condition of the coastal sites through a website provided by the contractor. The period of the trial scheme covered six months from February to July 2018.

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**Note 38:** *The five priority sites were ungazetted beaches at Shui Hau, Pui O, and Nim Shue Wan of Islands District, and Sha Lan and Yim Tin Tsai of Tai Po District. Shui Hau, Pui O and Yim Tin Tsai had put on trial the use of 360-degree cameras whereas the remaining two locations had been installed with normal cameras.*

**Photograph 17**

**A 360-degree camera installed at a shoreline  
at Kung Pui Wan of Tap Mun (East), Tai Po District**



*Source: Photograph taken by Audit staff on  
21 July 2020*

6.14 ***Operation of the 360-degree camera system.*** After reviewing the result of the trial, FEHD decided to extend the trial services at 15 priority sites (Note 39) for one year from March 2020 to February 2021. The services were procured through open tender and the contract was awarded to Contractor D in December 2019 with an estimated contract price of \$1.4 million. The contract provisions require the solar-powered 360-degree camera system to capture clear and readable images (Note 40) once every 30 minutes from 6 a.m. to 6 p.m. daily and send captured images to a server via 4G network for subsequent viewing and downloading by the contractor/government representatives in the contractor's website.

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**Note 39:** *The 15 priority sites comprised: (a) one site each in Southern District, Tuen Mun District, Sha Tin District and Sai Kung District; (b) five sites in Tai Po District; and (c) six sites in Islands District.*

**Note 40:** *In May 2019, FEHD conducted a Privacy Impact Assessment on the advice of the Privacy Commissioner for Personal Data and incorporated measures in the tender document to protect privacy of the public, such as: (a) requiring the system to blur the face of any individuals in images captured to an unrecognisable level; and (b) deleting all saved images in the system securely after one month from the date of recording.*

## Other related issues

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6.15 **Audit examination.** Audit analysed relevant data from 1 March to 31 May 2020 of the 15 priority sites where the camera system was installed (see Table 13), and found that no images were received from:

- (a) six (40%) sites for 31 to 60 days (averaging 42 days);
- (b) three (20%) sites for 61 to 90 days (averaging 73 days); and
- (c) one (7%) site for 91 days.

According to the provisions of the contract, the contractor needs to: (i) provide repair and maintenance services for the camera system within 24 hours of being notified by the government representative; and (ii) replace the damaged and malfunctioned camera system and relevant equipment at its own expenses within 48 hours upon failure of the camera system and relevant equipment.

**Table 13**

**Number of days with no images received from  
360-degree camera system at 15 priority sites  
(1 March to 31 May 2020)**

Number of days	Number of sites	
(Day)	(Number)	(%)
1 – 10	2	13 %
11 – 20	2	13 %
21 – 30	1	7 %
31 – 60	6	40 %
61 – 90	3	20 %
91	1	7 %
Total	15	100 %

*Source: Audit analysis of FEHD records*

6.16 ***Need to keep proper records on causes of malfunctioning of the camera system and follow-up actions taken.*** As shown in the “Report Form on Monitoring of Marine Refuse Washed Ashore”, six cameras had been installed in Islands District for the close monitoring of shoreline refuse at the priority sites. Audit examination revealed that, from 1 March to 31 May 2020 (92 days), there was a total of 301 camera-days without image received. However, no follow-up actions on these malfunctioning cameras had been recorded in the report forms (marked NA). Without documentation of follow-up actions on the malfunctioning cameras, Audit could not ascertain whether the contractor had complied with the contract requirement of 24-hour response time (see para. 6.15). In September 2020, FEHD informed Audit that:

- (a) from June to August 2020, repair and maintenance services on the six malfunctioning cameras were performed;
- (b) District Offices of FEHD conducted daily checking of the latest site condition through the 360-degree camera system and reported the findings in the prescribed inspection forms; and
- (c) it had promulgated a daily monitoring procedure on the camera system. With adoption of the procedure, FEHD staff were conversant with the camera system and would inform the contractor immediately if malfunctioning of the system was detected.

Audit considers that FEHD should keep proper records on causes of malfunctioning of the camera system and follow-up actions taken.

6.17 ***Need to ascertain whether the contractor has achieved the service contract requirements and consider taking follow-up actions in case of non-compliance.*** According to the service contract, the contractor shall perform the services in accordance with the terms and conditions of the contract to the satisfaction of the Government, and the Government shall pay the contractor on a monthly basis. As shown in Table 13 in paragraph 6.15, no images were received from 10 (67%) of the 15 priority sites for a period from 31 to 91 days, and the objective of monitoring the cleanliness condition of the priority sites was hampered. According to FEHD, the monthly charges could be deducted on a pro-rata basis with reference to the locations with no services provided. Audit considers that FEHD should ascertain whether the contractor has achieved the service contract requirements and consider taking follow-up actions in case of non-compliance.

## Audit recommendations

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

- (a) keep proper records on causes of malfunctioning of the camera system and follow-up actions taken; and
- (b) ascertain whether the contractor has achieved the service contract requirements and consider taking follow-up actions in case of non-compliance.

## Response from the Government

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

- (a) will continue to adopt the established daily monitoring procedure on the camera system. FEHD will further remind staff to keep proper record on the causes of malfunctioning of the camera system and the follow-up actions taken; and
- (b) envisages that successful data transmission of the captured photographs from 360-degree camera system in remote coastal areas is one of the challenges. Therefore, FEHD hired the contractor to extend the trial scheme on further evaluation of its application with effect from March 2020. The contractor conducted investigations which revealed that the malfunctioning of the camera system was generally caused by the technical problems on the on-line data transmission. The contractor has taken remedial actions to solve the connectivity problems. Moreover, if data transmission failure happens, the contractor has been requested to submit the photograph files to respective district offices by an email within 3 days so that districts would have the information of the ground situation of the sites to work out clean-up plans. To further enhance the contractual monitoring system, besides the deduction of services charge, FEHD will consider stipulating contract service requirements over the issuance of performance-related default notices for taking follow-up actions on non-compliance of the service contract requirements in the next contract upon renewal in March 2021. During the trial period, these sites will be



regularly visited by FEHD staff. In addition, FEHD has established guidelines and daily monitoring procedure to closely monitor whether the contractor has achieved the service contract requirements especially the provision of daily images of the installation locations.

## **Enforcement against marine littering**

6.20 As mentioned in paragraph 1.4, MD, AFCD, FEHD and LCSD are empowered to take enforcement actions against marine littering or nearshore littering. MD's enforcement actions were covered in the audit review on the collection and removal of marine refuse by MD (see PART 4 of Chapter 1 of the Director of Audit's Report No. 75). As shown in Table 14, while FEHD took enforcement actions in the 10-year period from 2010 to 2019 on 5 marine littering cases per annum on average (ranging from 2 to 7), AFCD only took enforcement actions in 3 of the 10 years (2010, 2011 and 2014) and LCSD only gave verbal advice without taking any prosecution action.

**Table 14**

**Statistics on AFCD, LCSD and FEHD enforcement against marine littering  
(2010 to 2019)**

Year	Number of cases			Amount of fines collected (\$)		
	AFCD (Summons)	LCSD (Summons/ fixed penalty notice) (Note 1)	FEHD (Fixed penalty notice)	AFCD	LCSD	FEHD
2010	4	–	7	6,000	–	12,300 (Note 2)
2011	3	–	6	4,500	–	9,300 (Notes 2 and 3)
2012	–	–	4	–	–	7,800 (Note 2)
2013	–	–	7	–	–	10,500
2014	1	–	6	2,000	–	7,500 (Note 3)
2015	–	–	2	–	–	3,000
2016	–	–	3	–	–	6,300 (Note 2)
2017	–	–	3	–	–	3,000 Note 3)
2018	–	–	6	–	–	9,000
2019	–	–	7	–	–	12,300 (Note 2)

*Source: Audit analysis of AFCD, LCSD and FEHD records*

*Note 1: Verbal advice was given to littering beach goers.*

*Note 2: Additional fines of \$1,500 and \$300 court fees were imposed on late payments of fines in 2010 to 2012, 2016 and 2019.*

*Note 3: Fines of three fixed penalty notices (\$1,500 each) issued in 2011, 2014 and 2017 could not be collected.*

6.21 Audit notes that while the Government has put in efforts in promoting shoreline cleanliness, enforcement action is required to deter littering. At the Working Group Meeting held in February and April 2013, June 2014, and January 2018, the issue of enforcement against marine littering was discussed:

- (a) at the meeting held in February 2013, the Chairman asked AFCD, LCSD, FEHD and MD to provide information on enforcement and said that the prosecution figures would help remind the public and the Government should step up enforcement where necessary. At the meeting held in April 2013, the Chairman commented that the number of prosecution was not particularly high;
- (b) according to a paper submitted to the Working Group Meeting in June 2014:
  - (i) enforcement against marine littering was important to prevent solid waste from entering the stormwater system and ultimately the sea. The relatively low enforcement figures from 2010 to 2013 (see Table 14 in para. 6.20) reflected a need to consider applying policing strategies; and
  - (ii) while enforcement against littering at sea, particularly in open waters and at remote/inaccessible coastal areas (e.g. rocky shores and rural ungazetted beaches), was difficult, inspections and patrol at bathing beaches, waterfront promenades, etc., needed to be stepped up to achieve a deterrent effect and thus improve compliance. Departments could increase patrols and take enforcement as necessary to those locations which attracted more visitors, particularly before and during festive events; and
- (c) according to a paper submitted to the Working Group Meeting in January 2018:
  - (i) AFCD had conducted eight joint patrols with MD targeting on marine littering at Aberdeen Wholesale Fish Market since August 2016 (with five of them taken place in 2017);
  - (ii) LCSD had deployed additional manpower during the Dragon Boat Festival and the Mid-Autumn Festival at the popular venues, such

## Other related issues

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as Shek O Beach, Stanley Main Beach and Repulse Bay Beach to enhance the cleanliness conditions;

- (iii) FEHD regarded enforcement against littering in public places as a day-to-day and on-going enforcement duty. It would continue to conduct patrols and take enforcement as necessary at locations including coastal sites under its purview where littering acts of public and visitors were serious, particularly during festive events; and
- (iv) MD had stepped up enforcement actions by conducting anti-marine littering operations at various strategic locations, such as typhoon shelters, promenades, etc. A total of 146 anti-marine littering operations (including five joint operations with AFCD) were conducted from January to November 2017.

6.22 In order to strengthen enforcement actions, FEHD had shared experience in arranging officers in plain clothes to take enforcement actions in the Working Group Meeting (see PART 4 of Chapter 1 of Director of Audit's Report No. 75). While departments were asked to step up inspections and patrols to achieve a deterrent effect and improve compliance according to the Working Group Meeting paper submitted in June 2014 (see para. 6.21(b)(ii)), Audit noted that the number of enforcement actions taken against marine littering by AFCD and LCSD had still remained low.

## Audit recommendation

6.23 **Audit has *recommended* that the Director of Agriculture, Fisheries and Conservation and the Director of Leisure and Cultural Services should step up enforcement actions against marine littering.**

## Response from the Government

6.24 The Director of Agriculture, Fisheries and Conservation and the Director of Leisure and Cultural Services agree with the audit recommendation.

## **Provision of more water dispensers at gazetted beaches**

6.25 **2015 Study.** One of the improvement measures identified by the 2015 Study was to provide support measures and facilities to reduce refuse from entering the marine environment. Providing more water dispensers at gazetted beaches, parks, waterfront promenades, and other recreational venues was one of the actions under this improvement measure (see paras. 1.7(b) and 1.9(b)). According to the 2015 Study Report, LCSD had planned to install water dispensers at four beaches in Sai Kung District and a promenade in Kowloon City District. LCSD would explore the viability of installing more water dispensers along the shorelines and suitable locations. In May 2017, EPD reported to LegCo Panel on Environmental Affairs that LCSD had provided 182 water dispensers at locations such as beaches, water sports centres, promenades and waterfront parks to encourage members of the public to bring their own reusable water bottles to avoid purchasing and consuming one-off plastic-bottled beverages, thereby lowering the chance of waste plastics entering the sea.

6.26 **2018 Policy Address.** In the 2018 Policy Address, the Chief Executive announced that the Government would install more water dispensers/filling stations in government venues to inculcate a “bring your own bottle” culture. The Government is progressively installing 500 more water dispensers in government venues and the target is to increase the total number of water dispensers serving the public in government venues to 3,200 units by 2022.

### ***Need to step up efforts in providing water dispensers at more gazetted beaches***

6.27 ***Water dispensers not provided at some gazetted beaches.*** As compared with other coastal sites with regular cleaning of shoreline refuse, gazetted beaches are characterised by high public patronage. In 2019-20, around 11 million visitors attended the gazetted beaches. As of June 2020, water dispensers were provided in 24 (59%) of 41 gazetted beaches (see Table 15).

Table 15

Gazetted beaches with water dispensers  
(June 2020)

District	Number of gazetted beaches in the district	Gazetted beaches with water dispensers	
		(Number)	(%)
Islands	9	2	22
Sai Kung	6	3	50
Southern	12	11	92
Tsuen Wan	8	2	25
Tuen Mun	6	6	100
Overall	41	24	59

Source: Audit analysis of LCSD records

In view of the high public patronage of gazetted beaches, Audit considers that water dispensers should be provided at gazetted beaches as far as practicable, to encourage members of the public to bring their own reusable water bottles to avoid purchasing and consuming one-off plastic-bottled beverages.

6.28 *Slow progress in installing water dispensers.* The installation of water dispensers in a government venue involved the collaboration of the department which managed the venue (i.e. LCSD in the case of gazetted beaches), and relevant works departments, namely the Architectural Services Department (ArchSD), the Electrical and Mechanical Services Department (EMSD), and the Water Supplies Department (WSD) (Note 41). As shown in Table 15 in paragraph 6.27, water dispensers were only installed in 2 (22%) of 9 gazetted beaches in the Islands District as of June 2020.

**Note 41:** Their respective responsibilities are as follows:

- (a) **ArchSD.** Carrying out associated building and building services works for the water dispensers, including plumbing and drainage works, provision of power supply, etc. within the boundary of gazetted beaches;
- (b) **EMSD.** Installation of water dispensers and examination of water; and
- (c) **WSD.** Approving applications for the supply of water and relevant replumbing works.

Audit selected the remaining 7 gazetted beaches (5 in Lantau Island and 2 in Cheung Chau) for examining the progress of installation of water dispensers. In June and July 2016 respectively, LCSD sought assistance from ArchSD in studying the feasibility of installing water dispensers in the gazetted beaches, and from EMSD in advising the estimated cost and period of works. However, up to July 2020, after a lapse of nearly four years, water dispensers were not yet installed in the 7 gazetted beaches. Audit examination revealed instances of delays in the installation works and inadequate follow-up actions (see Case 2 for an example).

## **Case 2**

### **Installation of water dispensers in Tong Fuk Beach**

1. In July 2016, LCSD sought assistance from EMSD in installing water dispensers at seven beaches in Lantau Island and Cheung Chau. In February 2017, after a lapse of six months, EMSD informed LCSD about the proposed water dispenser types and associated fittings.
2. After consolidating all user requirements (such as the locations and the technical details of the water dispensers) from LCSD and EMSD, ArchSD commenced technical feasibility study (including assessment of implications to existing plumbing, drainage and electrical systems, estimation of adequacy of existing water pressure, exploration of design alternatives to cope with site constraints in remote area, etc.) and preliminary design. In March 2018 (i.e. 13 months later), ArchSD submitted plumbing drawings to WSD to support LCSD's application for fresh water supply for the water dispensers in Tong Fuk Beach. In April 2018, WSD rejected the application due to missing information and non-compliance with technical requirements on plumbing proposals prescribed by WSD. ArchSD subsequently made a re-submission in May 2018 and WSD informed LCSD and ArchSD in July 2018 that it had no objection to the proposed installation, confirmed the fresh water supply and reminded LCSD and ArchSD to seek its permission on the works commencement.
3. In January 2019, WSD reminded LCSD again to seek its permission on the works commencement. In June 2019, ArchSD informed LCSD that works could not commence yet due to the need to revise the approved plumbing drawings by incorporating the changes and updates of LCSD's requirements on the details of the water dispensers received by ArchSD from May 2018 to May 2019. The revised drawings were submitted to WSD in June 2019. In

**Case 2 (Cont'd)**

July 2019, WSD approved the revised drawings and issued a final reminder to LCSD, with a copy to ArchSD, on the outstanding application for works commencement permission. In August 2019, WSD informed LCSD that the application for fresh water supply had been cancelled due to the non-submission of the works commencement permission application. In September 2019, ArchSD submitted the same set of revised drawings to WSD to support LCSD's application for fresh water supply again. With the approved plumbing design, and upon the availability of funding for the engagement of plumbing contractor, LCSD eventually applied for works commencement permission in February 2020.

4. In April 2020, WSD permitted the works commencement and ArchSD commenced the plumbing works. In June 2020, ArchSD completed the plumbing works and reported the completion to LCSD for subsequent installation of water dispensers by EMSD. According to EMSD: (a) the funding was confirmed in July 2020 by LCSD; and (b) the installation works are in progress and planned to be completed in January 2021.

***Audit comments***

5. The long time taken to install water dispensers in Tong Fuk Beach is less than satisfactory. There were delays in taking due follow-up actions. There is a need to improve the coordination between LCSD and the relevant works departments to expedite the progress in installing water dispensers in gazetted beaches.

*Source: Audit analysis of ArchSD and LCSD records*

***Need to improve the design of water dispensers to cultivate the culture of “bring your own bottle”***

6.29 ***Fountain type water dispensers installed in gazetted beaches.*** Audit found that as of June 2020, 97% of the water dispensers installed in the gazetted beaches were fountain type.



6.30 ***Installation of water filling stations in country parks.*** In July 2020, in response to the requests of the Members of LegCo Panel on Environmental Affairs, EPD reported that AFCD had installed 17 water filling stations (see Photograph 18) in country parks and had plans to install 10 more in 2021. In addition, with a view to encouraging the public to bring their own bottles, the existing water dispensers in country parks would be gradually replaced with water filling stations.

**Photograph 18**

**Water filling station in a country park**



*Source: AFCD records*

6.31 ***Need to improve the design of water dispensers in gazetted beaches.*** In general, water filling stations appear to be more hygienic than water dispensers. A notable example is that in view of the outbreak of COVID-19, while AFCD and LCSD have suspended the service of fountain type water dispensers in country parks and gazetted beaches respectively, the water filling stations in country parks are still

## **Other related issues**

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available for public use. In planning the installation of new or replacement of existing water dispensers in gazetted beaches and other venues, LCSD should consider adopting water filling stations or non-fountain type (i.e. bottle filling type) water dispensers.

## **Audit recommendations**

**6.32      Audit has *recommended* that the Director of Leisure and Cultural Services should:**

- (a)      in collaboration with the Director of Architectural Services and the Director of Electrical and Mechanical Services, expedite the installation of water dispensers in gazetted beaches; and**
- (b)      in planning the installation of new or replacement of existing water dispensers in gazetted beaches and other venues, consider adopting water filling stations or non-fountain type (i.e. bottle filling type) water dispensers.**

## **Response from the Government**

**6.33      The Director of Leisure and Cultural Services agrees with the audit recommendations. He has said that:**

- (a)      regarding the audit recommendation in paragraph 6.32(a), the progress of installing water dispensers in the seven beaches in the Islands District is as follows:**
  - (i)      the installation of drinking fountains at Pui O Beach, Upper Cheung Sha Beach, Lower Cheung Sha Beach and Tong Fuk Beach is targeted to complete by December 2020;**
  - (ii)     the request for installation of drinking fountains at Silver Mine Bay Beach was handled by ArchSD separately from the other four beaches on Lantau Island as the beach was handed over back to LCSD in June 2018 upon the completion of a major improvement works project by the Home Affairs Department and the Defect**

Liability Period expired in June 2019. LCSD would closely liaise with ArchSD to kick off the works as soon as possible; and

- (iii) regarding Cheung Chau Tung Wan Beach and Kwun Yam Beach, drinking fountains cannot be installed in these two beaches after examination by ArchSD on grounds that there is not sufficient space in the former for installation of a water pump to meet the water pressure as required by the provision and there is no sewage system in the latter for installation of the provision; and
- (b) regarding the audit recommendation in paragraph 6.32(b), LCSD has a standing guideline requiring newly installed drinking fountains to be equipped with parts for filling of water in bottles or cups as far as possible.

6.34 The Director of Architectural Services agrees with the audit recommendation in paragraph 6.32(a). She has said that ArchSD will continue to provide technical support to LCSD and will closely liaise with relevant departments in expediting actions in the installation of water dispensers as far as practicable.

6.35 The Director of Electrical and Mechanical Services has said that all active projects for the installation of water dispensers in the Islands District, in which the funding was confirmed in July 2020, are on track and in progress. He has also said that:

- (a) a period of six months for EMSD's project preparation (i.e. from LCSD's initiation on 28 July 2016 to EMSD's finalisation of the technical proposal on 20 February 2017) was practically necessary for extensive communications with the client department and other works departments to formulate the project requirements, market surveys to source suppliers and site surveys to finalise the technical proposal; and
- (b) in general practice, the taking up by EMSD on the installation of water dispenser projects could only be facilitated prior to the completion of prerequisite tasks such as feasibility study including provisions of suitable water supply and power supply.

**Appendix A**  
(Note 4 to  
para. 1.4 refers)

**Legislation and penalty related to marine and nearshore littering**

<b>Legislation</b>	<b>Responsible area</b>	<b>Enforcement department</b>	<b>Maximum penalty</b>
(a) Section 4D of Summary Offences Ordinance (Cap. 228)	Coastal waters/open waters/typhoon shelters	MD and HKPF	Fine of \$10,000 and imprisonment for 6 months or \$50,000 and imprisonment for 1 year (Note)
	Gazetted/ungazetted beaches, Marine Parks/Marine Reserve	HKPF	
(b) Section 3(1) of Fixed Penalty (Public Cleanliness and Obstruction) Ordinance (Cap. 570)	Coastal waters/open waters/typhoon shelters	MD and HKPF	Fine of \$1,500
	Gazetted beaches	LCSD and HKPF	
	Ungazetted beaches and coastal areas	FEHD and HKPF	
	Marine Parks/Marine Reserve	HKPF	
(c) Section 4(1) of Public Cleansing and Prevention of Nuisances Regulation (Cap. 132BK)	Gazetted beaches	LCSD	Fine of \$25,000 and imprisonment for 6 months
	Ungazetted beaches and coastal areas	FEHD	
(d) Section 5 and 15 of Bathing Beaches Regulation (Cap. 132E)	Gazetted beaches	LCSD	Fine of \$2,000 and imprisonment for 14 days
(e) Section 9(1)(C) of Marine Parks and Marine Reserves Regulation (Cap. 476A)	Marine Parks/Marine Reserve	AFCD	Fine of \$25,000 and imprisonment for 1 year

Source: EPD records

Note: The offender is liable to a fine of \$10,000 and imprisonment for 6 months according to Section 4D(1) of the Summary Offences Ordinance. If the offence is committed from a vessel or premises, the owner/master/proprietor/occupier of the vessel/premises is liable to a fine of \$50,000 and imprisonment for 1 year according to Section 4D(2) of the Summary Offences Ordinance.

**Errors found in figures reported  
in monthly analytical reports on Clean Shorelines social media pages  
(November 2018 to June 2020)**

- (a) The number of clicks was omitted in the calculation for the figure “post engagement” for Page A in January and February 2020, and for Page B in February 2020, understating the results by 1,387 (45%), 121 (6%) and 8 (2%) respectively;
- (b) A decrease by 43% in the figure “total interaction” for Page A in August 2019 was mistakenly shown as an increase by 43%;
- (c) An increase by 37% in the figure “number of engaged users” for Page A in April 2019 was mistakenly shown as an increase by 28%;
- (d) Errors in the computation of the figure “engagement rate” for Page A were found in July (i.e. 9.4% mistakenly shown as 7.5%) and September 2019 (i.e. 9.4% mistakenly shown as 11.3%);
- (e) Increases in the percentage of the figure “fans number” for Page A in February, April and June 2019 were understated by 5% to 14%; and
- (f) In the May 2019 monthly analytical report, the figure “fans number” for Page A in April 2019 as a comparative figure was different from that originally stated in the April 2019 monthly analytical report.

*Source: Audit analysis of EPD records*

**Acronyms and abbreviations**

AFCD	Agriculture, Fisheries and Conservation Department
ArchSD	Architectural Services Department
Audit	Audit Commission
EMSD	Electrical and Mechanical Services Department
EPD	Environmental Protection Department
FC	Financial Circular
FEHD	Food and Environmental Hygiene Department
HKPF	Hong Kong Police Force
ImmD	Immigration Department
kg	Kilograms
LCSD	Leisure and Cultural Services Department
LegCo	Legislative Council
MD	Marine Department
NGOs	Non-governmental organisations
TFMR	Task Force on Marine Refuse
UAS	Unmanned aircraft systems
WSD	Water Supplies Department