Subcommittee on Country Parks (Designation) (Consolidation) (Amendment) Order 2010

Follow-up actions arising from the discussion at the meeting on 22 June 2010

At the Subcommittee on Country Parks (Designation) (Consolidation) (Amendment) Order 2010 (the Subcommittee) meeting held on 22 June 2010, members requested the Administration to provide the following information, which this paper seeks to set out:

(a) complaint statistics of the past three years (i.e. 2007-2008 to 2009-2010) in relation to the South East New Territories (SENT) Landfill, with breakdown by number, subject, and timing of the complaints made in each year; and the corresponding enhancement measures for the landfill facility taken in response to the complaints, with the timing for implementation and commissioning, as well as analysis of the effectiveness of these measures with reference to the trend of respective figures of complaints made in the subsequent periods;

(b) insecticides and pesticides used at the landfills for mosquitoes and flies control for the past three years, if available, together with assessment of impacts, if any of these insecticides and pesticides on nearby residents and marine ecology;

(c) records on existing odour monitoring at SENT Landfill for the past three years, if available, in particular the results of odour patrols conducted independently with input from the Hong Kong Polytechnic University and detection results of e-noses, including the timing of data collection and the respective weather conditions including wind speed, wind directions and humidity;

(d) timeline of the life cycle of the 13 closed landfills, i.e. from its opening, closing, restoration works, ground settlement, environmental monitoring to its re-opening for beneficial afteruses;

(e) time table and progress of development of the Integrated Waste Management

Facilities as well as various programmes to promote recycling of waste; and

(f) whether the design capacity of the two Organic Waste Treatment Facilities (OWTF) under planning could cope with the projected daily amount of food waste generated from the commercial and industrial sector, and if not, the reasons for not enhancing the design capacity to meet the demand. The Administration was requested to brief Subcommittee members on the development of OWTF at a future meeting.

2. The Administration was also requested to discuss with the dedicated working group on odour control set up under the Sai Kung District Council more attractive compensatory measures for the betterment of the district to compensate the encroachment of the SENT Landfill extension upon the Clear Water Bay Country Park. The Administration would follow up on this request.

Complaint statistics and enhancement measures

3. Since 2005, the Environmental Protection Department (EPD) has received complaints about odour problem from Tseung Kwan O Town South, and the related figures are tabulated as follows:

Year	Number of complaints received
2007	459
2008	943
2009	629

4. Most of the complaints were received in hot and rainy months. According to EPD's records, about 90% of the complaints were received in the period of May to September in the past three years. The EPD has not received complaints on noise and water quality in relation to the South East New Territories (SENT) Landfill.

5. While the operation of the SENT Landfill is compatible with international standards, the EPD understands that Tseung Kwan O residents are concerned about the odour nuisance and have implemented additional odour management and control measures in order to further minimise its potential

odour impacts. In the past three years, the odour control measures implemented so far to minimise the possible odour emission from waste reception and landfilling included covering the tipping face with a thicker layer of soil at the end of the daily waste reception process during the rainy season; covering the non-active tipping areas with temporary impermeable liner; setting up fixed deodorisers at the boundary and entrance/exit of the landfill; providing additional mobile deodorisers at the tipping area; putting a movable cover on the special waste trench; and installing additional landfill gas extraction wells and mobile landfill gas flaring units. The above measures are summarised in the table below. The EPD will continue to implement these measures.

Additional Odour Management and Control Measures implemented in the SENT Landfill	Main Purpose	Commencement Date and Current Status
(1) Covering the tipping face with 300 mm thick layer of soil (increased from 150 mm) at the end of the daily waste reception process during rainy season. 	To prevent emission of odour from waste.	This measure commenced in June 2007 and has become part of the landfill operation.

Additional Odour Management and Control Measures implemented in the SENT Landfill	Main Purpose	Commencement Date and Current Status
(2) Covering the non-active tipping areas with temporary impermeable (green) liner, in addition to the 300 mm interim soil cover. 	To further prevent emission of landfill gas and odour from covered waste.	This measure commenced in March 2008 and as at June 2010, about 75% of the total landfilling area has been covered with the liner.
(3) Setting up fixed deodourisers at the site boundary along Wan Po Road (8 no.), at the weighbridge area (4 no.) and at the entrance/exit of the landfill (2 no.).  	To neutralise odour from refuse collection vehicles entering the landfill.	This measure commenced in March 2004 and as at June 2010, 14 fixed deodourisers have been installed.

Additional Odour Management and Control Measures implemented in the SENT Landfill	Main Purpose	Commencement Date and Current Status
(4) Providing mobile deodourisers (4 no.) at the tipping area. 	To neutralise odour from waste deposited at the tipping area.	An on-going measure commenced in March 2004. [Note: The EPD has ordered 6 additional mobile deodourisers in May 2010.]
(5) Putting a movable cover, fitted with activated carbon at the exhaust pipes, on the special waste trench.  	To minimise odour emitted from the special waste trench during its operation.	An on-going measure commenced in May 2008.

Additional Odour Management and Control Measures implemented in the SENT Landfill	Main Purpose	Commencement Date and Current Status
(6) Installing extra landfill gas extraction wells (39 no.) and mobile landfill gas flaring units (12 no.), in addition to the existing landfill gas extraction system.  	To enhance the collection of landfill gas for treatment and to completely combust localized landfill gas to prevent potential landfill gas and odour emission.	This measure has been implemented in phases since January 2008. As at June 2010, a total of 39 extra landfill gas extraction pipes were completed and 11 mobile landfill gas flaring units were installed.

Additional Odour Management and Control Measures implemented in the SENT Landfill	Main Purpose	Commencement Date and Current Status
(7) Restoring the landfill progressively.  	To cap the completed waste disposal areas with a permanent liner system and restore the areas with suitable engineering structures such as drainage system and plantation to form a natural landscape.	This measure has been implemented since 1996 and as at June 2010, 7 phases out of the total 14 phases of the landfill have been restored.

6. In addition to the above on-going measures, the EPD will upgrade the existing wheel washing facility to a full-body vehicle washing facility to ensure that the entire body of every refuse collection vehicle is washed before leaving the landfill. The EPD is also planning to construct an 800-metre wall along the boundary of the SENT Landfill facing the industrial estate to abate environmental and visual impacts to the surrounding area.

Use of insecticides and pesticides

7. The EPD has set stringent requirements on controlling pests including flies and mosquitoes at landfills. At the SENT Landfill, in addition to the daily inspections carried out by the Independent Consultants (IC) and the EPD site staff , the landfill operator and the IC carry out joint inspections weekly to assess the situation at the tipping face and areas where breeding of flies and mosquitoes may be suspected. Currently, the SENT Landfill operator applies pesticides/insecticides ("BioKill®" and "Bti"**)** manually to the landfill site on a weekly to monthly basis, depending on the weather conditions. The insecticides are effective against insect pests and they are odourless, safe to the environment, biodegradable and free of Volatile Organic Compounds. The landfill operator

will apply the pesticides/insecticides as per the manufacturer's recommendations.

8. In the past three years, the IC confirmed that no mosquito was seen around the landfill site during site inspections and the presence of flies was not considered to be a nuisance. The landfill operator would be notified immediately for follow-up actions if any potential mosquito breeding areas were identified during site inspections. Moreover, representatives from the Food and Environmental Hygiene Department carry out regular visits to the SENT Landfill and have found the condition satisfactory.

Odour monitoring at SENT Landfill

9. In addition to a series of additional odour management and control measures as described in paragraphs 5 and 6 above, the EPD site staff patrols the landfill four times daily to ensure that the operation of the landfill would not cause any odour nuisance to the surrounding areas. Furthermore, the Independent Consultants (IC) carries out regular daily odour inspections on weekdays and weekly joint inspections with the landfill operator to the waste tipping areas, general site area, perimeter access road, weighbridge area and entrance/exit of the landfill. Based on the inspection results, the IC conclude that mild odour could be scented at the weighbridge area and entrance/exit of the landfill and the odour is primarily originated from refuse collection vehicles delivering waste to the landfill. To tackle this problem, the EPD will upgrade the existing wheel washing facility to a full-body vehicle washing facility as one of the enhanced odour control measures, to ensure that the entire body of every refuse collection vehicle is washed before leaving the landfill. In addition to the routine odour patrols by the IC, various independent consultants including the Hong Kong Polytechnic University and overseas experts have been involved in the staff training as well as assessment and management of odour in the landfill in the past years.

10. As an odour monitoring related initiative, the EPD is carrying out a trial scheme on applying an electronic odour detection technology to monitor the odour nuisance reported by the residents in the Tseung Kwan O area. This is a new technology and is the first kind of application to a landfill in Hong Kong. Installation of the electronic odour detection system (E-nose) at the SENT Landfill and at a residential block in the Tseung Kwan O town has been

completed and the Hong Kong Polytechnic University has been engaged in the calibration of the system. The system is now being tested for commissioning.

Closed landfills

11. There are 16 landfills in Hong Kong of which three are operating[1] and serving the public for final waste disposal. The remaining 13 landfills[2] were closed between 1975 and 1996.

12. Restoration works of the closed landfills comprise the following two stages:-

Stage 1 - construction of restoration facilities

- to provide a low permeability cap on the surface of the site to reduce rainwater infiltration, and hence reduce leachate generation. In addition, the capping also helps to prevent emission of landfill gas to the atmosphere;
- to install a leachate management system to collect and pretreat leachate prior to discharge to sewer;
- to install a landfill gas management system to collect and control landfill gas, as well as to prevent migration of landfill gas off site; and
- to carry out slope stabilization and landscaping.

Stage 2 - aftercare work (aftercare)

- to operate and maintain the abovementioned restoration facilities; and
- to carry out environmental monitoring and audit.

13. The construction of the restoration facilities (i.e. Stage 1) of all 13 old landfill sites were completed during 1997 to 2006. The aftercare work commenced immediately upon completion of the Stage 1 works. The details of

[1] The three operating strategic landfills are South East New Territories (SENT) Landfill, North East New Territories (NENT) Landfill and West New Territories (WENT) Landfill.

[2] The 13 closed landfills are Shuen Wan Landfill, Urban Landfills (Sai Tso Wan, Ma Yau Tong West, Ma Yau Tong Central, Jordan Valley and Ngau Chi Wan Landfills), Northwest New Territories Landfills (Ma Tso Lung, Siu Lang Shui and Ngau Tam Mei Landfills), Gin Drinkers Bay Landfill, Tseung Kwan O Stage I Landfill, Tseung Kwan O Stage II/III Landfill and Pillar Point Valley Landfill.

the closed landfills are shown in Annex 1.

14. Typical details of an environmental monitoring programme are presented in Annex 2.

15. The closed landfills are suitable for afteruse as soon as the construction of restoration facilities has been completed. These restored landfills continue to produce landfill gas and leachate of varying quantities and require continuous aftercare work, i.e. operation and maintenance of the restoration facilities and environmental monitoring and auditing, to ensure the sites would not cause adverse environmental impacts to the environment and are suitable and safe for beneficial afteruse.

16. The continuing decomposition of waste results in differential ground settlement. Therefore, there are restrictions on the afteruse of restored landfills, e.g. excessive loading or construction of permanent building structures, should be avoided. The restored sites are considered more suitable for open recreational uses, on condition that these are compatible with the ongoing aftercare work. All the landfills under restoration are provided with suitable vegetation and planting.

17. The status of the current and planned afteruse development at the closed landfills is at Annex 3.

Integrated Waste Management Facilities

18. We plan to develop the IWMF to substantially reduce the bulk size of municipal solid waste (MSW) requiring landfill disposal and to recover energy from the MSW. In early 2008, we identified two potential sites (i.e. Tsang Tsui Ash Lagoon in Tuen Mun District and Shek Kwu Chau in Islands District) that could be considered for developing the first phase of the IWMF which would have a capacity of treating 3000 tonnes MSW each day. In late 2008, we commenced the detail engineering feasibility and Environmental Impact Assessment (EIA) studies to assess the overall suitability of the two potential sites. These studies would be completed in late 2010 at which time we would decide on the site for the first phase of the IWMF. We wish to commission the first phase IWMF by the middle of the 2010's.

MSW Recovery and Recycling

19. Launched in 2005, the territory-wide Source Separation of Domestic Waste Programme aims at providing suitable recycling facilities for domestic waste at locations as close as possible to its sources of generation, and at the same time broadening the types of recyclables to be recovered. It also encourages the community's participation in waste recovery and facilitates the provision of a reliable source of materials for the recycling industry.

20. As at end 2009, there were 1 256 (996 in 2008) housing estates participating in the programme, covering some 1.57 million (1.23 million in 2008) households or 67% (53% in 2008) of the population. Around 27% of them have implemented a floor-to-floor mode of waste separation, while the remaining set up waste separation facilities on the ground floor to collect different types of recyclable materials, including paper, plastics, metals, used clothes, small electrical and electronic appliances. We will continue to press ahead with the programme and, in particular, we are seeking to extend the coverage of the programme to some older districts as well as rural areas.

21. In 2009, we achieved a recovery rate of 65% for C&I waste. To press ahead with the recovery of Commercial and Industrial (C&I) waste, a promotional programme targeting C&I buildings has been operative since October 2007. Some 554 buildings have joined the programme, covering commercial and institutional buildings, industrial buildings, shopping arcades, warehouses and car parks. The programme recognizes and encourages the implementation of source separation practices in C&I buildings. We will continue to recruit new buildings. With funding support from the Environment and Conservation Fund (ECF), the Environmental Campaign Committee has been providing newly designed waste separation bins to housing estates, C&I buildings, schools, as well as recyclable collection points at public places.

Organic Waste Treatment Facilities

22. In 2009, the C&I sectors in Hong Kong disposed of about 960 tonnes food wastes each day. These food wastes were mixed with other MSW and disposed of at the landfills. We plan to develop the OWTF in phases to treat source

separated food waste from the C&I sectors so as to recover useful resources from the waste and to reduce landfill disposal. We would work with the C&I sectors to source separate their food waste and arrange for their delivery to the OWTF. The first phase of the OWTF would be located in Siu Ho Wan, North Lantau and it would have a capacity of 200 tonnes per day. The EIA study of this development has completed and it is scheduled to be commissioned in late 2013. The second phase of OWTF would be located in Shaling, North District and its treatment capacity would be similar to that of the first phase. Because of space and other practical constraints, we anticipate that not all the C&I establishments could source separate their food waste and deliver them to the OWTF in the very near future, hence we anticipate that our currently planned OWTF would be able to cope with most of the source separated food waste from the C&I sectors, to be complemented by continuous waste reduction initiatives as well as smaller scale food waste treatment facilities. Nonetheless we would closely monitor the food waste situation and review the need for further phases of OWTF when appropriate.

23. Members are invited to note the contents of this paper.

Environmental Protection Department
July 2010

Annex 1
附件一

Restoration of Landfills 堆填區的修復工程

Name of Landfill (District) 堆填區名稱 (地區)	Surface Area in Hectare 地面面積-公頃 (Flat Area available for afteruse) (可供再用的平地面積)	Quantity of Waste Received 收到廢物數量 (million tonnes) (百萬公噸)	Landfilling Start 開始堆填區運作	Landfill Closure 關閉堆填區	Construction of Restoration Facilities Started 開始建造修復設施	Aftercare Work Started 開始修護工作
Shuen Wan Landfill (Tai Po District) 船灣堆填區 (大埔區)	53.00 (15.00)	14.30	1973	1995	12/96	12/1997
5 Urban Landfills 五個市區堆填區 Ngau Chi Wan Landfill (Wong Tai Sin District) 牛池灣堆填區 (黃大仙區)	7.63 (4.00)	0.70	1976	1977	8/1998 (Part D1 & D2) 2/2000 (Part D3) 8/1999 (D1 及D2 部分) 2/2000 (D3 部分)	5/1999 (Parts D1& D2) 12/2000(Part D3) 5/1999 (D1 及D2 部分) 12/2000 (D3 部分)
Sai Tso Wan Landfill (Kwun Tong District) 晒草灣堆填區 (觀塘區)	9.15 (2.0)	1.60	1978	1980	4/1997	5/1998
Ma Yau Tong West Landfill (Kwun Tong District) 馬油塘西堆填區 (觀塘區)	5.53 (1.00)	0.60	1979	1981	3/1997	5/1998
Ma Yau Tong Central Landfill (Kwun Tong District) 馬油塘中堆填區 (觀塘區)	10.87 (0.80)	1.00	1981	1986		5/1998
Jordan Valley Landfill (Kwun Tong District) 佐敦谷堆填區 (觀塘區)	10.72 (5.00)	1.50	1986	1990		5/1998
2 Tseung Kwan O Landfills 兩個將軍澳堆填區 Tseung Kwan O Landfill Stage I (Sai Kung District) 將軍澳第一期堆填區 (西貢區)	68.00 (9.60)	15.20	1978	1995	7/1997	2/1999
Tseung Kwan O Landfill Stage II/III (Sai Kung District) 將軍澳第二/三期堆填區 (西貢區)	42.00 (2.80)	12.60	1988	1994		
3 Northwest NT Landfills & Gin Drinkers Bay Landfill 三個新界西北堆填區及醉酒灣堆填區 Ngau Tam Mei Landfill (Yuen Long District) 牛潭尾堆填區 (元朗區)	2.00 (1.00)	0.15	1973	1975	3/1999	5/2000
Ma Tso Lung Landfill (North District) 馬草壟堆填區 (北區)	2.00 (0.90)	0.20	1976	1979		6/2000
Siu Lang Shui Landfill (Tuen Mun District) 小冷水堆填區 (屯門區)	12.00 (0.60)	1.20	1978	1983		6/2000
Gin Drinkers Bay Landfill (Kwai Tsing District) 醉酒灣堆填區 (葵青區)	29.00 (2.70)	3.50	1960	1979		10/2000
Pillar Point Valley Landfill (Tuen Mun District) 望后石谷堆填區 (屯門區)	38.00 (14.00)^	11.00	1983	1996	10/2004	7/2006

^ - Includes 8 ha inside Tsing Shan Firing Range.

^ - 包括在青山靶場內的8公頃土地

Annex 2

Typical Environmental Monitoring Programme for a Restored Landfill

Category	Monitoring Details	Measurement	Purpose
Landfill Gas	Measure surface landfill gas emission	Methane	To ensure no safety risks to the personnel on site
	Detect landfill gas at perimeter monitoring boreholes, passive vents and utility manholes	Methane , Carbon Dioxide , Oxygen , Temperature	To monitor off site gas migration and safeguard the neighbourhood
	Analyse landfill gas collected from boreholes and extraction wells	Oxygen, Nitrogen, Carbon Monoxide , Carbon Dioxide , Hydrogen , Methane , Ethane , Propane , n-Butane	To monitor changes in the landfill gas quality over the years
	Detect landfill gas in buildings and confined space on site and off site	Methane , Carbon Dioxide , Oxygen	To ensure no safety risk to occupiers of these structures
	Measure landfill gas at the extraction system	Methane , Carbon Dioxide , Oxygen ,Temperature , Differential Pressure, Static Pressure , Flow	To monitor the landfill gas composition to ensure optimal operation of the landfill gas management system
	Analyse emissions of gas flaring facilities	Hydrogen Sulphide, Hydrogen Chloride, Hydrogen Fluoride, Hydrogen Bromide, Sulphur Dioxide, Nitrogen Dioxide, Carbon Monoxide, Total Non-methane Hydrocarbons	To monitor the performance of the landfill gas treatment plants
	Analyse volatile organic compound (VOC)	Trichloroethylene, Vinyl Chloride, Methylene Chloride, Chloroform, 1,2-Dichlorethane, 1,1,1-Trichloride, Carbon Tetrachloride, Tetrachloroethylene, 1,2-Dibromoethane, Toluene, Methane, Benzene	To ensure the VOC contents comply with international standards
Groundwater	Measure groundwater level and quality	Well Depth , Groundwater Level , Temperature, pH, Electrical Conductivity , Dissolved Oxygen , Alkalinity, COD , Chloride, Ammoniacal Nitrogen , Total Kjeldahl Nitrogen , Total Oxidized Nitrogen,	To monitor groundwater quality

Category	Monitoring Details	Measurement	Purpose
		Total Nitrogen, Sulphate, Sulphite, Phosphorous, Total Organic Carbon, Sodium, Potassium, Calcium, Magnesium, Iron, Manganese , Cadmium, Copper, Nickel, Lead, Zinc, Mercury, Chromium, Silver	
Leachate	Measure level of leachate at monitoring wells	Well Depth, Leachate Level , Temperature , pH , Electrical Conductivity	To avoid excessive water pressure built up at the man-made slope which might affect the overall slope stability
	Measure leachate quality at leachate management system	Temperature, pH, Electrical Conductivity, Alkalinity, COD, BOD, Chloride, Ammoniacal Nitrogen, Total Kjeldahl Nitrogen, Total Oxidized Nitrogen, Total Nitrogen, Sulphate, Total Organic Carbon, Sodium, Potassium, Calcium, Magnesium , Iron , Manganese, Cadmium, Copper, Nickel, Lead, Zinc	To check the strength of leachate in relation to landfill aging
Surface Water	Analyse surface water quality	Appearance, Temperature, pH, Electrical Conductivity, Dissolved Oxygen, Alkalinity, COD, BOD, Chloride, Ammoniacal nitrogen, Total Kjeldahl Nitrogen, Total Oxidized Nitrogen, Total Nitrogen, Sulphate, Total Suspended Solids, Total Organic Carbon, Sodium, Potassium, Calcium, Magnesium, Iron, Manganese, Cadmium, Copper, Nickel, Lead, Zinc	To ensure no discharge of contaminated surface water off site
Nuisance	Dust	Total Suspended Particulates (TSP), Respirable Suspended Particulates (RSP)	To protect the general public, neighbouring residents as well as visitors from nuisance problems
	Noise	Noise Level	
	Odour	Odour	

Annex 3

Summary of Afteruse for the 13 Restored Landfills in Hong Kong

Closed landfill	Location	Total Area [Total Flat area] (ha)	Current and Planned Afteruse
Shuen Wan	Tai Po District	53 [15]	• The site is zoned "Other Specified Uses (Golf Course)" under the Tai Po Outline Zoning Plan. • A temporary golf driving range occupying the majority of the flat area (about 15 ha) has been in operation and opened to the public since April 1999. • In October 2009, the Government invited expression of interest (EOI) for the development and operation of a golf course with ancillary facilities on the landfill site on a self-financing basis by means of Short Term Tenancy via public competitive tender and the responses were satisfactory. As there is adequate interest, Lands Department and EPD have proceeded with the preparation of tender documents and invitation.
Ngau Chi Wan	Wong Tai Sin District	7.63 [4]	• The Ngau Chi Wan Park is being developed by Leisure and Cultural Services Department (LCSD) and Architectural Services Department (ArchSD). The first phase was completed and opened to public in August 2009. The remaining part will soon be completed and is planned for opening in the latter half of 2010.
Sai Tso Wan	Kwun Tong District	9.15 [2]	• The site has been developed as Sai Tso Wan Recreation Ground. The recreation facilities have been opened to the public since April 2004.
Ma Yau Tong West	Kwun Tong District	5.53 [1]	• Kwun Tong District Council (KTDC) proposed to develop a small part of the landfill site (about 0.1 ha) into a sitting out area. Funding has been approved by KTDC and construction is now in progress. It is planned for completion in 2010. • Another part of the site (about 0.2 ha) is being used as works area by Highways Department's contractor for construction of noise barrier until mid 2010.

Closed landfill	Location	Total Area [Total Flat area] (ha)	Current and Planned Afteruse
Ma Yau Tong Central	Kwun Tong District	10.87 [0.8]	• KTDC proposed to develop a small part of the top platform of the landfill site (about 0.1 ha) into a sitting out area. Funding has been approved by KTDC and construction of the sitting out area is now in progress. It is planned for completion in 2010.
Jordan Valley	Kwun Tong District	10.72 [5]	• The Jordan Valley Park is being developed by LCSD and ArchSD. Its construction will soon be completed and it is planned for opening in the latter half of 2010.
Tseung Kwan O Stage I	Sai Kung District	68 [9.6]	• Sai Kung District Council (SKDC) has proposed to build a sitting out area cum pet garden (about 1.2 ha). Tender invitation was closed on 30 April 2010 and evaluation of the received tenders is in progress. Construction is planned to be completed in 2011. • Construction of a cycle track and pedestrian footpath along the waterfront by Highways Department (HyD) is in progress with a target completion date of early 2012. • The Hong Kong Jockey Club is considering to develop and operate a football training centre on the flat platform area as previously proposed by the Hong Kong Football Association. • The Hong Kong Baseball Association has proposed to develop and operate a baseball training pitch on a self-financing basis.
Tseung Kwan O Stage II/III	Sai Kung District	42 [2.8]	• Since August 2004, the HK Air Cadet Corps (HKACC) has been using the upper platform (about 0.5 ha) as a model aeroplane training field during weekends and Public Holidays.
Ngau Tam Mei	Yuen Long District	2 [1]	• The whole site at Ngau Tam Mei is zoned "Green Belt". Given the small size of the site with limited access, it is intended to remain as local green scenery.

Closed landfill	Location	Total Area [Total Flat area] (ha)	Current and Planned Afteruse
Ma Tso Lung	North District	2 [0.9]	• The site was returned to Tung Wah Group of Hospitals in August 2000.
Siu Lang Shui	Tuen Mun District	12 [0.6]	• It is part of the green belt area. In view of the butterfly over-wintering phenomenon there, the Agriculture, Fisheries and Conservation Department (AFCD) has included an area of 2.3 ha at the northern part of the landfill as a Site of Special Scientific Interest (SSSI).
Gin Drinkers Bay	Kwai Tsing District	29 [2.7]	• The Hong Kong Cycling Association (HKCA) has been granted a land licence for development and operation of a BMX Park at the lower platform (about 3.9 ha) on a self-financing basis. It was opened in October 2009 in time for holding the 2009 East Asian Games.
Pillar Point Valley	Tuen Mun District	38 [14^]	• Hong Kong Shooting Association (HKSA) has been granted a land licence for development and operation of a shooting range on the top platform (about 6 ha) on a self-financing basis. • The remaining 8 ha of the flat platform is within Tsing Shan Firing Range (TSFR) under the Garrison.

^ - Includes 8 ha inside Tsing Shan Firing Range.

(Dated 20100628)