

For discussion
on 24 January 2005

Legislative Council Panel on Environmental Affairs

PWP Item 5165DR– West New Territories (WENT) Landfill Extensions

Purpose

This paper briefs Members on the Administration’s proposal to the Public Works Subcommittee for upgrading part of **5165DR** to Category A for carrying out the “**Feasibility Study on the Extensions of West New Territories (WENT) Landfill**” at an estimated cost of \$32.6 million in money-of-the-day (MOD) prices.

Background

2. At present, over 6 million tonnes of wastes are disposed of in our three landfills (i.e. West New Territories (WENT) Landfill, Northeast New Territories (NENT) Landfill and Southeast New Territories (SENT) Landfill)¹ each year. When planned in the 1980s, they were expected to serve our waste disposal need till 2020. However, as the amount of waste requiring disposal has been increasing, the landfills have been filling up much faster than planned. By the end of 2004, we had a remaining landfill capacity of around 80 million tonnes. We estimate that the existing landfills would only last 6 to 10 years if waste continues to grow at the current trend.

3. Waste prevention and recycling have been our main focuses in tackling the waste problem. To encourage the public to participate in waste recovery and reduction, the Government has been carrying out a series of publicity and public education programmes. Since its establishment in 1990, the Environmental Campaign Committee has been organizing various activities to raise the public’s environmental awareness, particularly on waste reduction and

¹ The three landfills are located at Tseung Kwan O, Nim Wan in Tuen Mun and Ta Kwu Ling in North District. They occupy a total of 270 hectares of land, cost \$6 billion to build and over \$400 million a year to operate. When planned in the 1980s, they were expected to serve our waste disposal need until 2020. However, with the increasing volume of municipal solid waste in recent years, we project that the landfills would be filled up by 2015.

recovery. The Environmental and Protection Department (EPD) has also been implementing various pilot programmes to encourage waste recovery, the most recent one being the pilot programme on separation of domestic waste at source². Recovery rate has improved from 36% in 1999 to 41% in 2003 and the amount of waste disposed has leveled at about 3.4 million tonnes per year despite an economic growth of 16% since 1999.

4. However, not all wastes are recyclable. It is estimated that even if we are able to reduce waste as much as possible, there will still be over 4 million tonnes of non-recyclable wastes that need to be disposed of each year. While the Administration is actively considering the development of Integrated Waste Management Facilities (IWMF) to reduce the volume of non-recyclable waste, such IWMF could not provide immediate relief, primarily due to the long lead time required for planning and construction. Therefore, there is an imminent need to extend our existing landfills and/or to develop new ones to serve as final repositories for wastes.

5. In February 2000, EPD commissioned a strategic study called “Extension of Existing Landfills and Identification of Potential New Waste Disposal Sites” to –

- (a) determine the future need for additional landfilling capacity;
- (b) identify measures that could be used to maximize the capacity of the existing strategic landfills and to extend their lives;
- (c) identify potential extensions to the existing strategic landfills, develop extension schemes and identify the principal requirements;
- (d) identify potential sites within Hong Kong that are suitable for new landfills to meet the territory’s waste disposal needs until 2050; and
- (e) formulate an implementation plan.

6. The study was completed in early 2003 and forecast that large quantities of waste would be generated in future and the existing landfills could be completely full before 2014 if the high growth in waste generation sustained.

² The pilot programme was launched in August 2004 in 13 housing estates in the Eastern District, covering about 37,000 households and a population of 120,000. The programme aims to make it more convenient for residents to separate waste at source by providing waste separation facilities on each floor of the building. Under the programme, recyclables are separated within each estate and sold to recyclers direct. This creates a sustainable situation whereby the recycler gets recyclables at lower costs, the management company, cleansing company and/or residents’ associations get financial incentive to assist in waste recovery, and the society as a whole would benefit from more waste diverted to recycling instead of the landfills for disposal.

It noted that various measures were already under consideration to reduce the quantity of waste going to the landfill such as waste recovery programmes but the key elements central to achieving the reduction in waste requiring disposal at landfills were landfill charging and bulk waste (mainly construction waste) reduction measures. The study also found that the life of the existing landfills could be extended through the introduction of technologies to pre-treat or accelerate the biodegradation of waste but the change would only be incremental and not substantial. The study concluded that sites for landfill extensions or new landfills have to be identified for long-term waste management and identified potential sites within Hong Kong that are suitable for landfill extensions and development of new landfills.

7. The Advisory Council on the Environment (ACE) was consulted on the study's findings in December 2003. In recognition of the urgent need for more landfill capacity, the ACE agreed that the Administration should conduct detailed feasibility studies and Environmental Impact Assessments (EIA) on the proposed extensions to the existing landfills.

WENT Landfill Extension

8. Even with the successful implementation of waste reduction programme in the future, landfills will still be required. The current capacity will be exhausted and new sites need to be found. WENT Landfill Extension is one of the sites recommended by the study that would likely be feasible and environmentally acceptable for landfill development. It is a strategically important project for Hong Kong as it will provide nearly 70% (or 71M cu.m.) of the additional capacity from the landfill extension projects. The site consists of two parts, viz. WENT A (40 hectares) and WENT B (200 hectares). A site map is at Annex A for reference. The Strategic Environmental Assessment (SEA)³ indicated that ecological and cultural heritage impacts are possible concerns of the extension sites. The related findings in the SEA report are summarized at Annex B.

9. The project **5165DR**, 'WENT Landfill Extensions', comprises the development, management, operation, restoration and aftercare of the two extension sites near the existing WENT Landfill. Details of the project are described below –

- (a) developing two landfill extension sites i.e. WENT A and B Extensions covering an area of about 40 and 200 hectares

³ The SEA assesses the preliminary suitability of the sites in terms of impacts on air quality, noise, water quality, waste management, ecology, fisheries, cultural heritage, landscape and visual, and landfill gas.

respectively and with a total estimated filling capacity of 71 (6 + 65) million cubic metres, on the western side of the existing WENT Landfill;

- (b) carrying out a detailed feasibility study to cover the outline design, ground investigation, engineering assessments, EIA, land issues, public consultation and planning approval;
- (c) preparing tender and contract documents, and carrying out tendering exercise and pre-qualification procedures;
- (d) carrying out site formation and preparation, installation of liner, leachate collection, treatment and disposal, gas collection and management, utilities provisions, drainage diversion, restoration and aftercare, re-provision of a section of Nim Wan Road, and possibly the provision of marine access for the transfer of waste to the extensions; and
- (e) implementing measures to mitigate environmental impacts as well as environmental monitoring and auditing to be defined in the EIA.

Proposal

10. We propose to upgrade part of **5165DR** to Category A for carrying out the feasibility study on the extensions of WENT Landfill as described in paragraph 9(b) above.

Financial Implications

11. We estimate the cost of the proposed feasibility study to be \$32.6 million in MOD prices, made up as follows –

| | \$ million | |
|---|-------------------|---------------------------------|
| (a) Consultants' fee for | | |
| i. Detailed feasibility study and outline design | 6.5 | |
| ii. EIA study | 4.0 | |
| iii. Arranging and supervising ground investigation | 1.0 | |
| (b) Ground investigation | 20.0 | |
| (c) Contingency | 1.5 | |
| | <u>Sub-total</u> | 33.0 (in September 2004 prices) |
| (d) Provision for price adjustment | -0.4 | |
| | <u>Total</u> | <u>32.6</u> (in MOD prices) |

12. The proposed study will not give rise to any recurrent expenditure.

Public Consultation

13. The ACE was consulted in December 2003 and “agreed that the Administration would conduct detailed feasibility studies and EIAs on the proposed extensions of the NENT Landfill, WENT Landfill and SENT Landfill in accordance with the EIA Ordinance in 2004/2005”.

14. In March 2004, Tuen Mun District Council (TMDC) was consulted on the WENT Landfill Extensions. The TMDC members raised objection and passed a motion against the proposed WENT landfill extensions and the conduct of EIA. The Administration was committed to maintaining full consultation with TMDC throughout the proposed feasibility study in accordance with the EIA Ordinance (EIAO). In accordance with the EIAO requirement, EPD advertised the ‘Project Profile’, which described the scope and technical details of the

WENT Landfill Extension project for public inspection and invited comments from the public. Apart from CLP which objected to the resumption of the area currently used as lagoons for storage of pulverized fuel ash, no objection was received from the public. The EIA will take the views received into account. When the EIA Report is completed, it will be made available at specified locations for the public to comment for 30 days in accordance with EIAO.

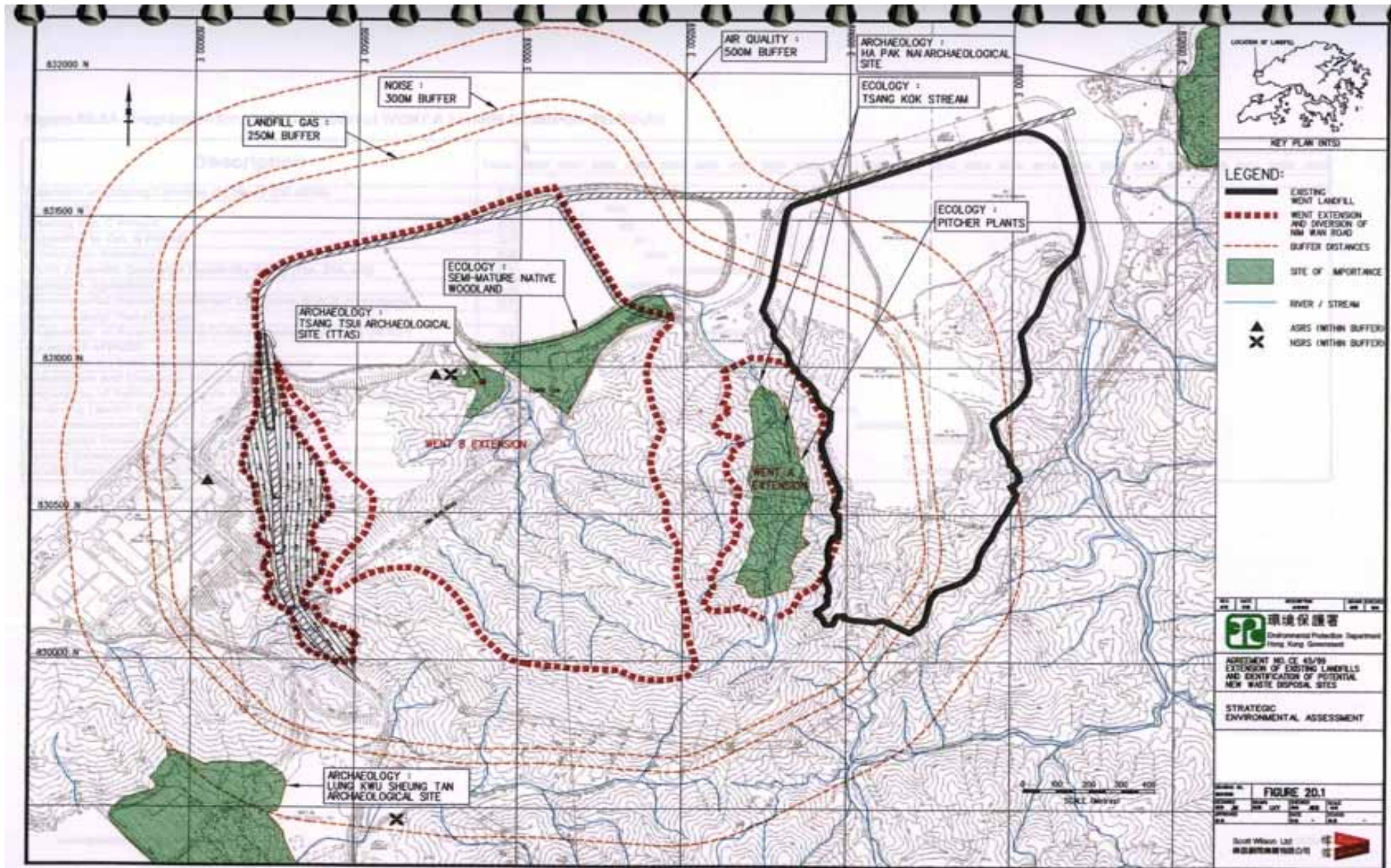
Environmental Implications

15. The proposed feasibility study will not have any impact on the environment. The study will include an EIA to assess in detail possible environmental implications.

Advice Sought

16. Members are invited to note our proposal of part-upgrade **5165DR** for consideration by the Public Works Subcommittee in February 2005 with a view to seeking funding approval by Finance Committee in March 2005.

Environment, Transport and Works Bureau
January 2005



ANNEX A - PROPOSED WEST NEW TERRITORIES (WENT) LANDFILL EXTENSIONS (NIM WAN, TUEN MUN)

Strategic Environmental Assessment Findings for WENT Landfill Extensions

Ecological

1. A protected species, Pitcher Plant, *Nepenthes mirabilis*, has been identified in the valley of Tsang Kok Stream inside the WENT A extension site which could be lost due to the landfill development. Nonetheless, this plant species is not unique in Hong Kong and the need for significant mitigation measures is not envisaged.

2. There are no protected areas within 500 metres of the extension sites and the majority of the sites are grassland/man-made lagoons of low or no ecological value. However, there is a small area of mixed shrub-land and immature native woodland within the WENT B extension site that may be worth conserving. Nonetheless, the woodland, which has developed from tall scrub habitat, is not old enough to support a diverse and stable vegetation community. Furthermore, the proximity of the woodland to human activities at the existing WENT Landfill makes it most unlikely to attract sensitive birds or other wildlife. The WENT B extension will also cover part of the Tsang Tsui Ash Lagoon, which is the habitat of two bird species. The ecological value of the site and its mitigation measures will be fully investigated and defined in the EIA Study.

3. As vegetation clearance would be necessary for the proposed landfill extensions, re-vegetation as compensation may be required using suitable native species at appropriate locations. The re-vegetation programme will be formulated in the EIA stage.

Cultural Heritage

4. The WENT B extension site covers the Tsang Tsui Archaeological Site (TTAS) in which archaeological relics of late Neolithic period (2500-1500 BC) were unearthed. An archaeological investigation conducted under the Study has revealed that except for the existing TTAS, it is unlikely that any further archaeological remains would be found within the site.

5. The SEA has investigated the opportunities to revise the boundary of the extension sites to avoid the TTAS, but they are not considered practicable. It has also explored the options of preservation in-situ by burial beneath the landfill and ex-situ preservation by removal to minimize the impacts on the TTAS. Opportunities to maximize the preservation of archaeological features of the TTAS would be pursued during the EIA stage.