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24 July 2015

Fax No. : 2978 7569  
Legislative Council Secretariat  
Legislative Council Complex  
1 Legislative Council Road  
Central, Hong Kong  
(Attn: Miss Katherine CHAN)

Dear Miss CHAN,

**Legislative Council Panel on Transport  
Subcommittee on Matters Relating to Railways**

**Carrying Capacity of the West Rail Line**

Regarding item 6 on the list of outstanding items for discussion as at 13 May 2015 of the Legislative Council Subcommittee on Matters Relating to Railways (LC Paper CB(4)954/14-15(01)), we submit the enclosed Information Paper on "Carrying Capacity of the West Rail Line" for information.

Yours sincerely,

A handwritten signature in black ink, appearing to be "S. H. LEUNG".

( S. H. LEUNG )

for Secretary for Transport and Housing

Encl. – "Carrying Capacity of the West Rail Line"

c.c.

Highways Department (Attn: Mr. Henry CHAN) (Fax: 2714 5297)

MTR Corporation Limited (Attn: Ms. Maggie SO) (Fax: 2795 9991)

**Legislative Council Panel on Transport  
Subcommittee on Matters Relating to Railways**

**Carrying Capacity of the West Rail Line**

**Introduction**

This paper aims to brief Members on the matters in relation to the carrying capacity of the West Rail Line (“WRL”).

**Present Situation**

2. In tandem with the development and population growth in the Northwest New Territories (“NWNT”), the WRL has been enhancing services to cope with the traffic needs of the residents. The commissioning of the Kowloon Southern Link of the WRL in 2009 has greatly reduced the segregation between NWNT and urban Kowloon. To facilitate passengers using the services of the WRL and Light Rail (“LR”), the MTR Corporation Limited (“MTRCL”) is also providing feeder bus services connecting to various stations of the WRL and LR stops to serve them.

3. Similar to other public transport modes, the patronage of the WRL is higher during the busiest period of peak hours. In view of the current situation of the WRL, the MTRCL has enhanced its services as far as practicable. The measures include better platform management to ensure more even distribution of passengers at platforms or on trains and smoother passenger flow in order to increase the efficiency of train operation; and increasing the train frequency where necessary at peak hours as far as possible, in order to cope with the overall demands of the passengers. Currently, the headway of the WRL at the morning peak of a normal weekday is three minutes while that at the evening peak is three and a half minutes. The headway at non-peak hours is about five to seven minutes. Since August 2013, there has been a special Hung Hom-bound departure from Tin Shui Wai Station during the busiest period of the morning peak hours to help meet the needs of passengers boarding at the midway stations. According to the observation by MTRCL, this special departure can effectively

relieve high passenger demands at the pressure point between Kam Sheung Road Station and Tsuen Wan West Station. Since August 2014, eight train trips have been added to the WRL from 7:30pm to 12:00am on Fridays and Saturdays so that headway can be shortened to 5 minutes where necessary.

## **Medium-term Planning**

4. The Shatin to Central Link (“SCL”) is currently under construction. With a total length of 17 kilometres and 10 stations, it is a strategic railway project in the territory. The SCL will connect with many existing railways to form two strategic railway corridors, namely “East-West Corridor”<sup>1</sup> and “North-South Corridor”<sup>2</sup>. Details are at **Enclosure 1**. Upon commissioning of “East-West Corridor” in 2019, the passengers from New Territories West can get to eastern Kowloon, Tai Wai, Hin Keng and Wu Kai Sha, from Tuen Mun Station without interchange.

5. Currently the WRL is operating with 7-car trains and the hourly frequency at each direction is about 20 during the morning peak hours of weekdays, i.e. the headway is about 3 minutes. Under the SCL project, the signalling system of the WRL will be improved, 148 new train cars will be procured and existing trains will be modified, in order to get prepared for the commissioning of the “East-West Corridor”. It is expected that starting from 2016, the trains of the WRL will gradually be changed from 7-car to 8-car. After the scheduled commissioning of “East-West Corridor” in 2019, all trains will be operated with 8-car and the carrying capacity will be increased by at least 14%. The train frequency will be adjusted according to the actual passenger throughput. After all the above-mentioned purchased and modified trains are in services, the “East-West Corridor” can provide services at the highest hourly frequency of 24 at each direction with 8-car trains. On this basis, the carrying capacity of the WRL will increase by 37% over the current 7-car trains operating at an hourly frequency of about 20 (inclusive of the above-mentioned 14% increase). As the increase in train frequency can only be implemented provided that appropriate environmental impact mitigation measures are in place, we have requested MTRCL to investigate and handle the technical issues.

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<sup>1</sup> Formed by the existing WRL, the Tai Wai to Hung Hom section of the SCL currently under construction and the existing Ma On Shan Line.

<sup>2</sup> Formed by the existing East Rail Line and the Hung Hom to Admiralty section of the Shatin to Central Link currently under construction.

6. In the “Railway Development Strategy 2014” announced in September 2014, the Government proposed to complete seven new railway projects within a design horizon up to 2031. Of these seven railway projects, the Northern Link and Kwu Tung Station, as well as the Tuen Mun South Extension and Hung Shui Kiu Station are serving the NWNT to dovetail with the development programmes of the region up to 2031. The preliminary conceptual schemes of the Northern Link and Kwu Tung Station, Tuen Mun South Extension and Hung Shui Kiu Station are at **Enclosure 2**.

7. The Northern Link will provide shuttle services between the existing Kam Sheung Road Station of the WRL and the new Kwu Tung Station of the Lok Ma Chau Spur Line. Passengers can interchange to the WRL at Kam Sheung Road Station or to the Lok Ma Chau Spur Line at Kwu Tung Station. Whether intermediate stations will be added between Kam Sheung Road Station and Kwu Tung Station will be subject to the overall planning on land use along the line and of other potential development areas in New Territories North. The implementation window of the Northern Link and Kwu Tung Station will match with the developments under planning, and is tentatively proposed to be from 2018 to 2023.

8. Hung Shui Kiu Station will be located between the existing Tin Shiu Wai Station and Siu Hong Station of the WRL. It will mainly provide rail services to the Hung Shiu Kiu New Development Area and nearby areas. The indicative implementation window of Hung Shiu Kiu Station is between 2021 and 2024 to tie in with the planning of Hung Shiu Kiu area. The Hung Shiu Kiu New Development Area will be developed in phases. The land formation and infrastructure works of the first phase will start in 2020. The current target is to have the first population intake in 2024 and the completion of the entire development by 2037.

9. The Tuen Mun South Extension will extend from the existing terminal of Tuen Mun Station southwards to Tuen Mun South with the indicative implementation window between 2019 and 2022.

10. We will implement each of the new railway projects recommended under the “Railway Development Strategy 2014” in accordance with the established mechanism and procedures. We will start the detailed planning works, including an in-depth feasibility study to ascertain the relevant justifications, detailed

alignments, locations of stations, implementation timetables, implementation approaches and funding methods, etc. We will also consult the public and the District Councils, and submit the funding application for proceeding with the design works of the projects.

11. When conducting detailed planning of the new railway projects in respect of Northern Link and Kwu Tung Station, Tuen Mun South Extension and Hung Shui Kiu Station, etc., we will refer to the continually updated planning parameters. We will also carefully review the actual traffic situations, including the possible implications upon the existing railway lines after expanding the railway networks, and the corresponding improvement schemes. Before the completion of the new railway projects, the Transport Department will also assess the change in the needs and mode choices for trip making of the residents after the commissioning of these railway projects, as well as the implications to other road based public transport. The Transport Department will also prepare rationalization schemes for improving the coordination among various means of public transport such that the road traffic and the railways can complement to each other.

12. With consideration of the facilities along the “East-West Corridor”, such as the fire safety requirements at tunnel sections and the length of platforms etc., we currently estimate that the “East-West Corridor” can ultimately reach an hourly frequency of 28 at each direction, with 8-car trains. On this basis, the carrying capacity of the WRL will increase by 60% over the current 7-car trains operating at an hourly frequency of about 20 (inclusive of the 37% increase mentioned in paragraph 5). In this regard, we will request MTRCL to enhance the services of the WRL by increasing the train frequency.

13. Upon completion of the above three new railway projects, i.e. Northern Link and Kwu Tung Station, Tuen Mun South Extension and Hung Shui Kiu Station, according to the indicative implementation window, the WRL will be able to meet the demands during the peak hours (around 8 am to 9 am) at the busiest section of the WRL (i.e. from Kam Sheung Road Station to Tsuen Wan West Station) with the trains slightly congested. As we pointed out in the “Railway Development Strategy 2014”, when allowed by resources and other related factors, a service benchmark of four persons per square metre in train compartments will be adopted in the planning of the new railway lines. As for the existing railway lines (including the WRL) or their extension, the service level will still be subject to the infrastructural constraints of the existing railway lines, such as the signalling

system and the shortest platform of a railway line.<sup>3</sup>

## **Long-term Planning**

14. We will timely bid for resources and commence studies for improving the carrying capacity of the railways in NWNT beyond 2031. They include studies on enhancing or improving the existing railway lines, or even the feasibility of constructing new railways, in order to cope with the new traffic demands. These studies will altogether consider the overall development needs in western part of Hong Kong, including the planning of development of “Eastern Lantau Metropolis”.

15. Any long-term road and rail planning works will unavoidably face to a myriad of variables. Most of the development proposals in NWNT are still at planning or investigation stages. We need to go through the established planning and other related statutory procedures, and consult the public. It cannot be ruled out that the proposals will be amended or adjusted according to the public opinions received. Meanwhile, the departments concerned have to carry out detailed feasibility studies and design works for the development proposals, in order to further confirm the appropriate development scale and planning parameters. Furthermore, the large-scale development projects have to be implemented in phases and it is unavoidable that their implementation timetables will have to be amended or adjusted according to the actual situations. Hence, when carrying out the long-term planning of transport infrastructure, we will adjust the associated road and railway schemes and their implementation timetables according to the actual situations of the development proposals.

16. Members are invited to take note of this paper.

## **Transport and Housing Bureau July 2015**

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<sup>3</sup> The stations and train compartments of the existing railway lines (including the WRL) were designed according to the safety standard at the time of their construction (i.e. six persons per square metre).

南北走廊  
North South Corridor

- 東鐵線 East Rail Line
- 沙中線 (紅磡至金鐘段) SCL (Hung Hom to Admiralty Section)



落馬洲  
Lok Ma Chau

羅湖  
Lo Wu

烏溪沙  
Wu Kai Sha

大圍  
Tai Wai

屯門  
Tuen Mun

紅磡  
Hung Hom

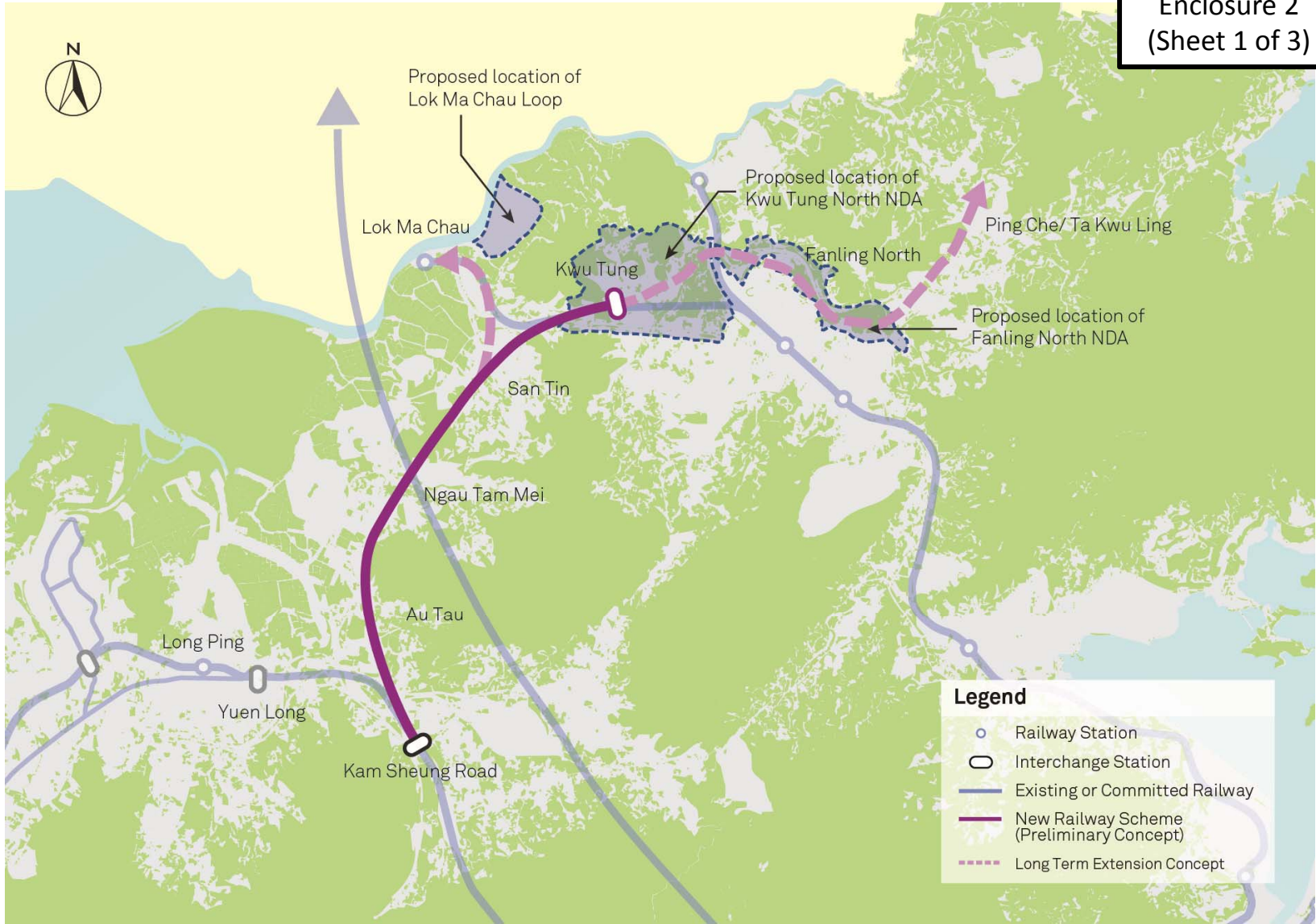
金鐘  
Admiralty

東西走廊  
East West Corridor

- 馬鞍山線 Ma On Shan Line
- 西鐵線 West Rail Line
- 沙中線 (大圍至紅磡段) SCL (Tai Wai to Hung Hom Section)

東西走廊及南北走廊

East West Corridor and  
North South Corridor

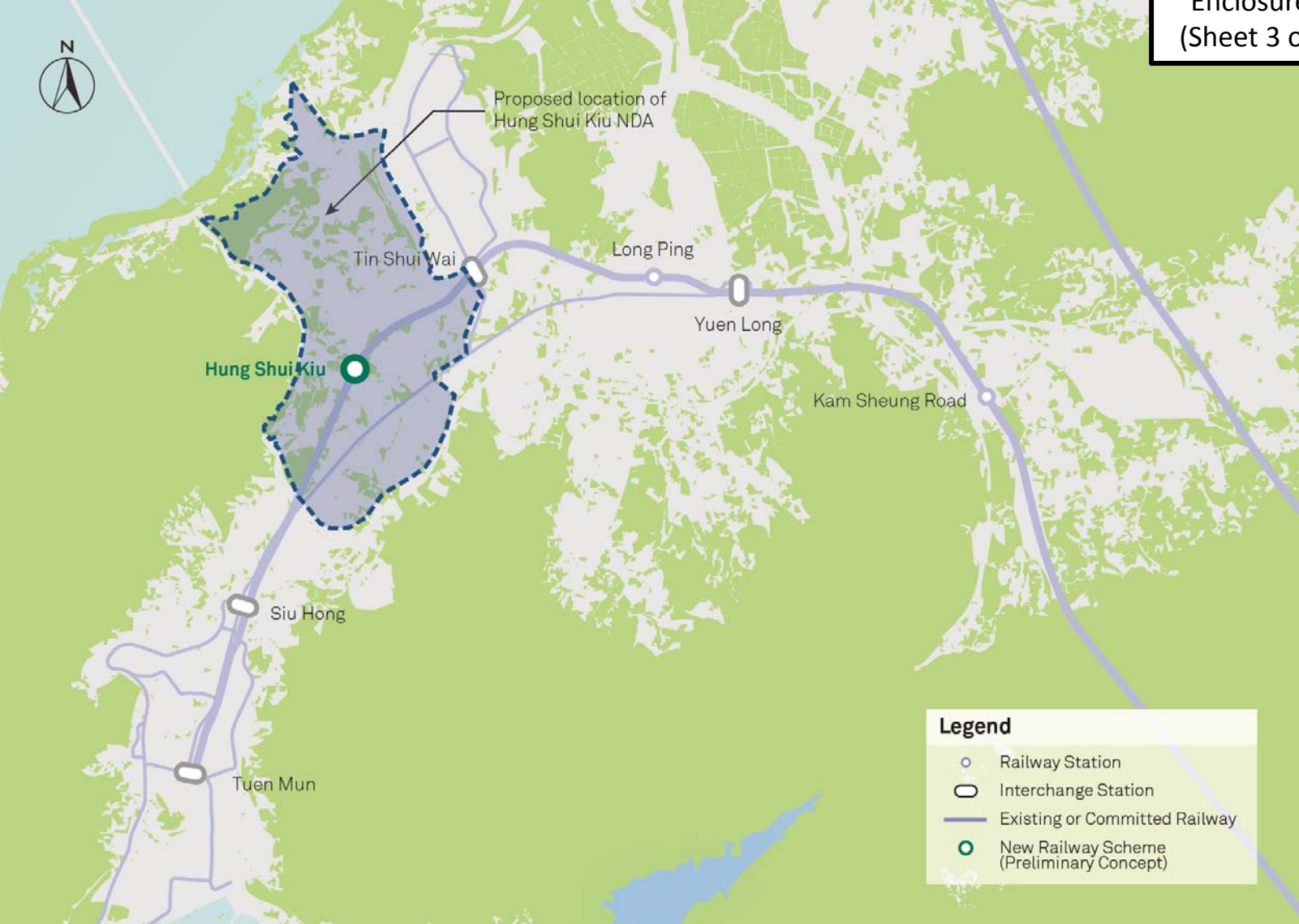


**Preliminary Conceptual Scheme of the Northern Link  
(including Kwu Tung Station)**





**Preliminary Conceptual Scheme of the Tuen Mun South Extension**



**Preliminary Conceptual Scheme of the Hung Shui Kiu Station**