

For information

Legislative Council Panel on Environmental Affairs

**PWP Item 5169DR – Restoration of Northwest New Territories
Landfills and Gin Drinkers Bay Landfill - aftercare work**

Supplementary Information

INTRODUCTION

At the Environmental Affairs Panel meeting held on 28 November 2005, Members, after considering the PWP Item **5169DR** “Restoration of Northwest New Territories Landfills (NWNTL) and Gin Drinkers Bay Landfill (GDBL) – aftercare work”, requested the Administration to provide supplementary information on –

- (a) the management and maintenance costs for the four landfills and the efforts to reduce the costs; and
- (b) the availability and usage of all restored landfill sites; the progress, programme and cost estimates of landfill afteruse development; and the responsible department for managing the afteruse projects.

THE ADMINISTRATION’S RESPONSE

Review of Aftercare Costs

2. The construction of the restoration facilities and the subsequent aftercare work for the three closed Northwest New Territories Landfills (NWNTL) and Gin Drinkers Bay Landfill were tendered and awarded under one 30-year ‘design-build-operate’ contract in 1999. The existing contractor obtained the highest score in the tender assessment of this contract and the tendered prices (design and construction of the restoration facilities + 30 years aftercare) were the lowest.

3. Based on the rates in the existing contract, we estimate the

cost of the proposed aftercare work for the second 7 years to be \$97.5 million at money of the day prices (MOD) which is \$4.5M less than the first 7 years' aftercare cost of \$101.8M.

4. From the environmental review carried out by the Environmental Protection Department in 2005, we observed that the environmental performance of the landfill over the past 5 years has been satisfactory. The level of pollutants in the landfill leachate and the amount of landfill gas (LFG) generated as a result of waste decomposition are in a steady and declining trend. We consider that some of the environmental monitoring work could be scaled down without compromising the objective of maintaining the safety of closed landfill sites and ensuring that there would be no adverse impact on the environment.

5. Therefore, based on the reduced monitoring frequency together with reduced vehicle requirement due to more efficient use of available transport, the project estimate for the aftercare work during the second 7-year aftercare period would be further reduced by \$1.8M from \$97.5M to \$95.7M (MOD).

Afteruse of Closed Landfills

6. At present, the construction of restoration facilities such as landfill gas and leachate management systems, engineered capping layers, surface water drainage system, and associated ancillary works at 12 of the 13 closed landfills have 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. The status of the restoration of the 13 closed landfills is at Enclosure 1.

7. The continuing decomposition of waste results in the differential settlement process. Therefore, there are considerable 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 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.

8. The status of the current and planned afteruse development at the closed landfills together with relevant cost estimates and responsible management departments are at Enclosure 2. Currently both the golf driving range at Shuen Wan Landfill and the recreation ground at Sai Tso Wan Landfill are already in operation. The Hong Kong Air Cadet Corps is using the flat area at the top platform of Tseung Kwan O Stage II/III Landfill as a model aeroplane training field on weekends and public holidays. The Administration is working with the Hong Kong Football Association (HKFA) to develop a Football Academy at the Tseung Kwan O Stage I Landfill. The Leisure and Culture Services Department (LCSD) has also initiated planning work for developing Jordan Valley Landfill and Ngau Chi Wan Landfill to become recreation grounds. The Administration has taken active steps to put the closed landfill sites to suitable afteruse.

Gin Drinkers Bay Landfill Afteruse

9. The proposed Kwai Chung Park is located at the closed Gin Drinkers Bay Landfill. LCSD is reviewing the priority of the Kwai Chung Park development project. In response to the request of the Kwai Tsing District Council (K&TDC), LCSD intends to develop part of the site to a leisure ground under the minor works project of an estimated cost of no more than \$15M. A passive sitting-out area was proposed for discussion in the Recreation and Culture Committee of K&TDC on 8 December 2005. Members considered that the proposal should be reviewed. An implementation programme could be firmed up when agreement is reached on the development proposal.

Environmental Protection Department
Environment, Transport and Works Bureau
December 2005

已關閉堆填區的修復進度

Progress of restoration of closed landfills

已關閉堆填區 Closed Landfill	修復設施工程開始日期 Date of Commencement of construction of restoration facilities	修護工程開始日期 Date of Commencement of aftercare work	首次環境評審完成日期 Date of completion of the 1st environmental review	環境評審的結論 Findings of environmental review
船灣堆填區 Shuen Wan Landfill	一九九六年十二月 December 1996	一九九七年十二月 December 1997	二零零三年四月 April 2003	修護工程須繼續進行 To continue aftercare work
牛池灣堆填區 Ngau Chi Wan Landfill	一九九八年八月 August 1998	一九九九年五月 May 1999	二零零三年十二月 December 2003	修護工程須繼續進行 To continue aftercare work
晒草灣堆填區 Sai Tso Wan Landfill	一九九七年三月 March 1997	一九九八年五月 May 1998		
馬油塘西堆填區 Ma Yau Tong West Landfill				
馬油塘中堆填區 Ma Yau Tong Central Landfill				
佐敦谷堆填區 Jordan Valley Landfill				
將軍澳第一期堆填區 Tseung Kwan O Stage I Landfill	一九九七年七月 July 1997	一九九九年二月 February 1999	二零零三年十二月 December 2003	修護工程須繼續進行 To continue aftercare work
將軍澳第二/三期堆填區 Tseung Kwan O Stage II/III Landfill				
牛潭尾堆填區 Ngau Tam Mei Landfill	一九九九年三月 March 1999	二零零零年六月 June 2000	二零零五年九月 September 2005	修護工程須繼續進行 To continue aftercare work
馬草壟堆填區 Ma Tso Lung Landfill				
小冷水堆填區 Siu Lang Shui Landfill				
醉酒灣堆填區 Gin Drinkers Bay Landfill		二零零零年十月 October 2000		
望后石谷堆填區 Pillar Point Valley Landfill	二零零四年十月 October 2004	二零零六年中 ⁽¹⁾ Mid 2006 ⁽¹⁾	二零零一年底 ⁽¹⁾ end 2011 ⁽¹⁾	不適用 Not Applicable

(1) : 預設時間表

(1) : Programme date

Closed Landfills Afteruse - Current Status (November 2005)

Closed landfill Total surface area (flat area) (ha)	Zoned land use	Current status	Source of funding	Estimated cost of the project	Other consideration
Shuen Wan Landfill					
Shuen Wan (Tai Po District) 50.00 (11.00)	Other Specified Use annotated Golf Course	Currently it is used as a golf driving range which is a profit sharing self-financed project. EPD is discussing with a "National" Sports Association (NSA) the feasibility of replacing the driving range by a golf course on a self-financing basis.	NSA Self-financed project.	N.A.	N.A.
Urban Landfills					
Ngau Chi Wan (Wong Tai Sin District) 7.63 (4.00)	Open space	The current plan is to develop the site as recreation ground with archery field, gateball courts, fitness corner, children's play area, 7-a-side soccer pitch, basketball courts, landscaped and sitting out areas and etc. The project has been identified as one of the 25 priority projects in the 2005 Policy Address. Leisure and Cultural Services Department (LCSD) is now carrying out planning work with relevant departments. Architectural Services Department (ArchSD) is currently designing the layout plans. The construction of the facility is scheduled to commence in early 2008 with a view to commissioning the facility by end 2010.	To be funded under CWRF.	\$193M	N.A.
Sai Tso Wan (Kwun Tong District) 9.15 (2.00)	Open space/ green belt	The recreation facilities have been opened to the public since April 2004, which includes a multi-purpose grass pitch for football and baseball, one children's playing area, a jogging trail and 2 baseball batting cages.	To be funded under CWRF ⁽¹⁾ .	\$46.4M	N.A.
Ma Yau Tong West (Kwun Tong District) 5.53 (1.00)	Partly open space and partly green belt	LCSD planned to develop the site as a rest park. EPD will discuss with LCSD on suitable afteruse of the site.	N.A.	N.A.	Lack of basic utilities. Part of the site will be used as site office and storage area for the construction of the noise barriers along Tseung Kwan O Road between 2007 and 2009.
Ma Yau Tong Central (Kwun Tong District) 10.87 (0.80)	Partly open space and partly green belt	LCSD planned to develop the site as part of Lam Tin Park. EPD will discuss with LCSD on suitable afteruse of the site.	N.A.	N.A.	Lack of basic utilities.
Jordan Valley (Kwun Tong District) 10.72 (5.00)	Open space	The current plan is to develop the site as recreation ground with jogging track, outdoor fitness station, children's playground, landscaped features, radio- controlled motor car circuit and horticultural education centre etc. The project has been identified as one of the 25 priority projects in the 2005 Policy Address. LCSD is now carrying out planning work with relevant departments. ArchSD is designing the layout plans. The construction of the facility is scheduled to commence in early 2008 with a view to commissioning the facility by end 2010.	To be funded under CWRF.	\$173M	N.A.

Note: (1) 80% of the capital cost was donated by the Hong Kong Jockey Club.

Closed Landfills Afteruse - Current Status (November 2005)

Closed landfill Total surface area (flat area) (ha)	Zoned land use	Current status	Source of funding	Estimated cost of the project	Other consideration
Tseung Kwan O Landfills					
Tseung Kwan O Stage I (Sai Kung District) 68.00 (9.60)	Open space	The proposed uses of the site include a Football Academy, open space including kite-flying area, jogging trail and cycle track and a golf driving range. The Football Academy will be located on the flat area of the site and be developed and operated by the Hong Kong Football Association (HKFA) on a self-financing basis. Hong Kong Jockey Club has agreed to provide capital funding. The construction of the Football Academy is expected to complete in end 2007.	HKFA self-financed project for the Football Academy.	N.A.	N.A.
Tseung Kwan O Stage II/III (Sai Kung District) 42.00 (2.80)	Open space	The HK Air Cadet Corps (HKACC) has been given permission since Aug 2004 to use the upper platform temporarily as a model aeroplane training field during Saturdays, Sundays and Public Holidays. Due to geotechnical constraint of the site, there is no long term committed use.	HKACC self-financed project.	N.A.	Lack of basic utilities. Geotechnical constraint affecting site access to the top platform.
Northwest New Territories Landfills and Gin Drinker's Bay Landfill					
Ngau Tam Mei (Yuen Long District) 2.00 (1.00)	Green belt	General landscaping provided. The whole site at Ngau Tam Mei is zoned "Green Belt". Given the small size of the site with limited access, the Administration is of the view that it should remain as local green scenery.	N.A.	N.A.	Vehicular access to the site is problematic as there is only one narrow, one-lane rural access road. No public utilities and sewerage available.
Ma Tso Lung (North District) 2.00 (0.90)	Government/ institution/ community	The site was returned to Tung Wah Group of Hospitals in August 2000 for recreational use.	N.A.	N.A.	N.A.
Siu Lang Shui (Tuen Mun District) 12.00 (0.60)	Mainly Green belt & small portion gov't/institution/ community	It is part of the Green Belt of the area with the existing green landscaping. EPD is now considering suitable afteruse in consultation with relevant departments and interested parties.	To be funded by minor works vote.	Not more than \$15M.	Lack of basic utilities. Flat area is divided into two separate parts. Vehicular access to the flat area problematic due to narrow site access road. Natural terrain hazard assessment required to confirm acceptability of any development.
Gin Drinkers Bay (Kwai Tsing District) 29 (2.70)	Open space	The site has been designated for Kwai Chung Park development. LCSD is reviewing the priority of the site. Currently, LCSD, ArchSD and related departments are conducting an investigation on the feasibility of opening part of the Kwai Chung Park under minor works project vote.	To be funded by minor works vote.	Not more than \$15M.	Park design should avoid applying excessive loading to the site.
Pillar Point Valley Landfill					
Pillar Point Valley (Tuen Mun District) 38.00 (14.00)	Mainly Green belt, a small part OU & Castle Peak Firing Range	Construction of landfill restoration facilities by EPD's restoration contractor is in progress and scheduled to be completed in mid 2006.	N.A.	N.A.	The Castle Peak Firing Range occupies about 26% (10ha) of the total area (38ha) and 57% (8ha) of the total flat area (14 ha) at the top platform.