

For discussion

Legislative Council Panel on Transport

**West Hong Kong Island Line,
South Hong Kong Island Line and Route 4**

INTRODUCTION

This paper serves to brief Members on the details of West Hong Kong Island Line/South Hong Kong Island Line (WIL/SIL) Project Proposal submitted by the MTR Corporation Limited (MTRCL) as well as the progress of the development of the Route 4 (formerly Route 7) – Section between Kennedy Town and Aberdeen.

BACKGROUND

2. MTRCL conducted a WIL/SIL feasibility study in mid-2003 to develop a more cost effective railway scheme serving the western and southern districts. In the study, the MTRCL has also evaluated the external benefits of the WIL/SIL project and the impact of the rail project on other modes of transport. Upon the completion of the study, the MTRCL submitted a preliminary WIL/SIL Project Proposal to the Government in end March 2004.

MTRCL WIL/SIL PROJECT PROPOSAL

3. The Panel was briefed on the development of the preliminary scheme for the WIL/SIL in October 2003. Since then, the MTRCL has further refined the railway scheme options with respect to constructability, patronage, costs, and environmental and economic benefits. In the course of the scheme development, MTRCL conducted a public consultation exercise to gather public views and opinions on how the WIL/SIL should best be carried forward. MTRCL's proposed WIL/SIL scheme now comprises the following three major components:

- (a) a short extension of the Island Line from Sheung Wan to Sai Ying Pun;
- (b) a proposed WIL from Sai Ying Pun to Wong Chuk Hang via University, Kennedy Town, Cyberport, Wah Fu and Aberdeen with provision for future stations in Queen Mary Hospital and Tin Wan; and
- (c) a proposed SIL from South Horizons via Lei Tung, Wong Chuk Hang and Ocean Park to Admiralty with Happy Valley and Wan Chai Stations as optional.

INITIAL ASSESSMENT

4. The assessment of the MTRCL's WIL/SIL Project Proposal is underway. As the Project Proposal covers a wide range of aspects including transport modelling, inter-modal coordination, land acquisition and reprovision of affected facilities, the Government will need more time to carefully examine the proposal in detail. We have some preliminary observations which are set out below.

5. In the Project Proposal, there are three options for the SIL to connect with the Island Line. One is a direct link from Ocean Park to Admiralty. The other options will include a station at Happy Valley in the network with two possible alignments, namely, either directly or through a Wan Chai Station to Admiralty. A plan showing the proposed alignment options prepared by Annex A MTRCL is at **Annex A**. The direct link option has the lowest capital cost and requires the least funding support. Project costs and rail catchment of MTRCL's revised WIL/SIL scheme options and the original proposal are Annex B presented in **Annex B** Table 1.

6. The evaluation of economic benefits brought by transport infrastructure normally includes time savings, operating cost savings for public transport operators and road users, and savings in accident costs. MTRCL's assessment of external benefits has, however, included factors such as additional revenue to the Government arising from higher property values and financial gains to private property owners. These factors are normally excluded in the conventional calculation of the economic internal rate of return (EIRR) which is the commonly accepted benchmark in establishing the viability of a project.

We would hence need to review carefully the soundness of MTRCL's forecast EIRR to ascertain its accuracy.

7. We have examined the ultimate peak hour patronage of the WIL/SIL. The SIL has a higher peak hour patronage than WIL. Preliminary assessment indicates that the peak hour flow in the peak direction on the SIL in 2016 is unlikely to exceed 17 000 passengers. A medium capacity railway system as proposed by MTRCL is expected to be sufficient to handle the demand up to 2030.

8. We note that there would be impact on franchised bus, public light bus (PLB) and taxi. The three transport trades have expressed grave concern about the impact of the proposed railways on their business in various fora. A detailed study to assess the impact on the various public transport operators would be required. The trades will be consulted during the process.

9. We will continue our assessment of MTRCL's Project Proposal. Based on the recent performance of the West Rail, we will need to revisit the patronage forecast provided by the transport model so that the system configuration and project performance can be further validated. Also we will examine the technical feasibility, environmental protection, passenger convenience, and the size of the funding gap to be bridged by the Government. The last issue requires careful consideration to ensure the best use of community resources among the many competing demands and will not be given lightly.

10. We have reviewed the traffic conditions of the existing major external roads serving the western half of the Southern District including Pok Fu Lam Road, Aberdeen Tunnel and Victoria Road with respect to the latest demographical and economic data. With the Interim Traffic Improvement Measures (Interim Measures) developed under the Alternative Alignments Study for Route 4 in place, the existing road network should be able to cope with demand up to 2016. The volume to capacity (v/c) ratio¹ of the Aberdeen

¹ Volume to capacity (v/c) ratio is an indicator which reflects the performance of a road. A v/c ratio equal to or less than 1.0 means that a road has sufficient capacity to cope with the volume of vehicular traffic under consideration and the resultant traffic will flow smoothly. A v/c ratio above 1.0 indicates the onset of congestion. A v/c ratio above 1.2 indicates more serious congestion with traffic speeds progressively deteriorating with further increase in traffic; speed and freedom to manoeuvre will become increasingly restricted and drivers would experience a poor level of comfort and convenience.

Tunnel is expected to reach 1.2 by year 2016. On Pok Fu Lam Road, the traffic volume in 2016 will be marginally above its design capacity whereas Victoria Road will still have spare capacity. Our latest transport assessment indicates that the introduction of the WIL/SIL would reduce the amount of road traffic in 2016 on Pok Fu Lam Road and Aberdeen Tunnel by about 10%. The v/c ratios of the critical road sections in 2016, with the Interim Measures and **Annex B** WIL/SIL in place, are shown in **Annex B** Table 2.

ROUTE 4

11. In view of Government's decision not to pursue the previously proposed reclamation in the Western District Development (WDD) area, we have revisited the alignment of Route 4 at the Western District. Two new viaduct alignment options at the Western District as shown in **Annex C** have been identified to replace the tunnel/depressed road within the WDD.

12. Viaduct A, connecting the existing stub end at Route 4 near Sai Ying Pun, will run along the existing waterfront and take the form of a double decker along the New Praya at Kennedy Town. Viaduct B will take the form of an elevated deck running at a distance of about 100m to 150m from the existing waterfront. Visual impact will be an issue that requires careful consideration for both options. We need also to review whether the proposed elevated deck of alignment B could meet the Court of Final Appeal's "overriding public need" test for reclamation.

13. From the Western District to the Aberdeen area, Route 4 can take two options – Option 1 will run in the form of a tunnel from the Kennedy Town area to Mount Davis and from there in deck structure along Sandy Bay to the Cyberport area which will then take the form of a depressed road, followed by deck structure again at Waterfall Bay and then a tunnel at the Tin Wan area until it is connected to the Aberdeen Praya Road while Option 2 which will run mainly in the form of a tunnel through the Mount Davis area to the Aberdeen Praya Road.

14. The choice between viaduct alignments A and B at the Western District area will not have any significant effect on the overall capital and recurrent costs and transport performance of the whole Route. The impact on the v/c ratios at the critical road sections in 2016 is set out in **Annex B** Table 2.

On Aberdeen Tunnel, the relief to be attained by both alignment options are similar and the v/c ratios in 2016 would be reduced from 1.2 to 1.1. With regard to the traffic conditions along Pok Fu Lam Road, the two alignment options perform differently. Option 1 reduces the v/c ratios at the critical section of Pok Fu Lam Road between Pokfield Road and Sassoon Road in 2016 from 1.1 to 0.8 whilst Option 2 has only marginal benefit in relieving the traffic congestion. Due to the lack of connection to Cyberport and the local roads in the vicinity, the v/c ratio of Option 2 in 2016 is only 0.4 which indicates a low utilisation rate of the Route while that of Option 1 reaches 0.5.

15. In the meantime, the Interim Traffic Improvement Measures which will improve the local traffic conditions along Pok Fu Lam Road to a manageable level without Route 4, are now being carried forward as planned. Preliminary planning and design work are in progress. We plan to start the construction works in mid 2005 for completion by late 2006/early 2007.

The Way Forward

16. We will continue to examine MTRCL's proposal and will require a more detailed study from MTRCL on the impact of the WIL/SIL on other transport modes and how such impact can be mitigated. In parallel, we will continue with the planning of the Route 4, and will endeavor to complete the Interim Traffic Improvement Measures as soon as possible to improve the local traffic conditions along Pok Fu Lam Road. We will consult the LegCo Transport Panel, the concerned District Councils and the affected transport operators in taking the issue forward.

西港島綫及南港島綫路綫

West Island Line and South Island Line Alignments

附件A

Annex A

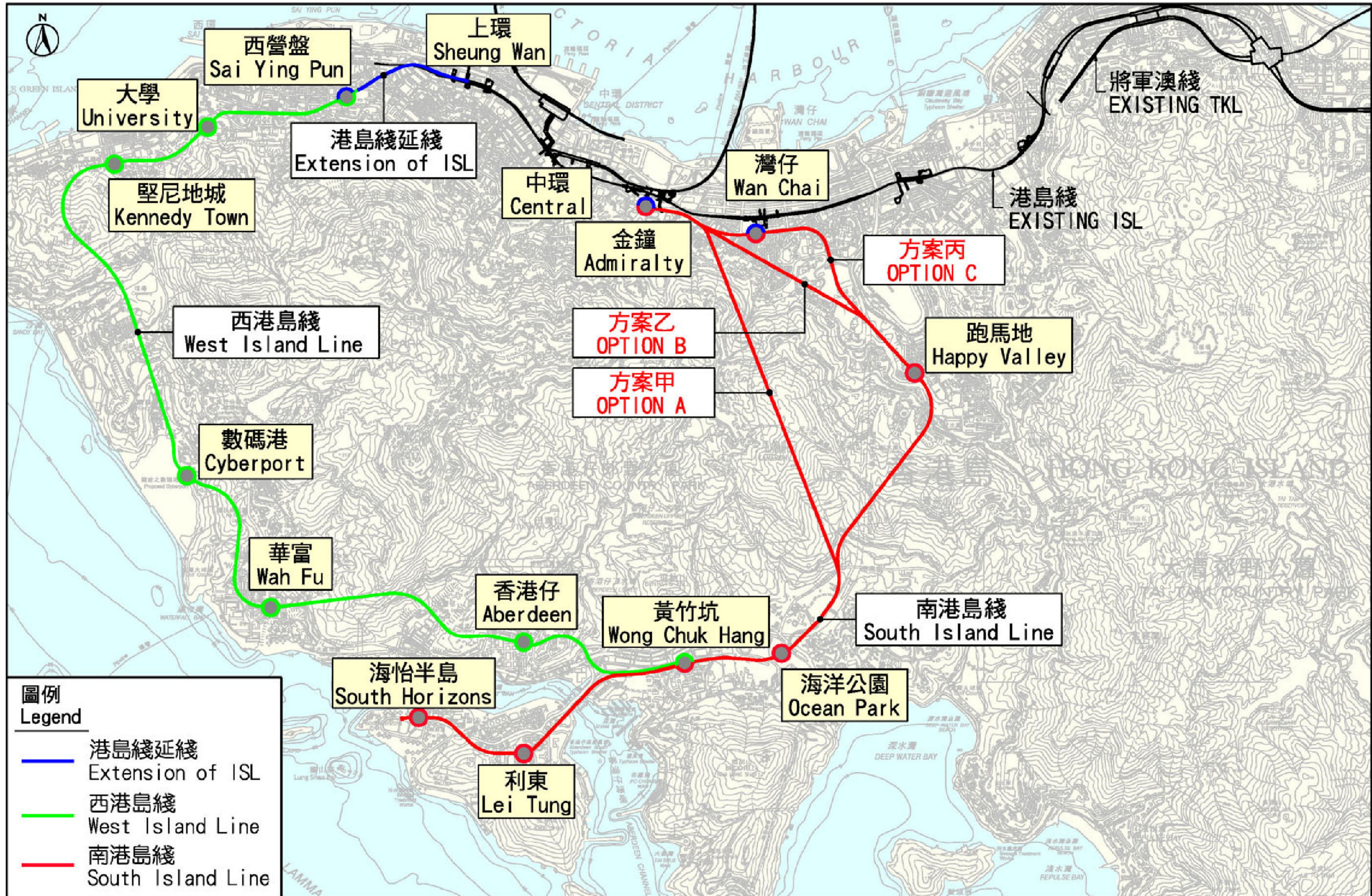


Table 1 - Project Cost and Rail Catchment

		WIL/SIL (2004 Proposal)			WIL and SIL (2002 Proposal)
		Option A	Option B	Option C	
Project Cost (\$ billion in 2003 December prices)		14.6	15.5	16.6	19.3
Additional Rail Catchment in 2016 due to WIL and SIL	Population	351 000	372 000	372 000	338 000
	Employment	141 000	151 000	151 000	140 000
	Total	492 000	523 000	523 000	478 000

Note: Option A - Direct link from Ocean Park to Admiralty

B - With Happy Valley Station and then directly to Admiralty

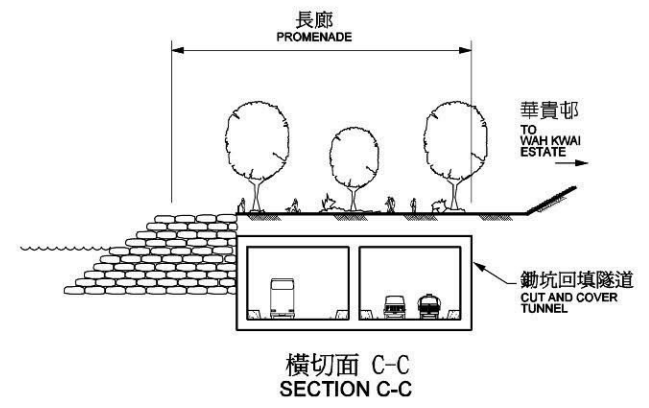
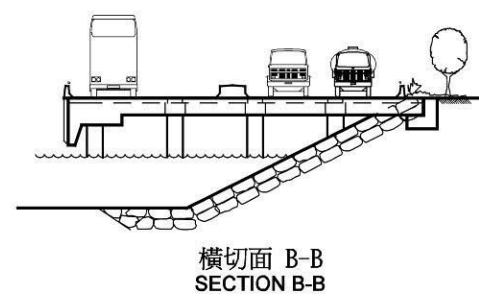
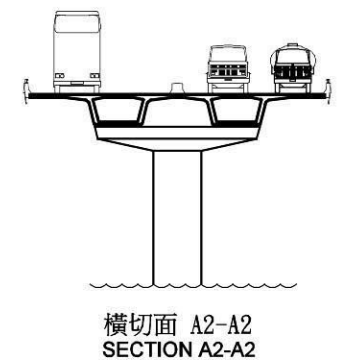
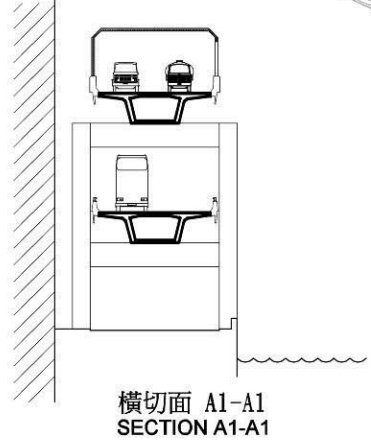
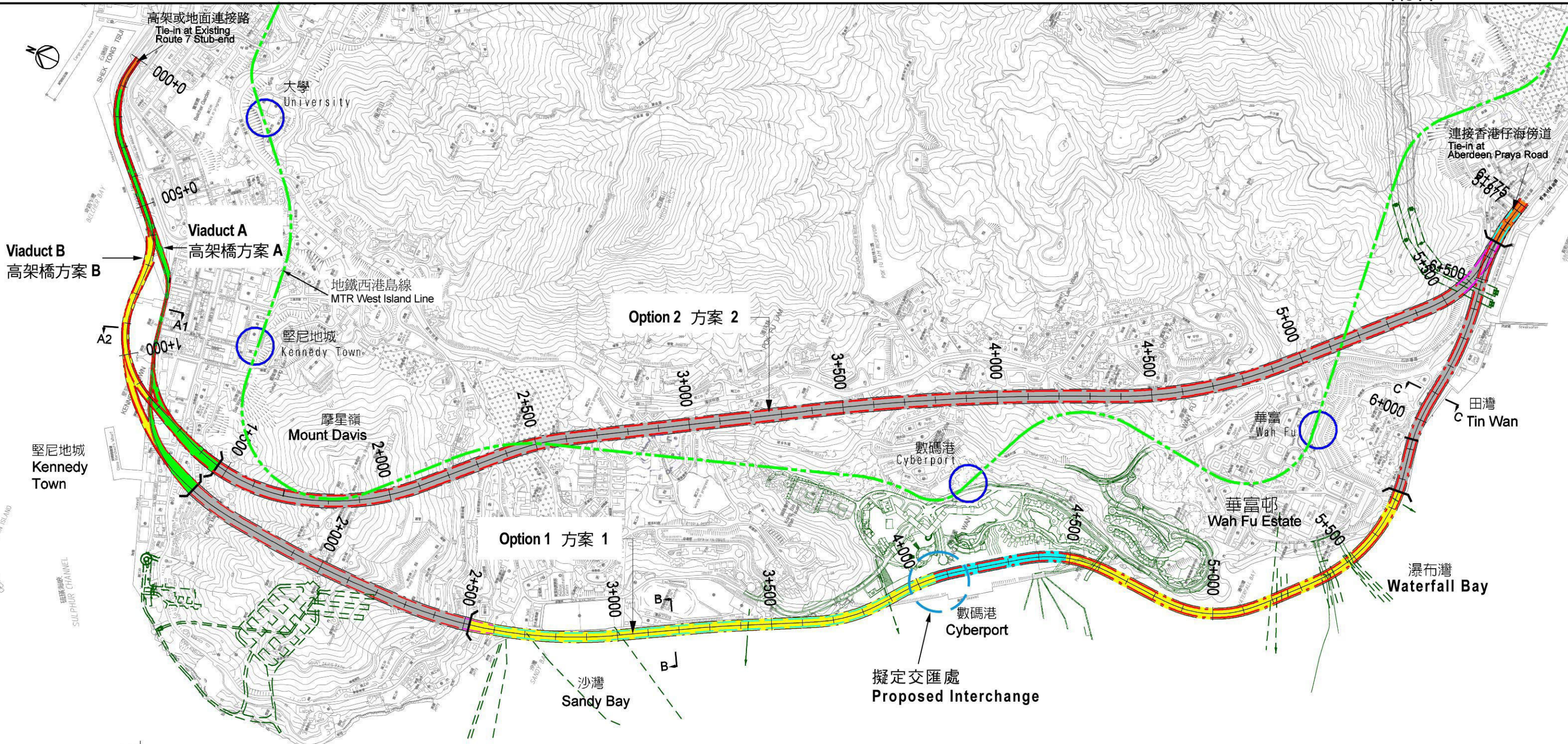
C - With both Happy Valley and Wanchai Stations

**Table 2 - Performance of Route 4 and WIL/SIL on Road Network
(in V/C Ratio)**

Road	Scenario	Year 2016
Critical Section of Pok Fu Lam Road (between Pokfield Road and Sassoon Road)	With Interim Measures only	1.1
	Option 1 of Route 4	0.8
	Option 2 of Route 4	1.0
	WIL/SIL	1.0
Critical Section of Victoria Road (between Cadogan Street and Mt Davis Road)	With Interim Measures only	0.7
	Option 1 of Route 4	0.4
	Option 2 of Route 4	0.6
	WIL/SIL	0.5
Aberdeen Tunnel	With Interim Measures only	1.2
	Option 1 of Route 4	1.1
	Option 2 of Route 4	1.1
	WIL/SIL	1.1
Route 4	Option 1 of Route 4	0.5
	Option 2 of Route 4	0.4

Notes -

1. All the above v/c ratios have assumed Interim Measures at Pok Fu Lam Road in place.
2. The capacity constraint of Aberdeen Tunnel is mainly due to the tailback problem of the road network in its downstream areas in Wanchai and Causeway Bay. Upon completion of Central – Wanchai Bypass and Island Eastern Corridor Link, there would be general relief in the downstream road network and thus enhance the throughput of Aberdeen Tunnel. The v/c ratios for Aberdeen Tunnel have already assumed the Central – Wanchai Bypass and Island Eastern Corridor Link in place.



圖例 Legend	
地下鐵路西區線 MTRC West Island Line	
沿岸架空平台結構 Deck structure at Coastline	
陸上架空平台結構 Inland Deck Structures	
高架橋/地面路 (連接處用) Viaduct / At-grade (For tie-ins)	
地壘式道路 Depressed Road	
隧道 Tunnel	
隧道出口 Tunnel Portals	
通風設施 Ventilation Buildings	
隧道設施 Tunnel Facilities	

四號幹線 無需填海方案
Route 4 No Reclamation Scenario Options