

ITEM FOR FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING Environmental Protection – Refuse Disposal 165DR - West New Territories Landfill Extension

Members are invited to approve –

- (a) the upgrading of part of **165DR**, entitled “West New Territories landfill extension – consultants’ fees and investigations”, to Category A at an estimated cost of \$36.8 million in money-of-the-day prices; and
- (b) the retention of the remainder of **165DR** in Category B.

PROBLEM

We need to re-submit the funding proposal of **165DR** (with necessary revisions following the last Finance Committee (FC) discussion on 12 July 2013) regarding the West New Territories (WENT) Landfill Extension project for consideration by FC.

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to upgrade part of **165DR** to Category A at an estimated cost of \$36.8 million in money-of-the-day (MOD) prices (after making the necessary revisions upon PWSC(2013-14)21 at Enclosure 1 detailed in the ensuing paragraphs) for engaging consultants to commission a study and undertaking tasks to make preparations necessary for the WENT Landfill Extension project.

Encl. 1

/JUSTIFICATION

JUSTIFICATION

3. On 2 July 2013, the Public Works Subcommittee (PWSC) recommended that part of **165DR** be upgraded to Category A at an estimated cost of \$35.1 million in MOD prices for engaging consultants to commission a study and undertaking tasks to make preparations necessary for the WENT Landfill Extension project vide PWSC(2013-14)21. At the meeting of the FC on 12 July 2013, when considering the PWSC recommendation, a motion to adjourn the discussion of the project was passed. To maintain a continuous waste disposal outlet for the western part of the territory upon the anticipated exhaustion of the WENT Landfill in 2018-19, we need to re-submit the funding proposal of **165DR** to FC for consideration.

4. The project scope for the part of **165DR** to be upgraded as specified in PWSC(2013-14)21 remains unchanged. However, as a year has lapsed, we need to make the following necessary revisions –

- (a) adjusting the project cost estimate to \$36.8 million in MOD prices due to change in price level (from September 2012 to September 2013), change in the latest set of assumptions on the trend rate of change in the prices of public sector building and construction output, as well as revision in cash flow requirement;
- (b) updating the deferred programme of the project; and
- (c) adjusting the estimates for consultants' fees based on latest estimations.

5. To reflect the revisions mentioned in paragraph 4, the following parts in PWSC(2013-14)21 will be revised as below –

- (a) replace the 'Preamble', paragraphs 2, 4 and 5, 11 to 13 in PWSC(2013-14)21 by the 'Preamble', paragraphs 2, 4 and 5, 11 to 13 in Enclosure 2; and
- (b) replace Enclosure 2 to PWSC(2013-14)21 by Enclosure 3.

Encl. 2

Encl. 3

6. The other information in PWSC(2013-14)21 remains valid save for the revisions detailed in paragraph 5.

/FINANCIAL

FINANCIAL IMPLICATIONS

7. We estimate the capital cost of the proposed part to be upgraded would be revised to \$36.8 million in MOD prices. Please refer to Enclosures 2 and 3 for details.

BACKGROUND

8. The PWSC recommended on 2 July 2013 that part of **165DR** be upgraded to Category A at an estimated cost of \$35.1 million in MOD prices for engaging consultants to commission a study and undertaking tasks to make preparations necessary for the WENT Landfill Extension project. When considering the PWSC recommendation on 12 July 2013, FC passed a motion to adjourn the discussion of the project. We need to make the necessary revisions due to the lapse of time.

Environment Bureau
June 2014

For discussion
on 26 June 2013

PWSC(2013-14)21

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 705 – CIVIL ENGINEERING
Environmental Protection – Refuse disposal
165DR – West New Territories Landfill Extension

Members are invited to recommend to the Finance Committee –

- (a) the upgrading of part of **165DR**, entitled “West New Territories landfill extension – consultants’ fees and investigations”, to Category A at an estimated cost of \$35.1 million in money-of-the-day prices; and
- (b) the retention of the remainder of **165DR** in Category B.

PROBLEM

The existing West New Territories (WENT) Landfill is anticipated to be exhausted in 2018-19 and there is a need to maintain a continuous waste disposal outlet for the western part of the territory.

/PROPOSAL

PROPOSAL

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to upgrade part of **165DR** to Category A at an estimated cost of \$35.1 million in money-of-the-day (MOD) prices for engaging consultants to commission a study and undertaking tasks to make preparations necessary for the WENT Landfill Extension project.

PROJECT SCOPE AND NATURE

3. The part of **165DR** that we propose to upgrade to Category A comprises –

- (a) a consultancy for the WENT Landfill Extension project (the proposed study), which includes –
 - (i) outline design of the extension scheme;
 - (ii) study on interfacing and handing-over issues;
 - (iii) arrangement and supervision of site investigation and baseline surveys¹ in (b) below;
 - (iv) tender document preparation, tender assessment and contract procurement;
 - (v) contract administration and management of resident site staff in the initial years of the design-build-operate contract; and
- (b) associated site investigation works, baseline surveys and publicity programme.

_____ A plan showing the location of the WENT Landfill Extension site is at Enclosure 1.

/4.

¹ Baseline surveys include topographic survey, environmental survey, tree survey, utilities survey, etc. to collect the most updated information to facilitate the commencement of the works.

4. We will retain the remainder of **165DR** in Category B, which involves all works necessary for the development of WENT Landfill Extension. Funding for the remainder of **165DR** at an estimated cost of over \$9,000 million (in September 2012 prices) will be sought upon completion of the necessary preparation work prior to the invitation of tenders for the WENT Landfill Extension contract. The target waste intake commencement date for the WENT Landfill Extension project will tie in with the date when the WENT Landfill is exhausted, which is anticipated to be in 2018-19.

5. Subject to the funding approval of the Finance Committee, we plan to engage consultants in December 2013 to commission the proposed study and carry out the necessary preparation work for the WENT Landfill Extension project. The proposed study is tentatively scheduled for completion upon two years after the commissioning of the proposed WENT Landfill Extension.

JUSTIFICATION

6. We released the “Hong Kong Blueprint for Sustainable Use of Resources 2013-2022” (the “Action Blueprint”) on 20 May 2013², which maps out a comprehensive strategy with targets, policies and action plans for waste management for the coming ten years to tackle the imminent waste challenge. The Action Blueprint has illustrated that, even if measures and facilities are taken forward as planned, and waste reduction targets are achieved as set, there will still be about 10 000 tonnes of waste that require disposal every day in 2017.

7. Landfills are an essential and ultimate part of the waste management chain everywhere in the world and the same applies to Hong Kong. No matter how hard we work to reduce waste, there will still be inert materials, non-recyclables, construction waste and post-treatment residues that need to be disposed of, and in the case of Hong Kong, municipal solid waste that could not be otherwise treated due to lack of modern waste treatment facilities. With the three existing landfills³ to be exhausted one by one by 2019, while large scale waste-to-energy facilities have yet to come on stream by then, we have no means to tackle such waste apart from extending the landfills in time. Without the three landfill extension projects, we cannot provide adequate disposal outlets to serve the whole territory nor maintain a continuous waste disposal service to the public upon the exhaustion of the existing landfills.

/8.

² The blueprint is available at the website of the Environmental Protection Department (www.epd.gov.hk).

³ Namely the Northeast New Territories Landfill, Southeast New Territories Landfill and the West New Territories Landfill.

8. We anticipate that the WENT Landfill will be exhausted in 2018-19. Timely extension of the landfill is crucial as it is an integral part of Hong Kong's waste management strategy as set out in the Action Blueprint. The WENT Landfill Extension project could provide additional landfill capacity to maintain a continuous waste disposal service to the public in the western part of the territory.

9. The proposed WENT Landfill Extension site covers about 200 hectares (ha) of land and could provide about 81 million cubic metres of additional landfill capacity to cope with the continuous need for final waste disposal in the western part of the territory, and in a longer term for the whole territory. The scope of the extension project comprises site formation, construction of surface water and ground water management systems, installation of leachate and landfill gas management systems, construction of restoration and aftercare facilities, backfilling of a stream outfall, as well as realignment of a section of the Nim Wan Road⁴. The estimated operating life of the proposed landfill extension is about 15 years, which may vary according to future development such as extent of waste reduction, and will be reviewed in the proposed study.

10. We have completed an engineering feasibility and environmental impact assessment (EIA) study for the WENT Landfill Extension project in February 2010, which confirms the engineering feasibility of the WENT Landfill Extension project and that with appropriate environmental mitigation measures, the project will be environmentally acceptable.

FINANCIAL IMPLICATIONS

11. We estimate the cost of the proposed study to be \$35.1 million in MOD prices (please see paragraph 12 below), broken down as follows –

/(a)

⁴ Realignment of Nim Wan Road and backfilling of a stream outfall are necessary as the existing Nim Wan Road cuts across the proposed landfill extension site. The stream outfall, upon backfilling, will form a platform for essential infrastructure for the extension project.

	\$ million	
(a) Consultants' fee for	16.7	
(i) outline design	4.1	
(ii) study on interfacing and handing-over issues	2.5	
(iii) arrangement and supervision of site investigation and baseline surveys	2.0	
(iv) tender preparation, tender assessment and contract procurement	2.0	
(v) contract administration and management of resident site staff	6.1	
(b) Site investigation	4.0	
(c) Baseline surveys	3.0	
(d) Publicity programme/material	1.3	
(e) Contingencies	2.5	
Sub-total	27.5	(in September 2012 prices)
(f) Provision for price adjustment	7.6	
Total	35.1	(in MOD prices)

_____ A breakdown of the estimates for consultants' fees by man-months is at Enclosure 2.

12. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2012)	Price adjustment factor	\$ million (MOD)
2013 – 2014	1.1	1.06225	1.2
2014 – 2015	3.3	1.12599	3.7
2015 – 2016	5.5	1.19354	6.6
			/2016

Year	\$ million (Sept 2012)	Price adjustment factor	\$ million (MOD)
2016 – 2017	9.0	1.26516	11.4
2017 – 2018	3.5	1.34107	4.7
2018 – 2019	1.8	1.41147	2.5
2019 – 2020	1.8	1.48205	2.7
2020 – 2021	1.5	1.55615	2.3
	<u>27.5</u>		<u>35.1</u>

13. We have derived the MOD estimate on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2013 to 2021. We will tender the proposed consultancy on a lump sum basis. The contract will provide for price adjustments. We will deliver tasks related to site investigation, baseline surveys and publicity activities on a re-measurement basis as there is uncertainty over the actual extent of work to be involved. Price adjustments will also be provided.

14. The proposed upgrading of part of **165DR** to Category A will not give rise to any recurrent consequence.

PUBLIC CONSULTATION

15. We have adopted a continuous public involvement approach during the planning and development stages of the project, including the statutory EIA process. We have conducted a series of public consultation/engagement sessions through which we considered and addressed the concerns of relevant stakeholders and other interested parties on the landfill extension project.

16. We have been consulting the Tuen Mun District Council (TMDC) since 2004 on the proposal to conduct engineering feasibility and EIA study for the project, and from time to time reported to TMDC on the study progress. During the TMDC consultation in January and September 2009, TMDC members passed a motion objecting to further waste facilities in Tuen Mun, and requested the Government to review the overall planning on the long-term development of Tuen Mun. To address members' concern, the Environment Bureau (ENB) took the lead and set up the Tuen Mun Development Liaison Working Group, with representatives from ENB, Development Bureau, Transport and Housing Bureau, Food and Health Bureau, Home Affairs Department and TMDC members, to look into strategic matters relating to the long-term development of the district. Ten meetings have been held since March 2009 to follow up TMDC members' proposals and to report on the progress and development of the action items. A number of improvement and betterment measures including the improvement of the Tuen Mun transport network and public transport services, enhancement of Tuen Mun Area 46 for high value usage, revitalization of Tuen Mun industrial area and establishment of an air monitoring station in Tuen Mun town centre are being pursued or explored. We will continue to maintain close liaison with TMDC, the local community and other relevant stakeholders in taking forward the project.

17. We last consulted the Legislative Council Panel on Environmental Affairs (the Panel) on 27 May 2013 on the proposed extension. A motion against the proposed WENT Landfill Extension was not passed and the Panel did not object to the submission of the proposal to Public Works Subcommittee for consideration.

ENVIRONMENTAL IMPLICATIONS

18. In view of the nature of the proposed study, we consider that there is little environmental implication to be incurred by this consultancy study. We will implement suitable mitigation measures to control the short-term environmental impacts from the site investigation works. The proposed site investigation works will only generate very little construction waste. We will require the consultants to fully consider measures to minimise the generation of construction waste and to reuse/recycle the construction waste as much as possible in the future implementation of the construction projects.

19. As for the whole project, **165DR** is a designated project under the EIA Ordinance. The EIA report for the project was approved on 20 November 2009 after consulting the general public and the Advisory Council on the Environment. The Environmental Permit for the construction and operation of the landfill was issued on 3 June 2010.

20. The approved EIA report has provided a comprehensive assessment of the potential environmental impacts associated with the construction, operation, restoration and aftercare phases of the project. With the implementation of the proposed mitigation measures, the EIA concluded that the potential environmental impacts of the WENT Landfill Extension would be controlled to within the established standards and guidelines. An environmental monitoring and audit programme is also recommended to ensure the effectiveness of the proposed mitigation measures.

HERITAGE IMPLICATIONS

21. The proposed study and associated site investigation works and surveys will not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interest and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

22. The proposed study will confirm the site boundary of realignment of a section of the existing Nim Wan Road and backfilling of a stream outfall. Gazette arrangement for these proposed works will be reviewed and conducted under appropriate ordinances accordingly.

23. As for the remaining works of **165DR**, we have, during the feasibility study stage, identified private lots to be resumed and major land clearance required. We will carry out a detailed review to minimize the extent of land acquisition in the proposed study. Details of land resumption and clearance costs will be provided when we upgrade the remainder of **165DR**.

BACKGROUND INFORMATION

24. In February 2000, we commissioned a territory-wide study “Extension of Existing Landfills and Identification of Potential New Waste Disposal Sites” to identify new landfill capacity for waste disposal in Hong Kong up to 2050, at an estimated cost of \$5.1 million in MOD prices. We charged this amount to block allocation **Subhead 5101DX** “Environmental works, studies and investigations for items in Category D of the Public Works Programme”. The extension of the existing WENT Landfill was recommended as an integral part of the future waste management strategy in Hong Kong.

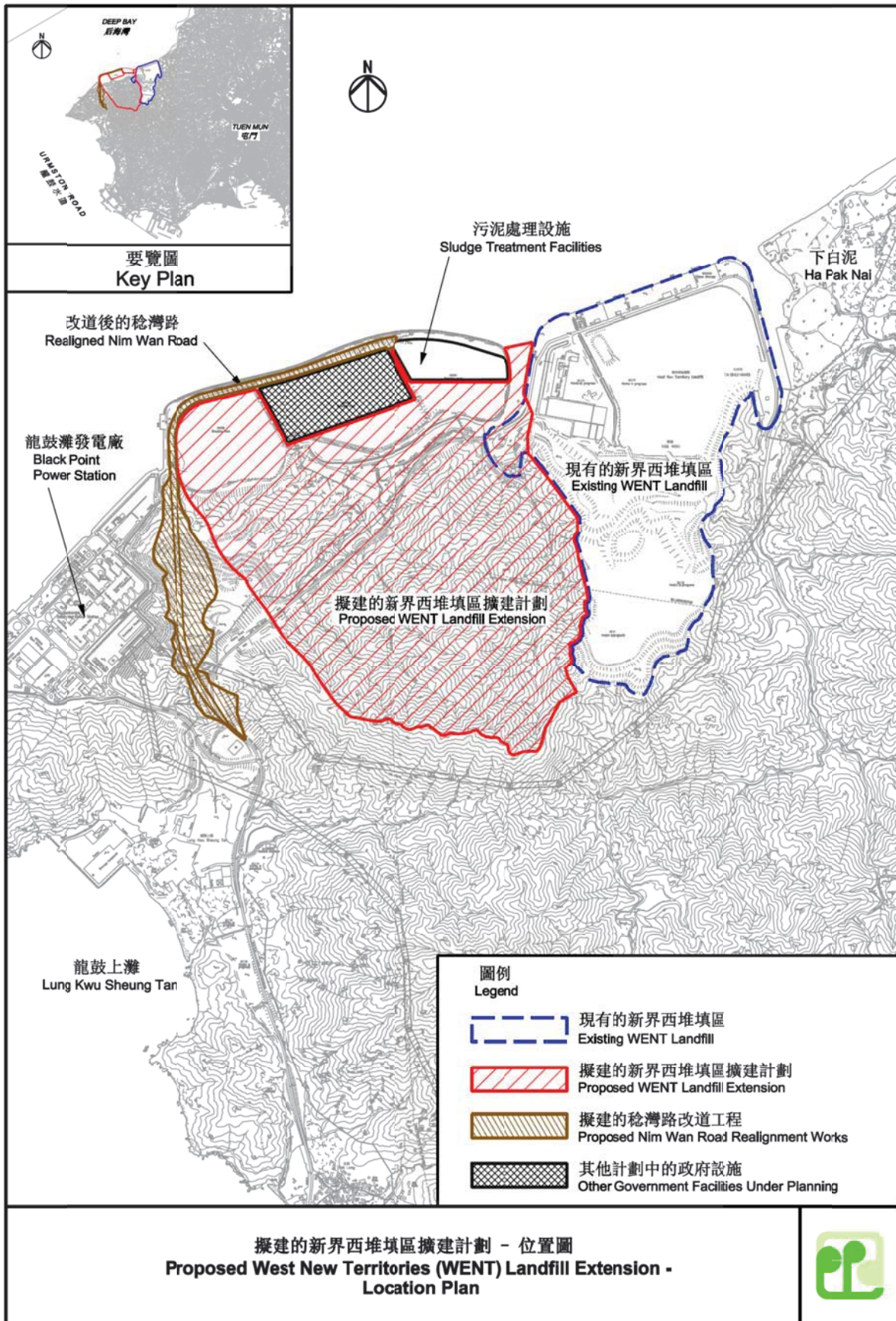
25. We upgraded **165DR** to Category B in October 2003. In March 2007, we engaged consultants to carry out an engineering feasibility and EIA study at an estimated cost of \$14.9 million in MOD prices. We charged this amount to block allocation **Subhead 5101DX** “Environmental works, studies and investigations for items in Category D of the Public Works Programme”. The engineering feasibility and EIA study was completed in February 2010.

26. The proposed study will not directly involve any tree removal or planting works. During the feasibility study stage, we have identified that tree removal and transplanting are required for the whole project. We will review the number of trees to be affected for the whole project in the proposed study. Details of the tree removal and planting proposals will be provided when we upgrade the remainder of **165DR** in the next stage.

27. We estimate that the proposed study and the necessary preparation work will create about 12 jobs (two for labourers and another ten for professional/technical staff) providing a total employment of 290 man-months.

Environment Bureau
June 2013

165DR – West New Territories Landfill Extension
165DR – 新界西堆填區擴建計劃



165DR – West New Territories Landfill Extension

Breakdown of the estimates for consultants' fees (in September 2012 prices)

Consultants' staff costs (Note 2)		Estimated man-months	Average MPS* salary point	Multiplier (Note 1)	Estimated fee (\$ million)
(i) Outline design	Professional	27	38	2.0	3.5
	Technical	13	14	2.0	0.6
(ii) Study on interfacing and handing-over issues	Professional	17	38	2.0	2.2
	Technical	7	14	2.0	0.3
(iii) Arrangement and supervision of site investigation and baseline surveys	Professional	12	38	2.0	1.6
	Technical	9	14	2.0	0.4
(iv) Tender preparation, tender assessment and contract procurement	Professional	12	38	2.0	1.6
	Technical	9	14	2.0	0.4
(v) Contract administration and management of resident site staff	Professional	27	38	2.0	3.5
	Technical	58	14	2.0	2.6
				Total	16.7

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS point to arrive at the full staff costs, including the consultants' overheads and profits as the staff will be employed in the consultants' offices. (As at now, MPS salary point 38 = \$65,695 per month and MPS salary point 14 = \$22,405 per month.)
2. The actual man-months and actual costs will only be known after the selection of consultant through the usual competitive lump sum fee bid system.

Revisions to 'Preamble', paragraphs 2, 4 and 5, 11 to 13 in PWSC(2013-14)21

Preamble

Members are invited to recommend to the Finance Committee –

- (a) the upgrading of part of **165DR**, entitled “West New Territories landfill extension – consultants’ fees and investigations”, to Category A at an estimated cost of \$36.8 million in money-of-the-day prices; and
- (b) the retention of the remainder of **165DR** in Category B.

Paragraph 2

2. The Director of Environmental Protection, with the support of the Secretary for the Environment, proposes to upgrade part of **165DR** to Category A at an estimated cost of \$36.8 million in money-of-the-day (MOD) prices for engaging consultants to commission a study and undertaking tasks to make preparations necessary for the WENT Landfill Extension project.

Paragraphs 4 and 5

4. We will retain the remainder of **165DR** in Category B, which involves all works necessary for the development of WENT Landfill Extension. Funding for the remainder of **165DR** at an estimated cost of over \$10,000 million (in September 2013 prices) will be sought upon completion of the necessary preparation work prior to the invitation of tenders for the WENT Landfill Extension contract. The target waste intake commencement date for the WENT Landfill Extension project will tie in with when the existing WENT Landfill is exhausted, which is anticipated to be in 2018-19.

5. Subject to the funding approval of the Finance Committee, we plan to engage consultants in December 2014 to commission the proposed study and carry out the necessary preparation work for the WENT Landfill Extension project. The proposed study is tentatively scheduled for completion upon two years after the commissioning of the proposed WENT Landfill Extension.

Paragraphs 11 to 13

11. We estimate the cost of the proposed study to be \$36.8 million in MOD prices (please see paragraph 12 below), broken down as follows –

	\$ million	
(a) Consultants' fee for	17.7	
(i) outline design	4.4	
(ii) study on interfacing and handing-over issues	2.6	
(iii) arrangement and supervision of site investigation and baseline surveys	2.1	
(iv) tender preparation, tender assessment and contract procurement	2.1	
(v) contract administration and management of resident site staff	6.5	
(b) Site investigation	4.2	
(c) Baseline surveys	3.2	
(d) Publicity programme/material	1.4	
(e) Contingencies	2.7	
Sub-total	29.2	(in September 2013 prices)
(f) Provision for price adjustment	7.6	
Total	36.8	(in MOD prices)

_____ A breakdown of the estimates for consultants' fees by man-months is at Enclosure 2.

12. Subject to approval, we will phase the expenditure as follows –

Year	\$ million (Sept 2013)	Price adjustment factor	\$ million (MOD)
2014 – 2015	1.2	1.05450	1.3
2015 – 2016	4.2	1.11777	4.7
2016 – 2017	5.8	1.18484	6.9
2017 – 2018	9.4	1.25593	11.8
2018 – 2019	3.4	1.33128	4.5
2019 – 2020	2.0	1.40117	2.8
2020 – 2021	1.7	1.47123	2.5
2021 – 2022	1.5	1.54479	2.3
	<u>29.2</u>		<u>36.8</u>

13. We have derived the MOD estimate on the basis of the Government's latest set of assumptions on the trend rate of change in the prices of public sector building and construction output for the period from 2014 to 2022. We will tender the proposed consultancy on a lump sum basis. The contract will provide for price adjustments. We will deliver tasks related to site investigation, baseline surveys and publicity activities on a re-measurement basis as there is uncertainty over the actual extent of work to be involved. Price adjustment will also be provided.

165DR – West New Territories Landfill Extension

Breakdown of the estimates for consultants' fees (in September 2013 prices)

Consultants' staff costs ^(Note 2)		Estimated man-months	Average MPS* salary point	Multiplier ^(Note 1)	Estimated fee (\$ million)
(i) Outline design	Professional	29	38	2.0	3.9
	Technical	10	14	2.0	0.5
(ii) Study on interfacing and handing-over issues	Professional	17	38	2.0	2.3
	Technical	7	14	2.0	0.3
(iii) Arrangement and supervision of site investigation and baseline surveys	Professional	12	38	2.0	1.6
	Technical	10	14	2.0	0.5
(iv) Tender preparation, tender assessment and contract procurement	Professional	12	38	2.0	1.6
	Technical	10	14	2.0	0.5
(v) Contract administration and management of resident site staff	Professional	28	38	2.0	3.8
	Technical	58	14	2.0	2.7
				Total	<u>17.7</u>

* MPS = Master Pay Scale

Notes

1. A multiplier of 2.0 is applied to the average MPS point to arrive at the full staff costs, including the consultants' overheads and profits as the staff will be employed in the consultants' offices. (As at now, MPS salary point 38 = \$67,370 per month and MPS salary point 14 = \$23,285 per month.)
2. The actual man-months and actual costs will only be known after the selection of consultant through the usual competitive lump sum fee bid system.
