Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Progress Update of the Construction of the West Island Line, South Island Line (East) and Kwun Tong Line Extension

Introduction

This paper reports to Members on the progress of the main construction works of the West Island Line ("WIL"), South Island Line (East) ("SIL(E)") and Kwun Tong Line Extension ("KTE") (as at 30 June 2015).

Background

WIL

2. WIL is an approximately three-kilometre long railway extension of the existing Island Line running from Sheung Wan Station to Kennedy Town Station with two intermediate stations at Sai Ying Pun and the University of Hong Kong (the alignment is at **Annex 1**). In 2009, the estimated capital cost of WIL was $15,400 million (in December 2008 prices). According to the estimation of the MTR Corporation Limited ("MTRCL") in November 2014, the latest capital cost of WIL is $18,500 million (in money-of-the-day prices).

SIL(E)

3. SIL(E) is a new railway corridor running from South to North of Hong Kong Island. It starts from South Horizons on Ap Lei Chau to Admiralty via Lei Tung, Wong Chuk Hang and Ocean Park with a total length of about seven kilometres (the alignment is at **Annex 2**). SIL(E) will connect the MTR Island Line, Tsuen Wan Line and the future Shatin to Central Link ("SCL") at Admiralty Station. The existing Admiralty Station will be expanded to form an integrated station for the four lines to provide seamless interchanges for passengers. In 2011, the estimated capital cost of SIL(E) was $12,400 million (in December 2009 prices). MTRCL advised in November 2014 that the cost had increased to $15,200 million (in money-of-the-day prices). According to MTRCL, the latest estimate of the construction cost of SIL(E) has been further revised upward to

$16,900 million (in money-of-the-day prices) due to the complexity of the project and continued challenges encountered.

KTE

4. KTE is an approximately 2.6-kilometre long railway extension of the existing Kwun Tong Line running from Yau Ma Tei Station to the new Ho Man Tin Station and Whampoa Station (the alignment is at **Annex 3**). In 2011, the estimated capital cost of KTE was $5,300 million (in December 2009 prices). Owing to the complexity of the project and continued challenges encountered, MTRCL advised that the estimate of the construction cost of KTE had been adjusted upward to $7,200 million (in money-of-the-day prices).

Project Implementation and Funding Mode

5. WIL, SIL(E) and KTE, being the extensions of the existing railway networks owned by MTRCL, are 'ownership' projects. Under the 'ownership' approach, MTRCL will be responsible for the financing, design, construction, operation and maintenance of these railway projects, and will own the railways. The Government and MTRCL signed the Project Agreement for WIL in July 2009, and the Project Agreements for SIL(E) and KTE in May 2011. The target commissioning dates are August 2014 for WIL, and December and August 2015 for SIL(E) and KTE respectively.

6. The construction cost of the railways is so enormous that WIL, SIL(E) and KTE are not considered financially viable based on their fare and non-fare revenues alone. Funding support to MTRCL is needed from the Government to bridge the funding gap[1] of the projects.

7. To implement SIL(E) and KTE projects, the Government granted the property development rights under 'the Rail-plus-Property Model' to bridge the funding gaps of the projects with caution that the land to be granted to MTRCL

[1] A railway is considered not financially viable if the present value of all its projected revenues net of projected expenditures falls short of the expected return on capital. During the initial public offering ("IPO") of MTRCL in 2000, the Government acknowledged to investors through the IPO Prospectus that the return required by MTRCL for any new railway project would ordinarily be between 1% and 3% above the Weighted Average of Cost of Capital ("WACC"). This shortfall is known as the funding gap.

should not be more than what is required to bridge the funding gaps. As such, the Government granted in 2011 the topside property development rights at Wong Chuk Hang Depot and Ho Man Tin Station for the implementation of SIL(E) and KTE projects respectively.

8. Being granted the property development rights, MTRCL is responsible for all the costs of the property development as well as the construction and operating costs of the railway projects. In addition, it has to bear long term risks in financing the projects, operating the railways, and market fluctuations in rail and property developments. The design philosophy of the 'Rail-plus-Property Model' is to strike a fair balance of risks and benefits between the Government and MTRCL. As the SIL(E) and KTE are ownership projects, MTRCL will be responsible for the additional expenditure arising from the delay of the railway works.

9. For WIL, due to the lack of suitable sites for property development along or adjacent to the alignment, the Government decided in 2009 to provide a non-recurrent capital grant of $12,700 million (Net Present Value in June 2009) as the ceiling of the funding support to bridge the funding gap of the project.

Essential Public Infrastructure Works related to Railway Projects

10. In order to tie in with the commissioning of WIL, SIL(E) and KTE, the Government also entrusted the implementation of the associated 'Essential Public Infrastructure Works' ("EPIW") to MTRCL. They include construction and improvement of the pedestrian and linking facilities for providing convenient access to railway stations so that the consequential social and economic benefits of the railways can be fully realised. EPIW, which are constructed in parallel with the railway works, include:-

EPIW of WIL

(i) a covered pedestrian link at Sands Street, including a lift tower at the junction of Sands Street and Rock Hill Street with a single-way escalators;
(ii) a footbridge across Pok Fu Lam Road for connecting to the University of Hong Kong Centennial Campus; and
(iii) a boarding and alighting area for green minibuses at the Kennedy

Town Station.

EPIW of SIL(E)

(i) construction of a public transport interchange underneath Wong Chuk Hang Station; improvement of the road network in the vicinity of Ocean Park Station and Wong Chuk Hang Station;
(ii) modification of a section of Wong Chuk Hang Nullah between Ocean Park Road and Nam Long Shan Road;
(iii) construction of a covered footbridge connecting Wong Chuk Hang Station with the adjacent industrial area and a covered footbridge linking the western part of Ap Lei Chau Estate to Yi Nam Road near Precious Blood Primary School; and
(iv) construction of a pedestrian link to Aberdeen Channel Promenade and improvement of the road junctions of Ap Lei Chau Drive and Ap Lei Chau Bridge Road.

EPIW of KTE

(i) construction of a pedestrian link system connecting Ho Man Tin Station to Ho Man Tin Estate, Oi Man Estate and the Hung Hom area south of Chatham Road North, which includes covered footbridges, covered walkways and subways;
(ii) construction of a footbridge integrating with the existing footbridge across Chatham Road North and connecting Ho Man Tin Station to Wuhu Street; and
(iii) construction of a public transport facility at Chung Hau Street near Ho Man Tin Station.

Latest Progress of the Works

11. MTRCL has submitted progress reports on WIL, SIL(E) and KTE (as at 30 June 2015) at **Annexes 4** to **6** respectively. The analysis and supplement made by HyD on these progress reports are provided below.

WIL

12. WIL, together with HKU Station and Kennedy Town Station, was

commissioned on 28 December 2014 whilst Sai Ying Pun Station (except Ki Ling Lane Entrance) was subsequently completed and opened on 29 March 2015. All the three stations of WIL are now opened to the public. All EPIW related to WIL have also been completed.

13. Owing to the impact of earlier construction works, the construction works for the passenger adit between Ki Ling Lane entrance and First Street/Second Street entrance are still ongoing. Excavation for the remaining 8-meter passenger adit is being carried out. As a large amount of boulders was encountered during excavation, the progress of excavation works was slower than anticipated. Construction of the tunnel lining will start upon completion of excavation. Meanwhile, the structural and, electrical and mechanical ("E&M") works of the station entrance are being carried out. **As the progress of excavation works was slower than anticipated, MTRCL advised in early August 2015 that the target completion date of the Ki Ling Lane entrance was revised from the fourth quarter of 2015 to the first quarter of 2016.** We will closely monitor the progress of works.

14. Regarding the water seepage found earlier on some locations of the three stations of WIL, MTRCL had immediately carried out remedial measures to minimize any inconvenience to passengers. MTRCL had conducted detailed investigation into the incident and submitted a report to departments concerned. The report indicated that water seepage appeared at 20 locations of the three stations, and were mainly found at the construction joints of concrete lining. The seepage was not serious and would not affect the structural integrity of the stations nor the railway operation. The report has been accepted by departments concerned. MTRCL will continue to monitor the situation of the stations and if water seepage happens again, it will immediately carry out remedial measures.

<u>SIL(E)</u>

15. The expansion works at Admiralty Station for SIL(E) involve the addition of three underground levels below Harcourt Garden east of the existing station and the construction of an approximately 200m long overrun tunnel for SCL. The additional three underground levels include one level for interchange and two levels for train platforms. The platforms at the upper level are reserved for the use of SCL while the platforms for SIL(E) are at the lowest level. Upon expansion, Admiralty Station will become an interchange station serving

passengers of SCL and SIL(E). Hence, except that the construction cost ($300 million) of the overrun tunnel of SCL would be fully absorbed by the SCL project, the construction cost of the expansion work of Admiralty Station will be apportioned between SCL and SIL(E) projects at a ratio of 70:30 in accordance with the estimated patronage at peak hours at the station. According to the cost estimate in 2011, SCL project has to share about $2,700 million (in money-of-the-day prices) for the costs of building works, building services works, electrical and mechanical works for the portion of SCL at Admiralty Station, etc. Besides, the SCL project has to share about 350 million for the costs of the portion of ventilation facilitates at Admiralty Station for SCL. Hence, the SCL will have to share an overall cost of about $3,350 million (in money-of-the-day prices) at Admiralty Station. MTRCL advised the Highways Department ("HyD") on 12 August that the recently completed cost estimate review of the expansion works of Admiralty Station of SIL(E) indicated an upward adjustment of the relevant cost of expansion works of Admiralty Station to be shared by SCL. According to the apportionment ratio of 70:30 above, the cost shared by SCL has to be adjusted upward from about $3,350 million to about $4,650 million with an increase of about $1,300 million. HyD will request the MTRCL to submit further information and will critically examine the latest cost estimate with the assistance of its monitoring and verification consultant.

16. MTRCL carried out excavation work for the expansion at Harcourt Garden site with the cut-and-cover method and subsequently the structural work of the station. As safety is accorded the highest priority, it is a big challenge to carry out the excavation underground where the existing train station, tunnels in use and foundations of many buildings are situated. In the process of excavation, it is found that the actual spacing of joints in rock is less than the estimation from ground investigation reports. In other words, the level of weathering of the rock is less than that estimated. This in effect makes the excavation more difficult. Furthermore, in order to connect the expansion part with the platforms of SIL(E) and SCL, the underpinning works for the existing tunnel of the Island Line have to be carried out for excavation underneath.

17. The excavation for the underpinning works beneath the tunnels of Island Line started in January 2014 with the use of mechanical method. But the speed and efficiency of excavation have been far from satisfactory. To improve the speed of excavation, the contractor changed the design of the temporary support for the works in December 2014 to provide more space in the excavation area so as to facilitate the excavation work. Besides, the contractor has also adopted

blasting to assist the mechanical excavation since the end of January 2015 to speed up the excavation. As at 30 June 2015, about 89% of the excavation for the underpinning works has been completed. The critical part of the excavation for the underpinning works was completed in early June 2015. Although the progress of excavation has improved significantly in the past half year, it is not able to recover the delay, which has in turn affected the progress of the subsequent structural works for the station expansion. While the progress of the structural works has improved since February 2015, the accumulated delay could not be recovered.

18. The continuous closure of roads surrounding the work site of Harcourt Road Garden between late September and mid-December 2014 affected construction traffic of the site. With the traffic conditions near the site returned to normal on 11 December 2014, all the ingresses and egresses of the site resumed normal operation on the following day. MTRCL considers that the closure of roads only has limited impacts on the overall progress of works of the project as it is brief compared with the overall construction period of SIL(E). MTRCL is still following up with the contractor on this issue.

19. There are various degrees of delay in the construction of Nam Fung Tunnel which connects Admiralty Station and Ocean Park Station, and other railway facilities at Wong Chuk Hang and Ap Lei Chau. However, it is not as serious as the expansion works at Admiralty Station. MTRCL said at the beginning of 2015 that the completion date of the construction work of Lei Tung Estate entrance was deferred from the second half of 2015 to the first half of 2016. While the progress of the structural work of the entrance and shaft is slightly behind schedule, it could still tie in with the target commissioning date of SIL(E). HyD will closely monitor the work progress of the entrance and has requested MTRCL to submit detailed information of the work progress.

20. For EPIW of SIL(E) entrusted by the Government to MTRCL as mentioned in paragraph 10 above, as the impact of underground utilities was more complicated than expected, the new slip road connecting Ap Lei Chau Drive from Ap Lei Chau Bridge Road was only opened in July 2015, half a year later than the completion date stated in the entrustment agreement. For the same reason, the construction of a public transport interchange underneath Wong Chuk Hang Station, widening of Heung Yip Road and construction of a pedestrian link to Aberdeen Channel Promenade are expected to be completed in the fourth quarter of 2015, which is about 3 months later than the completion date stated in the

entrustment agreement. Nevertheless, the progress of the above works will not affect the commissioning of SIL(E).

21. According to the latest cost estimate advised by MTRCL to HyD on 12 August, EPIW of SIL(E) may exceed the approved project estimate[2] by about $190 million. HyD will request MTRCL to provide further information for scrutiny.

22. On the whole, **MTRCL maintained the target to commission SIL(E) at the end of 2016. In order to achieve this target, MTRCL has to improve the efficiency of every aspect of the expansion works at Admiralty Station and expedite the remaining works.** Although the critical part of the excavation for the underpinning works was completed in early June 2015, the contractor was still not able to recover the accumulated delay pertaining to the structural works for the station expansion. HyD has requested MTRCL to submit proposals for recovering the delay. HyD has also repeatedly requested MTRCL to explain and supplement the method statements and contents of the progress reports on the remaining construction works. In response to the concerns of HyD, MTRCL has provided regular progress briefs on the structural work. HyD will keep close monitoring of the progress of the works.

KTE

23. The proposed Ho Man Tin Station is an integrated station connecting both SCL and KTE and providing convenient interchange for passengers between these two railway lines. The construction cost of Ho Man Tin Station is therefore apportioned between SCL and KTE projects at a ratio of about 74:26 in accordance with the estimated patronage at peak hours at the station. According to the cost estimate in 2011, the SCL project has to share about $2,900 million (in money-of-the-day prices) for the costs of building works, building services works, E&M works for the portion of SCL at Ho Man Tin Station, etc. MTRCL advised HyD on 12 August that the recently completed cost estimate review of KTE indicated that the relevant construction cost of Ho Man Tin Station shared by SCL would still remain within the budget. However, the EPIW of KTE entrusted by the Government to MTRCL, may exceed the approved project estimate[3] by about $75 million. HyD will request the MTRCL to submit further information in a timely manner for scrutiny.

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2 In 2011, the estimated capital cost of EPIW of SIL(E) was $927 million (in money-of-the-day prices).

3 In 2011, the estimated capital cost of EPIW of KTE was $826.9 million (in money-of-the-day prices).

24. The structural works of Ho Man Tin Station and the west cavern were completed respectively in May and June this year. Currently, MTRCL is engaged in the E&M works and building services installation of Ho Man Tin Station in full swing according to the planned programme. The structural works of the tunnel and track laying works are also in progress.

25. The ongoing excavation for the platform tunnel between the two concourses of Whampoa Station ("WHA") is still the most critical part of the KTE project. The Environmental Protection Department ("EPD") granted Construction Noise Permit ("CNP") to allow the contractor of MTRCL for 24-hour construction inside the underground platform tunnel before with a view to completing the excavation by the middle of 2015. Although MTRCL carried out on-site monitoring of noise level and there was no exceedance to the requirements set out in the CNP, upon receipt of the complaints of residents the contractor voluntarily shortened 24-hour working period to between 7:00 a.m. and 11:00 p.m in order to maintain good relationship with the community. As the working hours are shorter than expected and coupled with the highly variable ground condition encountered, the progress of excavation work is slower than expected. The progress of WHA structural works and parts of station connecting with the platform tunnel is slower than expected because they are also affected by the excavation work of the platform tunnel. It is anticipated that these works will be completed by the fourth quarter of 2015.

26. MTRCL is now carrying out measures of changing the works sequence, increasing manpower and machinery to improve the progress of work. Upon completion of the excavation work, other remaining works such as tunnel lining, track laying, and cable installation will then commence.

27. The delay in the construction of Ho Man Tin Station earlier has affected the progress of part of the EPIW connecting to Ho Man Tin Station, including the two pedestrian subways for crossing Fat Kwong Street and Chung Hau Street, part of the footbridge connecting to Ho Man Tin Station, as well as the public transport interchange at Chung Hau Street in the vicinity of Ho Man Tin Station. Besides, the excavation works for the above two pedestrian subways have encountered complicated geological conditions and are experiencing slight delays. MTRCL has adjusted the works sequence, increased manpower and machinery to improve the situation. The work is progressing according to the planned programme. The above EPIW are expected to be available for public use at the same time as

the commissioning of KTE. Regarding the other EPIW that are not affected by the progress of the works of Ho Man Tin Station, including the footbridges and covered walkways crossing Chatham Road North, Chung Yee Street, Sheung Lok Street and Fat Kwong Street, it is expected that the works can be completed in the third quarter of 2015.

28. HyD monitors the progress of various items through regular progress meetings with MTRCL and site visits. It also discusses with MRTCL and co-ordinates with related government departments to help MTRCL resolve problems encountered in the course of works. Through progress meetings and letters to MTRCL, HyD has repeatedly expressed its concern about the persistent delay of the works at Whampoa Station, and requested MTRCL to review the target commissioning programme of KTE and provide progress briefings and detailed works programmes on the major construction activities in order to clarify and supplement on how to carry out the remaining works in the construction programme. In response to the concerns of HyD, MTRCL has provided HyD with regular progress briefs on major works processes, and has improved the works sequence, increased manpower and machinery, and adjusted the E&M and fitting-out works to improve the construction progress.

29. As mentioned in paragraph 25 above, according to the programme the critical excavation works of the platform tunnel between the East and West concourses of Whampoa Station have to be carried out around the clock. Upon consideration of the views of residents, MTRCL has shorted the excavation period from 24 hours a day to 16 hours (7:00am to 11:00pm), the critical excavation works of the platform tunnel between the East and West concourses of Whampoa Station are yet to be completed. MTRCL has advised in early August 2015 that, depending on the progress of the construction of the platform tunnel at Whampoa, KTE is anticipated to commence operation in the third or fourth quarter of 2016. Based on the information available to HyD, **as the excavation of the platform tunnel between the East and West concourses of Whampoa Station could not be completed in the second quarter of 2015, it is very unlikely that the KTE can be in full operation in mid-2016. If the structural works of the platform tunnel can be completed in the third quarter of 2015 and the structural works of station and parts of the station connecting with the platform tunnel can be completed in the fourth quarter of 2015, the newly revised target opening date of MTRCL (i.e. the third or fourth quarter of 2016) would be achievable.** HyD will monitor of the progress of the works closely.

Conclusion

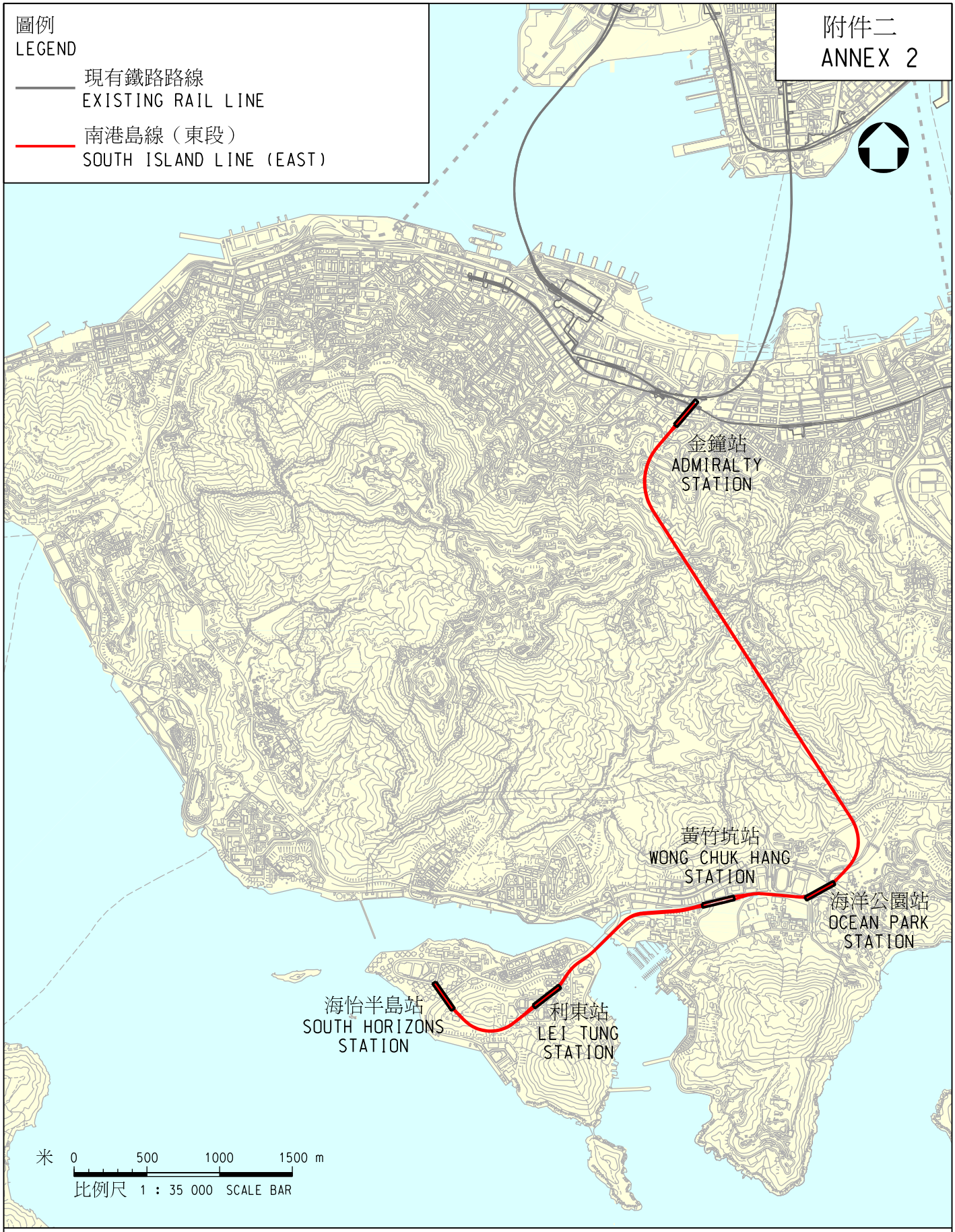
30. We will continue to closely monitor the progress of the remaining works and system testing of the Ki Ling Lane Entrance of WIL for its commissioning in the first quarter of 2016. Regarding SIL(E), although the excavation progress of the critical underpinning works beneath the Island Line at Admiralty Station was completed in early June, 2015, the delay could not be recovered. In addition, there is a delay in the structural works for the station expansion. MTRCL has to expedite the remaining works with a view to achieving the revised target of commissioning of SIL(E) by the end of 2016. Based on the current assessment, there are still risks to achieve the target. For KTE, as the excavation works for the platform tunnel between the East and West concourses of the Whampoa Station were not completed in the second quarter of 2015, it is very unlikely that the KTE can be in full operation in mid-2016. MTRCL has recently revised the target commissioning date of KTE to the third or fourth quarter of 2016. We are of the view that if MTRCL can complete the structural works of the platform tunnel of Whampao Station in the third quarter of 2015 and finish the structural works of station and parts of station connecting with the platform tunnel in the fourth quarter of 2015, it may be able to achieve the revised target commissioning date. Nonetheless, the above railways are ownership projects and MTRCL will bear the additional expenditure arising from the delay of these railway works.

31. The above railway works are major underground infrastructure projects of a considerable scale. There are various difficulties and challenges encountered in the course of construction. It is unavoidable that there are deviations from the original plan for individual works contracts. MTRCL has adjusted its works sequence having regard to the actual situation of work sites. Additional manpower and machinery have also been deployed to particular construction activities in order to overcome the difficulties. The Government will closely monitor the progress of works and the state of construction. It will also assist MTRCL to resolve problems encountered in the construction works as early as possible and conduct timely reviews of the commissioning programme taking into account the latest situation of the project.

Transport and Housing Bureau
Highways Department
August 2015

西港島線
WEST ISLAND LINE

A4 210X297



南港島線（東段）
SOUTH ISLAND LINE (SIL) (EAST)

A4 210X297

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附件三
ANNEX 3

觀塘線延線
KWUN TONG LINE EXTENSION

Annex 4

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Progress Update of the West Island Line
(As of 30 June 2015)

This paper briefs Members on the latest progress of West Island Line (WIL).

Background

2. WIL is a 3-kilometre long extension of the existing Island Line stretching from Sheung Wan Station (SHW) to Kennedy Town Station (KET) with two intermediate stations, Sai Ying Pun Station (SYP) and HKU Station (HKU). It offers a seamless railway service with a journey time from SHW to KET of about 7 minutes.

Construction of the Ki Ling Lane Entrance of SYP

3. Following the opening of KET and HKU on 28 December 2014, SYP commenced passenger service on 29 March 2015. SYP has a total of 6 entrances. Apart from the Ki Ling Lane entrance, the entrances at Queen's Road West, Des Voeux Road West, First Street, Second Street and Bonham Road were opened when SYP commenced service. However, difficulties are encountered at the construction of the Ki Ling Lane entrance which requires longer excavation time than expected. As a significant percentage of rock was found at the remaining 20-metre passenger adit, extra effort is needed for the excavation works. With the entrance structural works, fitting-out, building services, and electrical and mechanical works being carried out in parallel, the working space and site access are very limited that only small machineries could fit into the works area, adding difficulties to the delivery of construction materials. Given the above constraints, the Ki Ling Lane entrance will now likely open in the first quarter of 2016.

Latest Progress of the Project

4. Structural works of the Ki Ling Lane entrance of SYP continue. The ground freezing as well as the excavation are underway at the remaining 20-metre passenger adit to facilitate the subsequent tunnel

lining construction. Architectural builder works and finishes, building services, and electrical and mechanical as well as escalator installation in the station are also underway.

5. As the Ki Ling Lane entrance is still under construction, temporary walls have been set up inside SYP to separate the construction site from operational areas so that the construction activity would not affect the station operations and the passengers.

Train Service

6. The Island Line service was extended to Western District with the opening of the three new stations. The overall train service is being operated smoothly. To cater for the growing passenger demand, the Island Line train service was progressively enhanced on Friday and Saturday nights as well as for most of the daytime on Sundays with a total of 63 additional trips per week, starting from 29 March 2015.

Fine-tuning Adjustments and Rectifications

7. Similar to previous new railway projects, teething problems will be encountered and some fine-tuning adjustments and rectifications are required during the initial operation period. The Corporation has closely monitored the performance of train service and station facilities to make necessary enhancements while also minimising any inconvenience caused to passengers.

8. With respect to the water seepage observed in the three stations, in-depth inspections were carried out and immediate rectification measures were taken by means of injection of grout and diverting the seepage water into a drainage system to ensure the safety of passengers. There was no adverse effect on the structural integrity of the stations, station operations as well as train services. All future possible seepage would be continuously monitored and remedied accordingly. The final investigation report, taken into consideration comments from Buildings Department (BD), has been submitted to BD on 31 July 2015.

Publicity and Promotion

9. Publicity and promotional programmes are in place to familiarise the community and passengers with the new station facilities and services. The Corporation will keep listening and responding to feedback from the stakeholders and local community.

10. Members are invited to note the above information.

MTR Corporation Limited
August 2015

Annex 5

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Progress Update on South Island Line (East)
(As of 30 June 2015)

Purpose

This paper aims to provide the works progress of the South Island Line (East) (SIL(E)) project as of 30 June 2015.

Background

2. SIL(E) is a 7-kilometre, medium-capacity railway that connects the Southern District with the existing railway network in Hong Kong through tunnels and viaducts via stations at Ocean Park, Wong Chuk Hang, Lei Tung and South Horizons. A train maintenance depot is located in Wong Chuk Hang.

3. To enhance convenience for the residents of Southern District, the project also includes the construction of a number of essential public infrastructure works in addition to the railway. These include the construction of a public transport interchange under Wong Chuk Hang Station; improvement of the existing road network in the vicinity of Ocean Park and Wong Chuk Hang stations; the construction of a covered footbridge connecting Wong Chuk Hang Station with the adjacent industrial area; the construction of a covered footbridge crossing Ap Lei Chau Bridge Road to link the western part of Ap Lei Chau Estate to Yi Nam Road near the Precious Blood Primary School; and the construction of a pedestrian link to the Aberdeen Channel Promenade, etc.

4. Construction of SIL(E) commenced in 2011. Upon commissioning, it will provide convenient and fast railway service for the approximately 350,000 residential and working population in Southern District. The journey time from Admiralty to Ocean Park will be reduced from the current 25 to 45 minutes to just 4 minutes. The train ride from Admiralty to South Horizons will take

approximately 11 minutes. The frequency of train service will be about 3 minutes during peak periods.

Project Progress

5. As of 30 June 2015, the overall works for SIL(E) are 87.4% completed, in line with the programme for the revised target opening at end 2016. The construction works of Nam Fung Tunnel are substantially completed and the construction works for Ap Lei Chau Tunnel have been completed. Construction works for the viaduct and noise barriers of Wong Chuk Hang section are also substantially completed.

6. With the exception of the entrance at Lei Tung Estate of Lei Tung Station, the construction of the four new stations and their entrances in Southern District including Ocean Park Station, Wong Chuk Hang Station, Lei Tung Station and South Horizons Station is generally in line with the original programme. As mentioned in the report of the progress update on SIL(E) to the Subcommittee on 6 March 2015, the shaft structure works at the Lei Tung Estate entrance of Lei Tung Station are taking longer than anticipated due to the ground conditions at formation level and labour resource issues. The completion of the entrance structure and fitting-out works as well as the installation of passenger lifts will continue until the first half of 2016 rather than the original plan of the second half of 2015. Meanwhile, although challenges remain for the extension works of Admiralty Station, SIL(E) is still targeted to open at the end of 2016.

7. The Corporation has completed a further review of the cost estimate for the project according to its revised works programme. The latest estimate of the construction cost of SIL(E) has been further revised upward from HK$15.2 billion[1] (money-of-the-day prices) to HK$16.9 billion (money-of-the-day prices) due to the complexity of the project and continued challenges encountered. As SIL(E) is an "ownership" project, the Corporation will bear the relevant additional cost in accordance with the "ownership" approach. As the Admiralty Station extension works include works for both SIL(E) and Shatin to Central Link ("SCL"), the construction cost of the station extension as revised will be shared between the Corporation and the Government proportionately. The Corporation will bear 30% of the station extension construction cost while the Government will bear the remaining 70%.

[1] As mentioned in the submission to the Subcommittee in March 2015, the estimated capital cost of SIL(E) in 2011 was $12,400 million (in December 2009 prices). MTRCL advised in November 2014 that the cost had increased to $15,200 million (in money-of-the-day prices).

Track and Train-related Works

8. The extension works of Admiralty Station as part of the SIL(E) project include the construction of platforms for the SIL(E) and Shatin to Central Link (SCL) at Harcourt Garden as well as two overrun tunnels for SCL, each with an approximate length of 200 metres. Excavation for the platforms and tunnels of SIL(E) and the tunnels of SCL has been completed. Meanwhile, the cut-and-cover excavation for Admiralty Station extension is substantially completed and construction of the station structure is in progress (details in paragraphs 12 to 14). The structural works, fitting-out and E&M works for the Hong Kong Park Ventilation Building are in progress.

9. At Nam Fung Tunnel, the lining works and the construction of the transition structure that connects to the viaduct section are substantially completed.

Nam Fung Tunnel permanent lining works are substantially completed

10. All track-laying works, the installation of overhead lines and trackside auxiliary services have been completed from Ocean Park Station to South Horizons Station and are progressing in the section between Ocean Park Station and Admiralty Station. The installation of noise barriers for the viaduct section is substantially completed.

11. The 10 new SIL(E) trains, which are currently stabled at Wong Chuk Hang Depot, have started testing on the running track between Wong Chuk Hang and South Horizons Stations since April 2015.

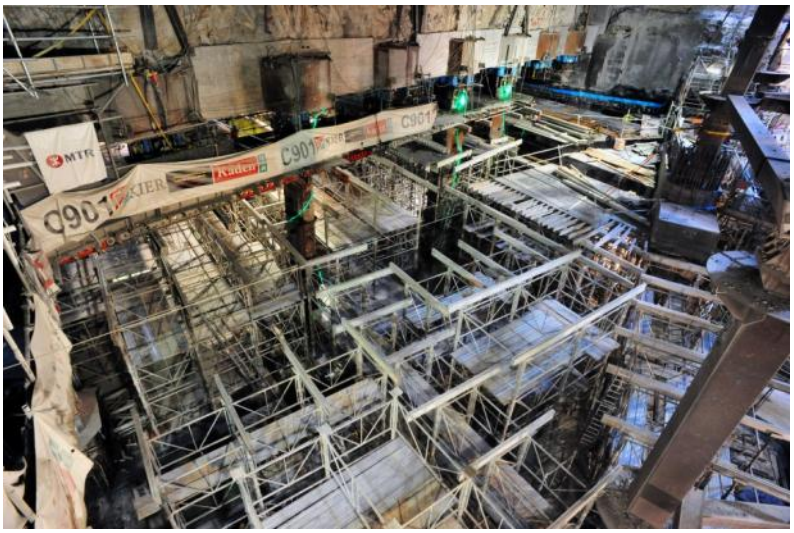
Train testing on the running track between Wong Chuk Hang Station and South Horizons Station has commenced

Station Structural Works

12. Admiralty Station is undergoing expansion to become an interchange station for four railway lines including the Island Line, Tsuen Wan Line, SIL(E) and SCL. There are three levels at the existing Admiralty Station including one concourse level and two platform levels serving passengers on the Tsuen Wan Line and Island Line. The extension works of Admiralty Station are being carried out under Harcourt Garden, east of Admiralty Station, with three additional levels being constructed below the existing station. The cut-and-cover excavation is substantially completed and construction of the station structures is now progressing. Excavation continues at the eastern end of the underpinning zone of the Island Line, while excavation for the western and central sections is now completed with structural works in progress.

13. The underpinning works below the tunnel structure of the existing Island Line require the installation of temporary steel beams and columns to support the tunnel structure of the existing Island Line while the in-situ rock is excavated incrementally from beneath the structure. Great care is needed to maintain the safety of the railway tunnel structure and ensure that there is no impact on the train services of Island Line. The construction team has faced significant challenges related to access constraints, tight working space, and at some locations geological features that have required more temporary support works. These issues have contributed to the delay to this part of the critical works. The team continues to use its utmost effort to overcome these difficulties. Currently, the underpinning excavation works are substantially completed in the critical area and are continuing in the remaining area. As of 30 June 2015, the underpinning excavation works are 89% completed. There is still challenge on

the outstanding excavation work in the underpinning area although uncertainty has been reduced considerably.



Underpinning works for Island Line tunnel at Admiralty Station

14. The excavation and blasting for the cavern and SIL(E) platform tunnels that make up the southern part of the Admiralty Station extension have been completed and structural works are in progress.

15. Following the completion of the structural works for Ocean Park Station, Wong Chuk Hang Station and Wong Chuk Hang Depot, fitting-out and E&M works have been substantially completed. The majority of the track areas inside the Depot have been energised for the testing of trains.

16. Structural works for Lei Tung Station (except Entrance B) are substantially completed and fitting-out works and E&M works are in progress. At Entrance B of Lei Tung Estate, construction of the shaft structure and the lining works for the pedestrian adit are in progress. Unforeseen adverse ground conditions encountered at the shaft formation level has caused delay to the commencement of structural works and ongoing progress is also being hampered by the availability of labour resources. As a result, the construction of the entrance shaft structure at Lei Tung Estate is taking longer than anticipated when compared with that of the other station structures. The completion of the entrance structure and fitting-out works as well as the installation of passenger lifts is expected to continue into the first half of 2016 but the station will still be ready for the overall opening schedule of SIL(E) which is targeted for the end of 2016.

Structural works of Lei Tung Station entrance at Lei Tung Estate

17. At South Horizons Station, excavation works have been completed and structural works for the station box under the temporary traffic deck have been completed with fitting out works and E&M works in progress. Structural works for the station entrances are progressing steadily. Structural works for the End Plant Building at Yuk Kwai Shan have been completed and fitting out works and E&M works are underway, while the structural works for the ventilation building at Lee Wing Street are substantially completed.

Station structural works under the temporary traffic deck at South Horizons

Conclusion

18. Members are invited to note the above information.

MTR Corporation Limited
August 2015

Annex 6

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Progress update of the Kwun Tong Line Extension
(As of 30 June 2015)

Background

The Kwun Tong Line Extension (KTE) project is a 2.6-kilometre underground extension of the existing Kwun Tong Line from Yau Ma Tei to Whampoa, with an intermediate station at Ho Man Tin. Ho Man Tin Station being constructed under KTE will be an interchange station with the future Shatin to Central Link (SCL). Construction of the KTE project commenced in 2011.

2. To facilitate convenient access to railway service for local commuters, essential public infrastructure works are being constructed alongside the railway works. These include a series of pedestrian walkways connecting Ho Man Tin Station to Oi Man Estate and Ho Man Tin Estate, a covered footbridge across Chatham Road North, and public transport facilities at Chung Hau Street.

3. In 2011, the estimated capital cost of KTE was $5.3 billion (in December 2009 prices). In view of the construction complexity and continued challenges encountered by the project, the cost has been reviewed and adjusted upward to $7.2 billion (money-of-the-day prices). As KTE is an "ownership" project, the Corporation will bear the relevant additional cost in accordance with the "ownership" approach. As Ho Man Tin Station includes the works for KTE and SCL, the construction cost of the station as revised will be shared by the KTE and the SCL projects proportionately. The Corporation will bear about 26% of the construction cost of the station while the Government will bear the remaining 74%.

Project Progress

4. As of 30 June 2015, the overall works for KTE are 81% completed compared to the planned completion rate of 83%. Approximately 88% of civil works and 57% of the electrical and mechanical (E&M) works have been completed respectively. With the expected breakthrough of the platform tunnel of Whampoa Station in July, it is anticipated that the train service of KTE will commence in the 3rd or 4th quarter of 2016.

5. As mentioned in the previous report of the progress update on KTE to the Subcommittee in May 2015, due to the variable mixed ground condition, limited working space and working hours, the construction of the platform tunnel between the East and West Concourses of Whampoa Station remains the most challenging and critical works to the programme of the project at the moment.

Railway Tunnelling and Track Works

6. The structural works of railway tunnels between Yau Ma Tei and Whampoa are substantially completed while installation of overhead lines and trackside auxiliaries continues. Track-laying works are progressing in various locations in the railway tunnels with 53% completed. It is expected that the majority of the track works will be completed in the third quarter of 2015.

Structural works of railway tunnels between Yau Ma Tei and Ho Man Tin

Ho Man Tin Station and Essential Public Infrastructure Works

7. Ho Man Tin Station will serve as the future interchange station between the Kwun Tong Line and the SCL. The 8-storey station was topped out in June 2015, providing a total area of 56,600 square metres for both railway lines. The station is a cruciform-shaped design with dedicated interchanging escalator connections, interchange concourse and entrance connections at some levels.

8. E&M equipment assembly, building services and system-wide installation works are in full swing. Installation of escalators has commenced in the station while other major E&M equipment including chillers and platform screen doors are ready for installation. Building services installation is progressing at the station concourse, SCL platform, plant room levels and interchange concourse.

9. In addition, works trains are in operation from Tsuen Wan Depot to the overrun tunnel of Yau Ma Tei Station during non-traffic hours to facilitate the delivery of E&M materials to the Ho Man Tin Station work site. External drainage and utilities connection works continue in the vicinity of the station.

Ho Man Tin Station has been topped out.

10. About 76% of the pedestrian link system for Ho Man Tin Station has been completed. The deck structure of the public transport facilities at Chung Hau Street was generally completed while excavation of the pedestrian subways underneath Fat Kwong Street and Chung Hau Street is well advanced. These facilities will be opened for public use in conjunction with the opening of Ho Man Tin Station. For the pedestrian link system connecting Ho Man Tin Station to Oi Man Estate and Sheung Lok Street, and the covered footbridge across Chatham Road North connecting to Ho Man Tin Station, their structural works and architectural finishes are underway and they are expected to be completed in the third quarter of 2015 subject to the inspection results by relevant government departments.

Whampoa Station and tunnelling works

11. Due to the highly variable ground condition and limited working space, construction of the platform tunnel between East and West Concourse of Whampoa Station has taken longer than expected. In view of noise complaints received from residents during excavation, the Corporation had shortened the working hours to between 7:00 am and 11:00 pm instead of 24 hours. This is causing further impacts to the programme of KTE. As of the end of June 2015, the excavation of the platform tunnel is 84% completed. To expedite construction of the platform tunnel, excavation works are being carried out from both concourses in parallel and construction sequences of the station has been revised to allow more parallel works fronts.

Excavation for Platform Tunnel of Whampoa Station

12. The structural works continue at East and West Concourses as well as the integrated entrances connecting the shopping malls at Whampoa Garden. Tunnel lining works of the overrun tunnel at Wan Hoi Street is in progress and anticipated to be completed in the third quarter of this year. Additional manpower and equipment have been deployed at various work fronts of Whampoa station to enhance production and works efficiency.

13. To facilitate construction of the integrated structure for lifts, ventilation shaft and emergency evacuation access beneath Shung King Street, the drainage and utilities reinstatement works will be carried out in stages, and a temporary closure of two traffic lanes on a section of Shung King Street is required in the third quarter of 2015 for a few months. During the period, traffic within the closed section of Shung King Street will be diverted to Tak Ting Street. However, the pedestrian walkway will remain open and emergency vehicular access will be maintained for emergency use. Before the implementation of the road closure, a trial run will be carried out so that the temporary traffic management scheme could be adjusted or fine-tuned to suit the road condition if considered necessary.

14. Despite the extra effort and additional appropriate measures put into planning and construction, the construction of Whampoa Station remains the most critical and challenging part of KTE programme. Given the current work progress, KTE train service is expected to commence in the 3rd or 4th quarter of 2016.

Conclusion

15. Members are invited to note the above information.

MTR Corporation Limited
August 2015