

**For discussion
on 26 February 2007**

Legislative Council Panel on Environmental Affairs

PWP Item 5168DR – Refurbishment and Modification of Island East Transfer Station

Purpose

This paper briefs Members on the Administration's proposal to submit PWP Item **5168DR** "Refurbishment and Modification of Island East Transfer Station (IETS)" to the Public Works Subcommittee for upgrading to Category A for the design and construction of refurbishment and modification works of the IETS at an estimated cost of \$57.5 million in money-of-the-day (MOD) prices.

Background

2. There are 6 refuse transfer stations¹ (RTSs) and 7 small refuse transfer facilities serving outlying islands in Hong Kong. Municipal solid waste (MSW) were collected and delivered to the RTSs by refuse collection vehicles (RCVs), where waste is compacted and containerized and then transferred to landfills by either marine or land transport². Transportation of waste in bulk from RTSs to remote landfills greatly reduces the traffic and environmental nuisances associated with RCVs moving on the road as well as the transportation cost.

3. The existing IETS is one of the two RTSs serving Hong Kong Island³. At present, about 863 tonnes per day of refuse collected from the Eastern and Wan Chai Districts are delivered to the IETS for compaction and containerization, followed by marine transfer to the WENT Landfill for disposal.

¹ The Kowloon Bay Transfer Station was converted into a recycling centre in 2005.

² The majority of MSW were collected by the Food and Environmental Hygiene Department (FEHD) or their contractors and delivered to the RTSs. Some of the MSW collected by private waste collectors were also delivered to RTSs. In 2005, The average daily waste handled by RTSs was 5,400 tonnes and more than 92% were collected by FEHD and their contractors.

³ The other RTS serving Hong Kong Island is the Island West Transfer Station (IWTS). In 2005, 1,900 tonnes per day of waste were generated from Hong Kong Island. Out of which 1,189 tonnes were publicly collected waste and 707 tonnes were privately collected waste and they were delivered to IETS, IWTS and South East New Territories (SENT) Landfill. The publicly collected waste and private collected waste delivered to IETS were 776 and 87 tonnes respectively.

4. The operation of the IETS during the past 14 years has enabled bulk transfer of refuse in an environmental acceptable manner and greatly reduced the corresponding potential traffic and environmental nuisances caused to the public.

5. As the existing contract for the operation of the IETS will end on 15 November 2007, we completed a review on the IETS operation in January 2005. The review concluded that continual operation of the IETS was necessary and crucial for efficient transfer of refuse originating from the Hong Kong Island to the disposal facilities. In addition it was considered that opportunity should be taken to develop a pilot waste recycling facility at the IETS to recover recyclable materials as well as to obtain local data and experience for progressive development of centralised waste recycling facilities in Hong Kong.

Proposal

6. We commissioned a study in January 2006 to examine the feasibility and requirements for continuing the waste transfer service and the development of a pilot recycling facility at the IETS. We identified that some refurbishment and modification works are required to enhance the operational efficiency and environmental performance of the waste transfer service. These include upgrading of the site boundary walls and site entrance to improve traffic flow and safety, additional landscaping work and modification of electrical and mechanical equipment to improve environmental performance. We also identified that some existing mechanical compactors are becoming worn out which would increase the risk of breaking down in the coming years. To ensure uninterrupted waste transfer operation, we propose that provision be made for the replacement of one compactor as and when necessary during the IETS follow-on operation period.

7. We also propose that a pilot waste recycling facility of about 30 tonnes per day capacity be incorporated in the IETS to recover recyclable materials from the mixed waste received and to obtain local data and experience for progressive development of centralised waste recycling facilities in Hong Kong.

8. The pilot waste recycling facility would be located at the existing open storage area of the IETS site. It would be housed inside a building equipped with necessary pollution control and deodorization provisions. It would employ biological and mechanical technologies to stabilize the mixed waste and to recover useful materials, such as metals and plastics, which could be delivered to the recycling industries for recycling.

The residual stabilized waste from the pilot facility would be of smaller volume and would be further compacted and delivered to the landfill for disposal. Apart from the reduction in volume, considerably less green house gases would be produced at the landfill when compared with that generated by untreated raw waste.

9. In brief, the scope of the project comprises :-
- (a) design and construction for the refurbishment and modification of the waste transfer station –
 - (i) civil engineering and building works for improvement of site boundary walls and site entrance;
 - (ii) landscaping works;
 - (iii) modification to electrical and mechanical equipment;
 - (iv) replacement of mechanical compactor; and
 - (b) design and construction of a pilot waste recycling facility.

The proposed works are to be carried out at the IETS and its location plan is at Enclosure 1. We plan to commence the proposed works in November 2007 for completion in December 2008.

10. We intend to implement the proposed works and the follow-on operation of the IETS under a Design-Build-and-Operate contract arrangement. The contractual operation period will be 4.5 years with an option to extend up to 8 years. We will review and determine the longer term requirements of the IETS prior to the end of the 4.5 year contractual operation period⁴. Currently, the prequalification of tenderers through open tendering for the proposed contract is in progress, the prequalified tenderers would be identified and invited for contract bidding in mid 2007.

⁴ This is to allow the Government flexibility in considering the contracts of the two transfer stations on Hong Kong Island together as the 4.5 years will tie in with the expiry of the Island West Transfer Station.

Financial Implications

11. We estimate the capital cost of the project to be \$57.5 million in MOD prices, made up as follows –

	\$ million	
(a) Design and construction for the refurbishment and modification of waste transfer station	11.0	
(i) Civil engineering and building works	2.0	
(ii) Landscaping works	0.5	
(iii) Electrical and mechanical equipment	1.0	
(v) Provision for replacement of mechanical compactor	7.5	
(b) Design and construction of a pilot waste recycling facility	40.0	
(c) Independent assessor's fees	1.0	
(d) Contingencies	<u>3.8</u>	
	Sub-total	55.8 (in September 2006 prices)
(e) Provision for price adjustment	<u>1.7</u>	
	Total	<u>57.5</u> (in MOD prices)

12. The annual recurrent expenditure mainly on the operating cost of the waste transfer operation including the proposed pilot waste recycling facility is estimated at \$73 million per year.

13. The contract management, supervision and environmental monitoring during the operation stage will be undertaken by the existing EPD staff currently overseeing the contract of IETS. No additional staff and other recurrent costs will be required.

14. We estimate that the proposed project will create 63 jobs (57 labourers and another 6 professional/technical staff) providing a total employment of 730 man-months during the design and construction stage, and will continue to provide 78 existing jobs (65 professional/technical staff and 13 labourers) plus 3 additional jobs (3 labourers) during the operation stage.

Public Consultation

15. We consulted the Environment and Hygiene Committee of the Eastern District Council on 16 November 2006 and 11 January 2007. Members expressed their support for the project on 11 January 2007.

Environmental Implications

16. The existing IETS is an exempted designated project under the Environmental Impact Assessment Ordinance (EIAO). As the proposed refurbishment and modification works and the pilot waste recycling facility involve physical alternations, we have conducted an Environmental Review (ER) to examine whether these alternations would result in adverse environmental impact or not. The ER concluded that the proposed alternations would not result in adverse environmental impacts and therefore would not constitute a material change to the exempted designated project under the EIAO.

17. Under this project, we will implement additional landscaping works and modify the electrical and mechanical equipment to further enhance the environmental performance of the IETS. We will increase the frequency of site cleansing and also the frequency of environmental monitoring and audit to ensure the environmental performance of IETS is in full compliance with the contract and statutory requirements. During the design and building stages, we will require the contractor to appoint an independent assessor to ensure that the environmental performance of the works comply with the contract requirements. Throughout the contract period, we will withhold payment to the contractor if there is any non-compliance with the environmental performance requirements.

18. We have considered measures such as to keep the level of the foundation as shallow as possible so as to minimize the amount of excavation materials in the planning and design stages to reduce the generation of construction and demolition (C&D) materials where possible. In addition, we will require the contractor to reuse inert C&D materials (e.g. excavated materials reused as backfill) on site or in other suitable construction sites as far as possible, in order to minimize the disposal of C&D materials to public fill reception facilities. We will encourage the contractor to maximize the use of recycled or recyclable C&D materials, as well as the use of non-timber formwork to further minimize the generation of construction waste.

19. We will also require the contractor to submit a waste management plan (WMP) for approval. The WMP will include appropriate mitigation measures to avoid, reduce, reuse and recycle C&D materials. We will ensure that the day-to-day operations on site comply with the approved WMP. We will control the disposal of public fill, C&D materials and C&D waste to public fill reception facilities, sorting facilities and landfills respectively through a trip-ticket system. We will require the contractor to separate public fill from C&D waste for disposal at appropriate facilities. We will record the disposal, reuse and recycling of C&D materials for monitoring purposes.

20. We estimate that the project will generate about 1,570 tonnes of Construction and Demolition (C&D) materials. Of these, we will reuse about 900 tonnes (57%) on site, deliver 450 tonnes (29%) to public fill reception facilities⁵ for subsequent reuse, and 160 tonnes (10%) to sorting facilities in order to retrieve the inert portion for use as public fill. In addition, we will dispose of 40 tonnes (3%) at landfills and will recover around 20 tonnes (1%) of metals for sale to recyclers. The total cost for accommodating C&D materials at public fill reception facilities and landfill sites, together with the cost for handling the materials at sorting facilities is estimated to be \$33,150 for this project (based on a unit cost of \$27/tonne for disposal at public fill reception facilities, \$100/tonne at sorting facilities and \$125/tonne⁶ at landfills).

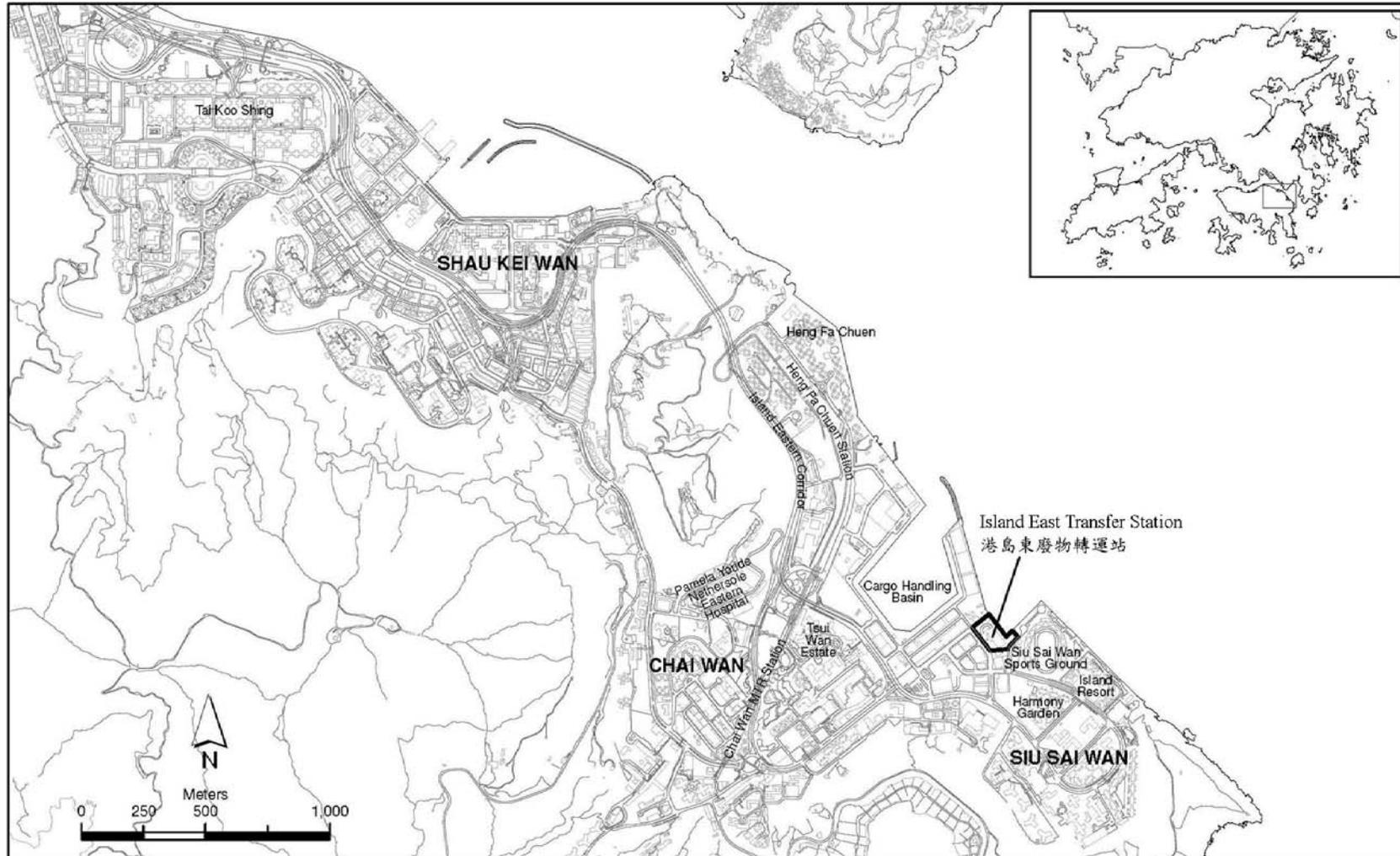
⁵ Sorting facilities and public fill reception facilities are specified in Schedule 3 and Schedule 4 respectively of the Waste Disposal (Charges for Disposal of Construction Waste) Regulation. Disposal of public fill in public fill reception facilities requires a licence issued by the Director of Civil Engineering and Development.

⁶ This estimate has taken into account the cost for developing, operating and restoring the landfills after they are filled and the aftercare required. It does not include the land opportunity cost for existing landfill sites (which is estimated at \$90/m³), nor the cost to provide new landfills, (which is likely to be more expensive) when the existing ones are filled.

Advice Sought

21. Members are invited to note our proposal of upgrading **5168DR** for consideration by the Public Works Subcommittee in April 2007 with a view to seeking funding approval by Finance Committee in May 2007.

Environmental Protection Department
February 2007



Location of Island East Transfer Station
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