

ITEM FOR PUBLIC WORKS SUBCOMMITTEE OF FINANCE COMMITTEE

HEAD 704 – DRAINAGE

Civil Engineering – Drainage and erosion protection

103CD – Drainage improvement in Northern Hong Kong Island – Hong Kong West drainage tunnel

Members are invited to recommend to Finance Committee to increase the approved project estimate of **103CD** by \$336.6 million from \$3,044.7 million to \$3,381.3 million in money-of-the-day prices.

PROBLEM

The approved project estimate (APE) of **103CD** is not sufficient to cover the cost of the works under the project.

PROPOSAL

2. The Director of Drainage Services, with the support of the Secretary for Development, proposes to increase the APE of **103CD** by \$336.6 million from \$3,044.7 million to \$3,381.3 million in money-of-the-day (MOD) prices.

PROJECT SCOPE AND NATURE

3. In June 2007, the Finance Committee (FC) approved the upgrading of **103CD** to Category A at an estimated cost of \$3,044.7 million in MOD prices. The approved scope of works under **103CD** comprises –

/(a)

- (a) construction of a drainage tunnel of about 11 kilometres (km) in length and of diameter varying from 6.25 metres (m) to 7.25 m from Tai Hang to Pokfulam;
- (b) construction of eastern and western portals; and
- (c) construction of 34 intakes, about 8 km of associated connection adits and ancillary works.

— A site plan showing the location of the works is at Enclosure 1.

4. We started the construction works in November 2007 for completion in March 2012. As at end November 2011, 86% of works were completed. We expect that the works will be substantially completed in March 2012 as scheduled.

JUSTIFICATION

5. Following a review of the financial position of the project, we consider it necessary to increase the APE of **103CD** by \$336.6 million in MOD prices to cover the additional costs arising from the increase in provision for price adjustment.

6. According to existing Government practice, monthly payments to contractors for most construction contracts are adjusted to cover market fluctuation in labour and material costs, which are known as Contract Price Fluctuation (CPF) payment. The payment for the works of **103CD** is subject to CPF, and the provision for price adjustment was allowed when FC's approval for the APE of **103CD** was sought in June 2007. At that time, on the basis of the forecast of trend rate of change in the prices of public sector building and construction output in March 2007, as well as the anticipated project cash flow, a provision of \$94.7 million was allowed for price adjustment in the original APE.

7. Construction material prices have been increasing since 2004. While the rise in the first two years or so has been modest, it has become sharper since mid-2007 before moderating from mid-2009 onwards. A chart showing the relevant trend of material costs is at Enclosure 2. For example, the July 2011 cost indices for steel reinforcement, galvanized mild steel and sand have risen by 33.4%, 24.8% and 49.9% respectively from the June 2007 prices when the funding for the project was approved. In the light of the sharp increase in subsequent forecast on the trend rate of change in the prices of public sector building and construction output (the latest forecast is that there will be an increase of 5% per annum in 2011 and 5.5% per annum from 2012 to 2015) and the actual price deflators between 2007 and 2010 (the actual price deflators for 2007, 2008, 2009 and 2010 were 2.9%, 8.7%, 3.1% and 2.9% respectively)¹, the CPF payments have been higher than expected. We anticipate that the provision for price adjustment will have to be increased by \$336.6 million from \$94.7 million to \$431.3 million. Details are at Enclosure 3.

8. We have already drawn down a sum of \$252.2 million from the original contingency provision of \$263.0 million in the APE to meet the additional costs arising from the higher-than-expected tender prices (\$234.0 million) and the increased site supervision cost (\$18.2 million) (please refer to Enclosure 4 for details). We need to retain \$10.8 million contingencies to cater for further variations to the works and possible claims during construction and valuation of works during finalisation of the project account. As such, the remaining balance in the project vote is not sufficient to cover the additional CPF payment of \$336.6 million.

9. Since we have already included the cost of the foreseeable variations of works in the latest project estimate, we consider that the revised APE is sufficient to cover the costs of the project.

10. A comparison of the cost breakdown of the APE and the latest project estimate is given at Enclosure 4.

FINANCIAL IMPLICATIONS

11. Subject to FC's approval, we will phase the expenditure as follows –

/Year

¹ The price adjustment factors adopted for the original funding application approved by FC in June 2007 are 0.0% in 2007, 1.0% per annum between 2008 and 2011, and 2.0% per annum from 2012 onwards.

Year	\$ million (in MOD prices)
Up to 31 March 2011	2,079.2
2011 – 2012	500.0
2012 – 2013	200.0
2013 – 2014	301.5
2014 – 2015	300.6
Total	3,381.3

12. The proposed increase in the APE will not give rise to any additional recurrent expenditure.

PUBLIC CONSULTATION

13. As the proposed increase in the APE does not involve any change in project scope, we consider further public consultation not required.

14. We consulted the Legislative Council Panel on Development on the proposed increase in the APE on 22 November 2011. Members raised no objection to the proposal.

ENVIRONMENTAL IMPLICATIONS

15. The proposed increase in the APE does not have any environmental implication.

HERITAGE IMPLICATIONS

16. The proposed increase in the APE does not affect any heritage site, i.e. all declared monuments, proposed monuments, graded historic sites/buildings, sites of archaeological interests and Government historic sites identified by the Antiquities and Monuments Office.

LAND ACQUISITION

17. The proposed increase in the APE does not require any land acquisition.

/BACKGROUND

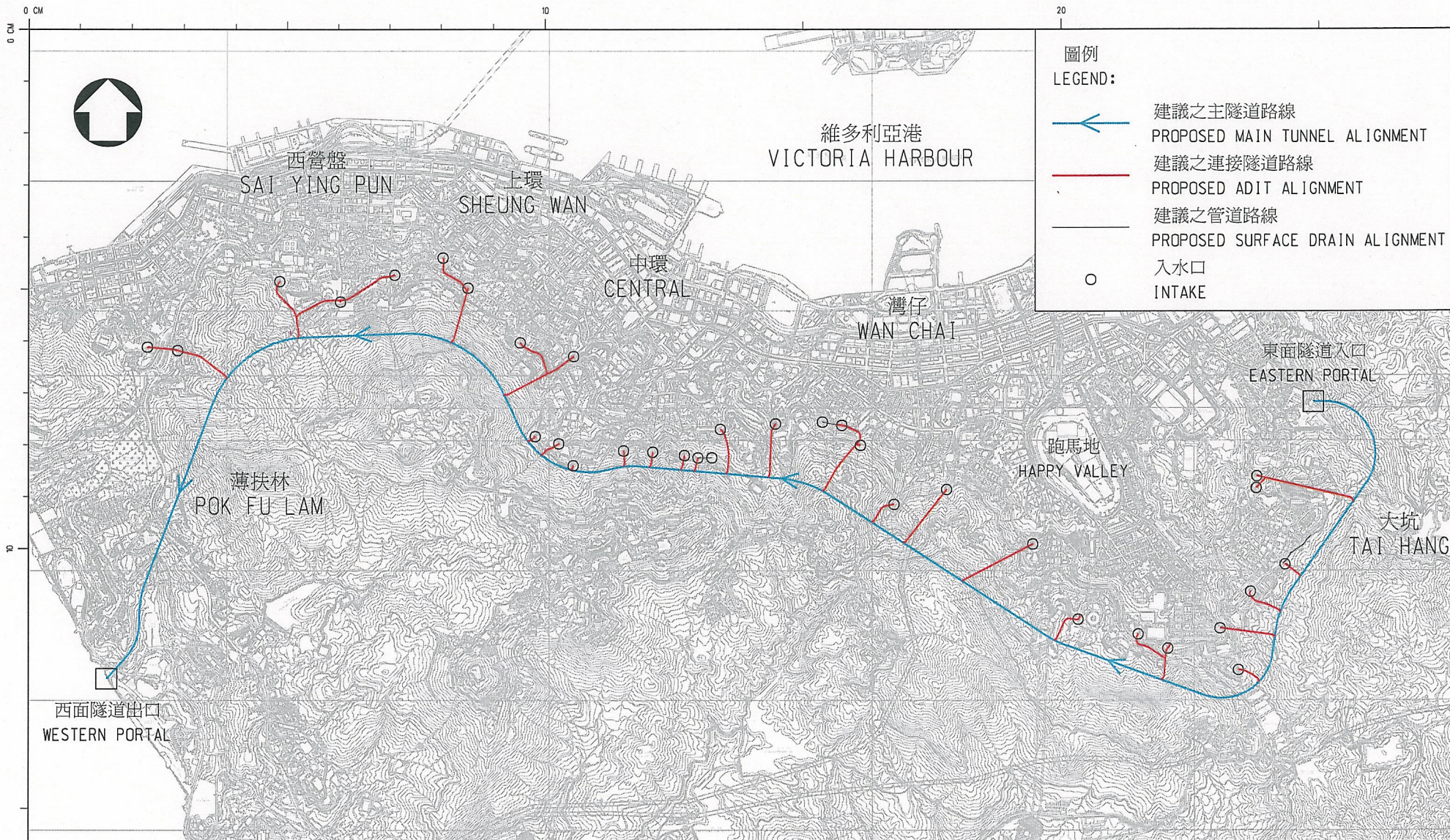
BACKGROUND INFORMATION

18. In June 2007, we upgraded **103CD** to Category A at an estimated cost of \$3,044.7 million for the construction of Hong Kong West drainage tunnel. The drainage tunnel will enhance the capacity of the existing drainage system, and alleviate the flooding risks of northern Hong Kong Island during heavy rainstorms. The construction works commenced in November 2007 and is expected to be substantially completed by March 2012.



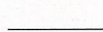

19. The proposed increase in the APE will not involve any tree removal and planting proposal.

20. The proposed increase in the APE will not create any new job.

Development Bureau
December 2011



圖例
LEGEND:

-  建議之主隧道路線
PROPOSED MAIN TUNNEL ALIGNMENT
-  建議之連接隧道路線
PROPOSED ADIT ALIGNMENT
-  建議之管道路線
PROPOSED SURFACE DRAIN ALIGNMENT
-  入水口
INTAKE

圖則名稱 drawing title
 工務計劃項目第103CD號
 港島北部雨水排放系統改善工程-港島西雨水排放隧道
 PWP ITEM NO. 103CD
 DRAINAGE IMPROVEMENT IN NORTHERN HONG KONG ISLAND
 - HONG KONG WEST DRAINAGE TUNNEL

繪畫 drawn	SIGNED C.K.LAM	日期 date	01FEB07
核對 checked	SIGNED K.S.TONG	日期 date	01FEB07
批核 approved	SIGNED M.H.LEUNG	日期 date	01FEB07
部門 office	工程管理部 PROJECT MANAGEMENT DIVISION		

圖則編號 drawing no. DPM/103CD0/0002 比例 scale N.T.S.

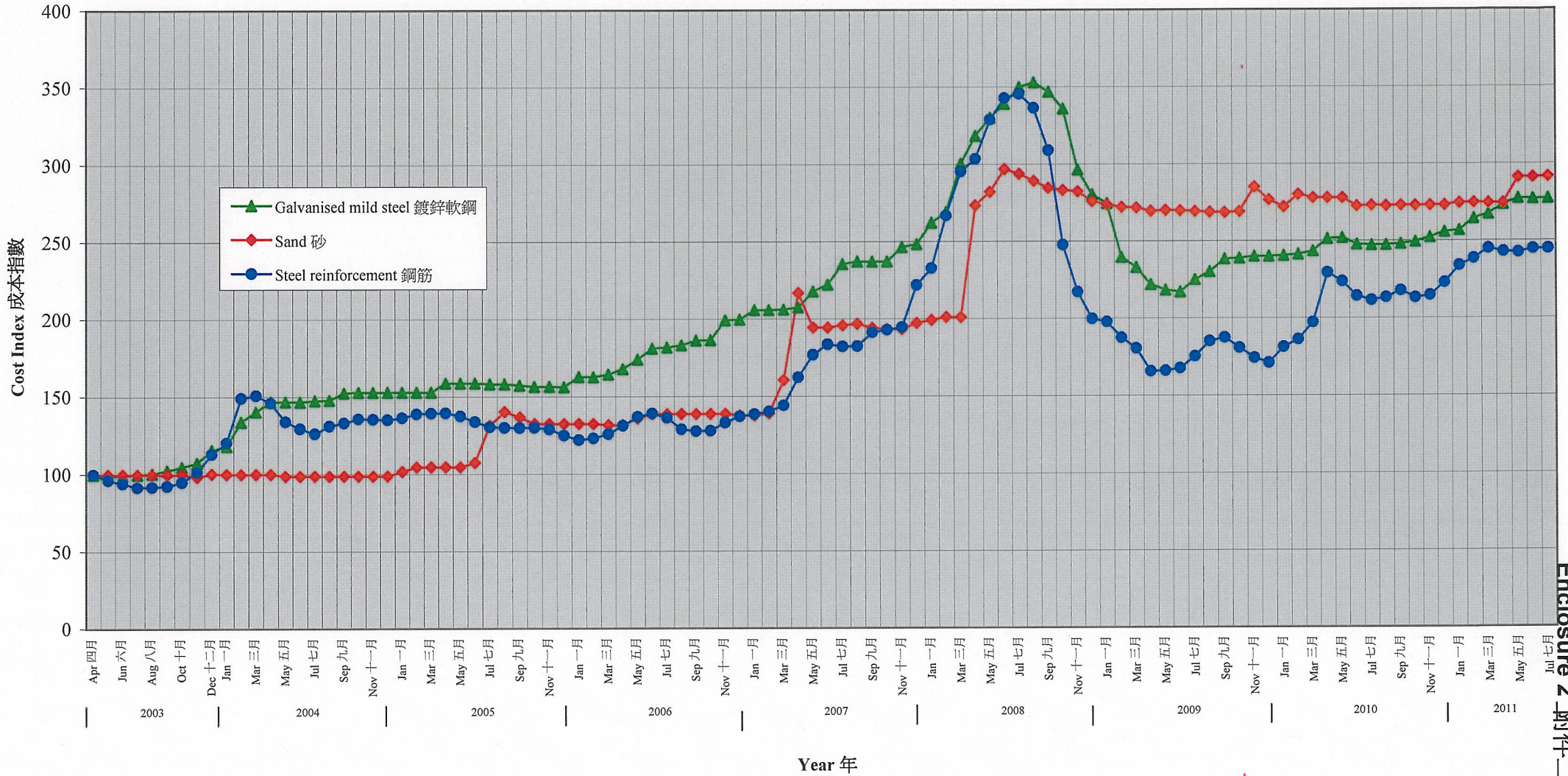
保留版權 COPYRIGHT RESERVED

 香港特別行政區政府渠務署
 DRAINAGE SERVICES DEPARTMENT
 GOVERNMENT OF THE HONG KONG
 SPECIAL ADMINISTRATIVE REGION

ENCLOSURE 1 附件一

Index Numbers of Cost of Materials used in Public Sector Construction Projects (Apr 2003 = 100)
(Apr 2003 - Jul 2011)

公營建築工程的材料成本指數 (2003年4月= 100)
(2003年4月至2011年7月)



**103CD – Drainage improvement in Northern Hong Kong Island –
Hong Kong West drainage tunnel**

Table 1 – Cash flow and provisions for price adjustment in PWSC(2007-08)17

Year	Original project estimate (\$ million, in September 2006 prices) A	Original price adjustment factors (March 2007)# B	Approved project estimate (\$ million, in MOD prices) C	Provision for price adjustment (\$ million) D = C – A
2007 – 2008	39.0	0.99900	39.0	0.0
2008 – 2009	280.0	1.00649	281.8	1.8
2009 – 2010	830.0	1.01656	843.7	13.7
2010 – 2011	820.0	1.02672	841.9	21.9
2011 – 2012	401.0	1.03699	415.8	14.8
2012 – 2013	240.0	1.05514	253.2	13.2
2013 – 2014	180.0	1.07624	193.7	13.7
2014 – 2015	160.0	1.09777	175.6	15.6
Total	2,950.0		3,044.7	94.7

Table 2 – Latest cash flow and provision for price adjustment due to latest project estimate (PE) and latest adjustment factors

Year	Latest PE (\$ million, in September 2006 prices) a	Latest PE (\$ million, in September 2011 prices) ^^ b	Latest price adjustment factors (October 2011) ## c	Latest PE (\$ million, in MOD prices) d	Latest provision for price adjustment (\$ million) e	Net increase in provision for price adjustment (\$ million) f
Up to March 2011	1,962.2	2,079.2^	1.00000	2,079.2	e = d – a	f = e – D
2011 – 2012	405.7	500.0	1.00000	500.0		
2012 – 2013	154.0	189.8	1.05375	200.0		
2013 – 2014	220.1	271.2	1.11171	301.5		
2014 – 2015	208.0	256.3	1.17285	300.6		
Total	2,950.0	3,296.5		3,381.3	431.3	336.6

Notes:

Price adjustment factors adopted in March 2007 were based on the projected movement of prices for public sector building and construction output at that time, which were assumed to have no change in 2007 and to be increased by 1.0% per annum over the period from 2008 to 2011 and by 2.0% per annum from 2012 onwards.

Price adjustment factors promulgated in October 2011 were based on the latest movement of prices for public sector building and construction output, which are assumed to increase by 5.0% per annum in 2011 and by 5.5% per annum from 2012 onwards.

^ \$2,079.2 million is the actual expenditure up to 31 March 2011.

^^ The latest project estimate (in September 2006 prices) is multiplied by 1.23228 for conversion to September 2011 prices. The figure of 1.23228 represents the changes in price movement for public sector building and construction output between September 2006 and September 2011.

**103CD – Drainage improvement in Northern Hong Kong Island –
Hong Kong West drainage tunnel**

**Comparison between Approved Project Estimate and
the Latest Project Estimate**

A comparison of the approved project estimate and the latest project estimate is as follows –

	(A) Approved Project Estimate	(B) Revised Project Estimate ¹	(C) Latest Project Estimate	(C) – (A) Difference
	(\$ million)	(\$ million)	(\$ million)	(\$ million)
(a) Construction of drainage tunnel, eastern and western portals, intakes, adits and ancillary works	2,429.2	2,663.2	2,663.2	234.0
(b) Consultant's fees for contract administration and site supervision	227.8	227.8	246.0	18.2
(c) Environmental mitigation measures	30.0	30.0	30.0	0.0
(d) Contingencies	263.0	29.0	10.8	(252.2)
(e) Provision for price adjustment	94.7	94.7	431.3	336.6
Total	<u>3,044.7</u>	<u>3,044.7</u>	<u>3,381.3</u>	<u>336.6</u>

2. As regards (a) **(Construction of drainage tunnel, eastern and western portals, intakes, adits and ancillary works)**, the total increase of \$234.0 million is due to higher-than-expected tender price.

3. As regards (b) **(Consultant's fees for contract administration and site supervision)**, the total increase of \$18.2 million is due to adjustment on salary pay scale and housing benefit of resident site staff employed by the consultants for site supervision.

¹ Revised project estimate after contract award

4. As regards **(d) (Contingencies)**, we need to retain the remaining sum of \$10.8 million as contingencies to cater for further variations and possible claims during construction and valuation of works during finalisation of project account.

5. As regards **(e) (Provision for price adjustment)**, the increase of \$336.6 million is due to unexpected increase in projected payments for contract price fluctuation.