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Panel on Transport

Subcommittee on Matters Relating to Railways
Meeting on 9 February 2010

Background brief on West Island Line

Purpose

This paper provides background information on the West Island Line (WIL) project. It also summarizes the major concerns expressed by Legislative Council (LegCo) Members on the project at meetings of the Subcommittee on Matters Relating to Railways (the Subcommittee), the Public Works Subcommittee (PWSC) and the Finance Committee (FC).

Background

2. The WIL is an extension of the existing MTR Island Line, from Sheung Wan Station to Kennedy Town with two intermediate stations at Sai Ying Pun and near the University of Hong Kong (HKU). The alignment plan is at **Appendix I**. The WIL is designed to provide fast and reliable railway service to the Western District. It will also provide convenient pedestrian passages between the Mid-levels and the waterfront at Des Voeux Road West through the unpaid zones within the station premises. With the new railway line, passengers will be able to reach Sheung Wan from Kennedy Town in eight minutes, as compared with 15 to 25 minutes by using road transport during peak hours.

3. The project also includes community facilities such as high speed lifts from Pok Fu Lam Road and Bonham Road down to the western district, as well as the reprovisioned David Trench Rehabilitation Centre and Kennedy Town Swimming Pool.

4. On 28 June 2005, the Executive Council (ExCo) decided that the MTR Corporation Limited (MTRCL) should be invited to proceed with preliminary planning and design of the WIL. The MTRCL subsequently submitted a Revised Project Proposal of the WIL in August 2006. On 23 October 2007, the ExCo decided that -

(a) the MTRCL should be asked to proceed with further planning and detailed design of the WIL project;

(b) the ex-Upper Level Police Station site at High Street should be used for the reprovisioning of the facilities of the existing David Trench Rehabilitation Centre currently located at Bonham Road;

(c) the funding gap of the WIL project should be bridged by a capital grant with funding from Head 708 – Capital Subvention and Major Systems and Equipment under the Capital Works Reserved Fund; and

(d) a two-stage approach should be adopted for seeking funding from the LegCo to cover the design phase expenditure and subsequently the funding gap arising from the construction, operation and maintenance of the WIL.

5. On 14 December 2007, the FC approved the application to provide funding support at an estimated cost of $400 million in money-of-the-day (MOD) prices to the MTRCL to cover the design phase expenditure up to scheme authorization.

6. The WIL scheme was gazetted on 26 October 2007, with amendments and corrections to the scheme gazetted on 12 September 2008 and 9 January 2009 respectively. On 10 March 2009, the ExCo authorized the scheme with amendments.

7. At its meeting on 26 May 2009, the ExCo approved funding arrangements for the construction of the WIL, with a government capital grant of $12.7 billion (Net Present Value (NPV) at June 2009) to bridge the funding gap of the project, subject to a claw-back mechanism. In this connection, a LegCo Brief outlining the agreed funding arrangements with the MTRCL for the WIL project (File Reference: THB(T)CR 11/1016/99) was issued on 26 May 2009.

8. After securing funding approval from the FC on 3 July 2009, the construction work for the WIL project commenced in July 2009. It is planned for completion in 2014.

Financing arrangement for the WIL project

9. For the WIL, the Government has proposed to provide a capital grant as financial support. According to the Administration, the Government had in the past mainly relied on granting property development rights as the means for providing financial support to bridge the funding gap for most of the railway projects under the ownership approach. However, due to the lack of suitable sites along or adjacent to the WIL alignment for property development, alternative methods to provide the funding would have to be considered. The capital grant is intended as an upfront payment to lower the capital costs of the project, in order to provide the incentive for the MTRCL to embark on the project which it would otherwise not undertake at all given the financial non-viability.

10. The funding support to the MTRCL is provided in two stages. The first stage covers the design phase expenditure up to authorization of the WIL (paragraph 5 above). The second stage covers the remainder of the funding gap for the WIL project.

Project cost

11. In November 2007, the Administration briefed the Subcommittee that the then estimated capital cost for the WIL project was $8.9 billion (January 2006 prices). As the WIL would not be financially viable based on fare and non-fare revenue alone, the funding support to the MTRCL required for implementation of the project was estimated to be $6 billion (NPV at January 2007).

12. In February 2009, the MTRCL submitted the latest financial proposal for the WIL. The capital cost was increased to about $15.4 billion (December 2008 prices). The revised estimate, as compared with that in November 2007, is listed below -

		Estimate in October 2007	Latest Estimate in February 2009
(a)	Capital Cost	$8.9B (January 2006 prices)	$15.4B (December 2008 prices)
(b)	Funding Gap	$6.0B (NPV at January 2007)	$12.7B (NPV at June 2009)

13. The increase in the capital cost of $6.5 billion ($15.4 billion - $8.9 billion) was attributed to -

(a) $2.2 billion due to increase in the scope of works for the railway; and

(b) $4.3 billion due to price escalation within the construction sector over the three-year period covered by the estimating dates.

Details of the increase in the capital cost of $6.5 billion are set out in **Appendix II.**

Funding gap

14. The funding gap is the difference between the estimated capital cost and the revenue over a 50-year period of the WIL project. The estimated capital cost was significantly increased from $8.9 billion (January 2006 prices) to $15.4 billion (December 2008 prices) as detailed in Appendix II. According to the Administration, the estimated revenue in the operation stage has dropped as compared with previous projections because the train fare has remained the same for the past few years. The increase of the funding gap from $6 billion to $12.7 billion is basically due to the increase of capital cost from $8.9 billion to $15.4 billion.

Claw-back mechanism

15. To safeguard the Government's interest, the Administration has proposed to introduce a claw-back mechanism such that any over estimation of capital expenditure, escalation costs and land costs will be reimbursed to the Government with interest. On the other hand, if the capital grant is not sufficient for meeting the project cost, the MTRCL will have to bear the additional cost. In other words, the funding gap represents the maximum commitment of the Government's financial support to the MTRCL for the WIL project.

Total funding support to the MTRCL

16. The total funding support to the MTRCL is $12.7 billion (NPV at June 2009). The first stage funding support of $400 million (equivalent to about $448 million in NPV at June 2009) was already paid to the MTRCL in February 2008 for the design phase of the WIL project (paragraph 5 above). The remaining funding support to the MTRCL is therefore about $12.3 billion (NPV at June 2009).

Discussions held by LegCo Members on the WIL project

17. After the ExCo had approved funding arrangements for the construction of the WIL on 26 May 2009, the Subcommittee was consulted on 1 and 4 June 2009 on the relevant funding proposal which sought to provide funding support to the MTRCL for the WIL and to carry out the associated

essential public infrastructure works. After consulting the Subcommittee, the Administration submitted the funding proposal to the PWSC on 10 June 2009. The funding proposal was recommended by the PWSC and approved by the FC on 3 July 2009.

Funding proposal

18. During discussion on the funding proposal for the WIL, the Subcommittee members in general expressed grave concern whether the MTRCL had under-estimated the revenue of the WIL and over-estimated the funding support required. The Administration explained that the revenue was estimated based on input assumptions including projected population and employment figures, fare structure and so on. With the Rail Merger taken place in 2007, a series of fare reduction took effect in December 2007. When the original project cost estimate for the WIL was prepared in October 2007, these fare reductions were not taken into account. The Administration pointed out that the increase in population and employment projection for 2016 according to the latest forecast would slow down, which also had an impact on the revenue from the WIL.

19. Some Subcommittee members including Hon Andrew CHENG, Hon WONG Kwok-hing and Hon LI Fung-ying expressed concern as to whether the projected population/employment data were on the conservative side without taking into account the development in the district brought about by the WIL. Hon LI Fung-ying pointed out that the Rail Merger had achieved an overall staffing synergy for the MTRCL, which should also be taken into account in calculating the cost estimate.

20. The Administration advised that the non-fare revenue of the WIL had been checked by an independent engineering consultant whereas the fare revenue had been checked using the well-established Railway Development Study computer model. Moreover, a claw-back mechanism was proposed whereby the funding gap would be re-assessed within two years after the WIL had commenced operation. Any over-estimation of the contracts leading to over-assessed funding support, if any, would be returned to the Government with interest. In case of overshooting in expenditure, the excess would be borne by the MTRCL. Hence, the MTRCL would have to bear the risk of further cost overrun. In other words, the funding gap represented the maximum commitment of the Government's financial support to the MTRCL for the WIL project.

21. Some PWSC/FC members also expressed concern about the proposed financial arrangement under which the funding commitment of the Government for the WIL had increased from $6 billion to $12.3 billion whereas the MTRCL's financial commitment had reduced from $2.9 billion to $2.7 billion. They urged the Administration to consider setting up a fare stabilization fund,

with the MTRCL putting aside a portion of its profits for the fund.

22. The Administration explained that the adjustment of fares by the MTRCL was subject to the established fare adjustment mechanism. The Administration reiterated that the increase in cost estimate was attributed to a 48% price escalation for the construction sector since 2006 and some substantial changes made to the project scope as a result of detailed planning, site investigations and public consultation in the past few years. The cost estimate had been reviewed by an independent engineering consultant and was concluded in order. Nevertheless, to safeguard public interests and take into account the possible fall in tender prices after the financial tsunami in late 2008, the Administration had proposed introducing a claw-back mechanism. A re-assessment of the funding gap would be made, within two years after commencement of operation of the WIL, on the basis of the actual contract award prices, actual fluctuation payments, actual land cost payments and the adjusted contingency sum. The excess of the original funding support over this re-assessed amount would be returned to the Government with interest. However, if there was a shortfall, the Government would not need to provide additional funding to meet the shortfall.

Locations for ventilation shafts at Hill Road and Bonham Road

23. The Subcommittee urged the Administration to actively address the concerns expressed by the local community, particularly the air and visual impacts of proposed ventilation shafts at Hill Road and Bonham Road, and the effect of blasting that would be used during construction (paragraphs 27-28). The MTRCL explained that the air coming from railway ventilation shafts did not contain any undesirable emissions. It would also explore all possible ways to minimize the size of the Hill Road ventilation shaft to address residents' concern. The Subcommittee passed the following motion at the meeting on 4 June 2009 -

> "That this Subcommittee strongly requests the immediate implementation of the Mass Transit Railway West Island Line project and the re-examination of its financial arrangement with the MTRCL by the HKSAR Government as its long-term work objectives, and urges the MTRCL to re-examine the way it handles the issues in connection with the ventilation shafts and blasting works, so as to address the worries of the residents."

24. When the PWSC and FC considered the funding proposals at their meetings on 10 June 2009 and 3 July 2009 respectively, some PWSC/FC members requested the Administration to consider the counter proposal put forward by residents concerned to relocate the proposed ventilation shaft at Hill Road to within the campus of the HKU, as many residents considered that the

HKU would be the major beneficiary of the future station near to the HKU. Some PWSC/FC members asked if the size of the ventilation shat at Hill Road could be reduced or, if possible, removed from the project plan.

25. In response to members' concerns, the MTRCL pointed out that the Environmental Impact Assessment Report of the WIL, which was approved in December 2008, made clear that the air quality impact from the operation of ventilation shafts would not be considered as a key environmental issue. At the FC meeting on 3 July 2009, at the request of FC members, the Administration agreed to explore the feasibility of relocating the Hill Road ventilation shaft to the proposed ventilation and plant building near to Yam Pak Building of the HKU. The Administration undertook to further consult the LegCo when there was a decision on the design of the ventilation shaft. With regard to the location of the proposed ventilation shaft at Bonham Road, the Administration explained that it had explored alternative proposals but none could accommodate the requirements without causing other detrimental effects, such as permanent loss of open space, additional costs and greater disruption during construction.

26. A table summarizing the alternative locations studied for the ventilation shafts at Hill Road and Bonham Road and the assessment results provided by the Administration is at **Appendix III**.

Impacts of the drill-and-blast method

27. The WIL project entails the construction of tunnels underneath The Belcher's and the construction method to be used would be drill-and-blast. Some residents of The Belcher's submitted views to the Subcommittee and FC expressing grave concern on the use of the drill-and-blast method for the construction. They requested that the tunnels should be realigned and not to run underneath The Belcher's. The MTRCL explained that the tunnels passing underneath The Belcher's were the only viable alignment that would not clash with the foundations of other buildings. As most sections of the tunnels and pedestrian tunnels of the WIL (including the pedestrian tunnel underneath the buildings of The Belcher's) were located deep in rock, drill-and-blast was the most suitable and effective construction method. The tunnels could provide direct access to the main excavation site of the University Station during the construction period, allowing workers to bring in building materials and move out the excavated rocks without causing traffic congestion on the roads. The proposed entrance to the north of The Belcher's was the only location in the area which would not involve resuming private buildings and encroaching onto road space.

28. The Subcommittee members enquired about the measures to be taken by the MTRCL to alleviate the concerns of the affected residents, such as the mechanism for claiming compensation for damages caused by blasting

operations. The MTRCL responded that it would take out third party insurance to cover all damages to properties, and past railway works had similar arrangements in place. The MTRCL undertook that it would enforce stringent risk control and safety measures to ensure that the delivery, use and storage of explosives would be safely operated during the construction.

Latest developments

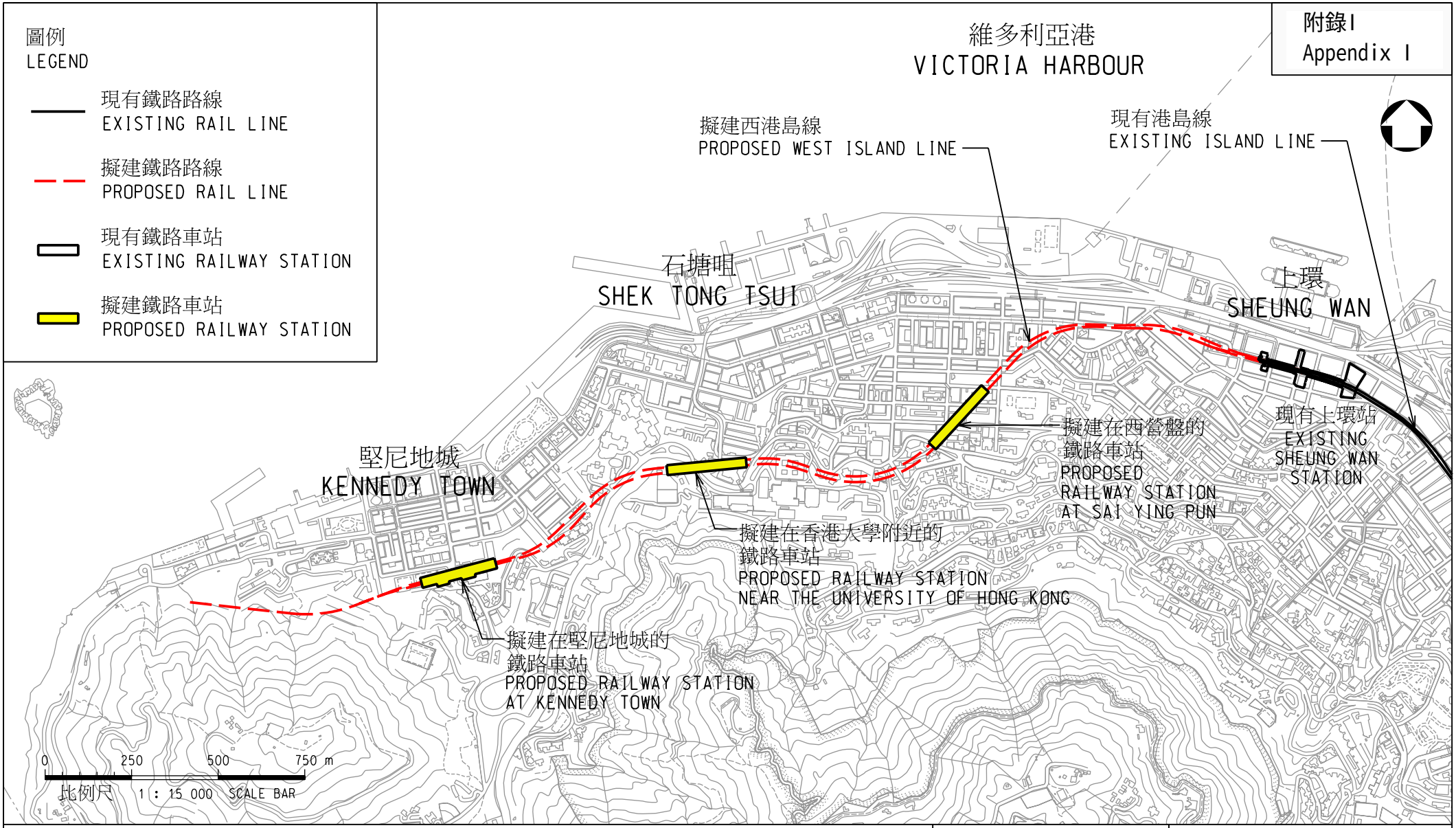
29. The Administration has proposed to report on the tender award for the tunnelling contract and progress of the design work for the ventilation shaft at Hill Road at the Subcommittee meeting scheduled for 9 February 2010.

Relevant papers

30. A list of relevant papers is at **Appendix IV**.

Council Business Division 1
Legislative Council Secretariat
4 February 2010

附錄I
Appendix I



圖則名稱 drawing title

基本工程計劃項目第1QR號 - 西港島線 - 財務資助

CWP ITEM NO. 1QR - WEST ISLAND LINE - FUNDING SUPPORT

設計 designed M. K. LI	Signed	18/5/09
繪圖 drawn H. K. TSANG	Signed	18/5/09
核對 checked M. K. LI	Signed	18/5/09
核准 approved MATTHEW P. K. HO	Signed	18/5/09

圖號 drawing no.
HRWWIL003-LP0005

鐵路拓展處 RAILWAY DEVELOPMENT OFFICE

路 政 署
HIGHWAYS DEPARTMENT

A4 210X297

HRWWIL003-LP0005.dgn 19-05-2009

Appendix II

Extract from paper of the Public Works Subcommittee (PWSC(2009-10)50)

HEAD 708 – CAPITAL SUBVENTIONS AND MAJOR SYSTEMS AND EQUIPMENT
Subventions – Miscellaneous
1QR – West Island Line – funding support

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18. The increase in the capital cost of $6,500 million ($15,400 million minus $8,900 million) from January 2006 to December 2008 is attributed to -

(a) Increase in the scope of works of about $2,200 million -

	$ million (Dec 2008 prices)
(i) Scope change for RRIW	200
(ii) Scope change for railway works	1,300
(iii) Changes in construction methods	200
(iv) Additional electrical and mechanical works	400
(v) Additional rolling stock	100
Total	2,200

not attached —— Details of the increase in scope of works are at Enclosure 3.

(b) MTRCL's estimate for general price escalation in the construction sector is $4,300 million for the three year period from January 2006 to December 2008 representing an increase of about 48%.

The Architectural Services Department (ArchSD) Building Works Tender Price Index (BWTPI) has been chosen as the reference for review of the price escalation on tender prices which is a direct measurement of cost increases on Government works already tendered. The BWTPI at 1Q of 2006 (the $8,900 million original cost estimate was based on January 2006 prices) and 3Q of 2008 (being the latest available figures) are 714 and 1 401 respectively, representing an increase of 96% in the cost of tender prices between these two periods. The data for 4Q of 2008 onward has yet to be published by ArchSD. We consider that the MTRCL's estimate of price escalation is reasonable, even after taking into account the possible fall in tender prices after the financial tsunami in late 2008. A graph showing the trend of the BWTPI is at Enclosure 4.

not attached ——

19. In the computation of the second stage funding support in paragraph 2 above, we have made some assumptions in the inflation factors, included as Enclosure 5.

not attached ——

20. The funding gap of the WIL project is calculated by discounting and summing the estimated cost and revenue cash-flows of MTRCL arising from the WIL project over a 50-year period. The discount rate adopted for the discounting equals to 1% above MTRCL's Weighted Average Cost of Capital (WACC)[1]. The Financial Services and the Treasury Bureau (FSTB) has engaged an independent financial adviser to assess MTRCL's WACC and the funding gap for the WIL project. The financial adviser concluded that a funding gap of $12,700 million in June 2009 NPV should be acceptable. The Government and MTRCL then agreed that the funding gap should be $12,700 million in June 2009 NPV which is equivalent to $12,700 million in MOD prices.

* * * * *

[1] The WACC is the rate that a company is expected to pay to finance its assets. It is the minimum return that a company must earn on existing asset base to satisfy its creditors, owners, and other providers of capital. It is calculated taking into account the relative weights of each component of the capital structure.

Appendix III

Locations for the ventilation shafts at Hill Road and Bonham Road

1. Ventilation shaft at Hill Road

Alternative Locations Studied	Assessment Results
Slope near Haking Wong Building of the University of Hong Kong (HKU) , Pokfulam Road	This proposed location is situated on a slope. For the construction of a ventilation shaft, an access road near the slope has to be occupied as works area. This will require a prolonged closure of a portion of the access road inside HKU campus. Adverse traffic impact to the community is anticipated and therefore, it is considered not acceptable. Besides, there would have a major technical difficulty as the ventilation shaft has to penetrate through the foundation of the retaining wall in front of the slope.
Des Voeux Road West near roundabout for trams at Whitty Street	Since this proposed location is situated over 350m away from the University Station, the ventilation effect will be limited. Moreover, substantial excavation along Hill Road, Queens Road West and Des Voeux Road West involving utilities and pipes diversion will be required for the construction of pedestrian tunnels between the station and the ventilation shaft. It will cause significant adverse traffic impact to the community during construction.

Temporary parking area at Shing Sai Road	Since this proposed location is situated over 400m away from the University Station, the ventilation effect will be limited. As the site is proposed for the re-provisioning for the existing Kennedy Town Swimming Pool, no space is available for any ventilation shaft in this site.
Inside Hill Road Garden	The sitting-out area will be significantly reduced. Residents nearby have raised concern to this proposal.
Open space at Pokfulam Road near Yam Pak Building	This location has been designed to house an electrical and mechanical building for the University Station and space are not available for another ventilation shaft.
Within the Centennial Campus of HKU	Since the campus is located above Pofulam Road, construction of a ventilation shaft within the campus will involve the excavation of an about 100m deep shaft. It requires a sizable supporting works area as well as substantial vehicular access for the delivery of construction plant and removal of spoil. This requirement cannot match the planning and works of the HKU Centennial Campus development.

2. Ventilation Shaft at Bonham Road

Alternative Locations	Assessment
King George V (KGV) Memorial Park Basketball Court	The MTRCL had proposed to place the ventilation shaft at the basketball court inside the KGV Memorial Park for providing ventilation for the section of the tunnels between the Sai Ying Pun (SYP) Station and the Sheung Wan Station. However, the views collected during early public consultations were that occupation of public open space should be minimized as there would be a lot of above-ground railway facilities such as entrances and ventilation shafts etc. which would occupy a lot of public open space in the district. The proposed ventilation shaft at the David Trench Rehabilitation Centre (DTRC) site is for providing ventilation for the section of the tunnels between the SYP Station and the University Station and it should be close to the western end of the SYP Station. Since the proposed alternative location is far away from the western end of the station, the ventilation effect will be limited. There is a proposal to place the ventilation shaft at the basketball court inside the KGV Memorial Park and reprovision the basketball court on top of the SYP entrance at Bonham Road. After detailed study, the MTRCL has confirmed that there is insufficient space to build a basketball court on top of the proposed SYP entrance.

KGV Memorial Park: Slope adjacent to High Street	To build the ventilation shaft at this proposed location would block the front façade of a Grade I historical building, Sai Ying Pun Community Complex, which is not desirbale from cultural heritage conservation viewpoint. In addition, it will also occupy the public open space and is close to a nursery inside the park. The proposed location is also far away from the western end of the SYP Station, the ventilation effect will be limited.
KGV Memorial Park: Slope near junction of Hospital Road and Eastern Street	Apart from the occupation of public open space and the limited ventilation effect due to the location being far away from the western end of the SYP Station, construction of ventilation shaft would affect the large trees and tree walls on the slope. Moreover, this location is in vicinity to the hospital facilities along Hospital Road and residential buildings on Eastern Street.

Appendix IV

West Island Line

List of relevant papers

Date of meeting	Committee	Minutes/Paper	LC Paper No.
31.3.2009	Subcommittee on Matters Relating to Railways	Legislative Council Brief – Mass Transit Railway West Island Line – Authorization of Scheme following receipt of objections	http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0331-thb090324-e.pdf
		Minutes of meeting	LC Paper No. CB(1)1544/08-09 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/minutes/rdp20090331.pdf
1.6.2009	Subcommittee on Matters Relating to Railways	Administration's paper on Funding Support and Essential Public Infrastructure Works of the MTR West Island Line	LC Paper No. CB(1)1758/08-09(01) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0601cb1-1758-1-e.pdf
		Legislative Council Brief - Mass Transit Railway West Island Line Funding Arrangement	File Reference: THB(T)CR11/1016/99 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0601-thbtcr11101699-e.pdf
		Joint reply from the Administration and the MTR Corporation Limited to issues raised at the meeting on 31 March 2009	LC Paper No. CB(1)1758/08-09(02) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0601cb1-1758-2-e.pdf
		Minutes of meeting	LC Paper No. CB(1)284/09-10 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/minutes/rdp20090601.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
4.6.2009	Subcommittee on Matters Relating to Railways	Administration's paper on West Island Line - Assessment of Funding Gap	LC Paper No. CB(1)1804/08-09(05) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0604cb1-1804-5-e.pdf
		Administration's paper on West Island Line - Checking of Project Estimate	LC Paper No. CB(1)1804/08-09(03) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0604cb1-1804-3-e.pdf
		Administration's paper on West Island Line - Comparison of 2007 and 2009 Estimate	LC Paper No. CB(1)1804/08-09(04) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0604cb1-1804-4-e.pdf
		Administration's paper on West Island Line - Use of Explosives	LC Paper No. CB(1)1804/08-09(02) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0604cb1-1804-2-e.pdf
		Administration's paper on West Island Line - Ventilation Shafts	LC Paper No. CB(1)1804/08-09(01) http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/papers/tp_rdp0604cb1-1804-1-e.pdf
		Minutes of meeting	LC Paper No. CB(1)741/09-10 http://www.legco.gov.hk/yr08-09/english/panels/tp/tp_rdp/minutes/rdp20090604.pdf
10.6.2009	Public Works Subcommittee	West Island Line - funding support	PWSC(2009-10)50 http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-50e.pdf
		West Island Line - essential public infrastructure works	PWSC(2009-10)51 http://www.legco.gov.hk/yr08-09/english/fc/pwsc/papers/p09-51e.pdf

Date of meeting	Committee	Minutes/Paper	LC Paper No.
		Minutes of meeting	LC Paper No. PWSC134/08-09 http://www.legco.gov.hk/yr08-09/english/fc/pwsc/minutes/pwsc20090610.pdf
3.7.2009	Finance Committee	Minutes of meeting	LC Paper No. FC8/09-10 http://www.legco.gov.hk/yr08-09/english/fc/fc/minutes/fc20090703.pdf LC Paper No. FC10/09-10 http://www.legco.gov.hk/yr08-09/english/fc/fc/minutes/fc20090703a.pdf

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