

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways
Progress Update of the Construction of the Shatin to Central Link
(As at 30 September 2016)

Introduction

This paper reports to Members on the progress of the main construction works of the Shatin to Central Link (“SCL”) as at 30 September 2016.

Background

2. SCL, with a total length of 17 kilometres, consists of the following two sections –

- (a) Tai Wai to Hung Hom Section: this is an extension of the Ma On Shan Line from Tai Wai via Southeast Kowloon to Hung Hom where it will join the West Rail Line; and
- (b) Hung Hom to Admiralty Section: this is an extension of the East Rail Line from Hung Hom across the Victoria Harbour to Wan Chai North and Admiralty.

3. SCL will have ten stations. Apart from bringing improvements to the existing Tai Wai Station, the SCL project will involve construction of new stations or extension of existing stations at Hin Keng, Diamond Hill, Kai Tak, To Kwa Wan, Ma Tau Wai, Ho Man Tin, Hung Hom, the Hong Kong Convention and Exhibition Centre, and Admiralty. It is a territory-wide strategic railway project (alignment layout at **Annex 1**). Admiralty Station and Ho Man Tin Station will become integrated stations providing interchange service to passengers of SCL and South Island Line (East)(“SIL(E)”), as well as passengers of SCL and Kwun Tong Line Extension (“KTE”) respectively.

4. The Approved Project Estimate for the entire SCL project is **\$79,800 million**¹ (in money-of-the-day prices) and the project is funded by the Government under the “concession approach”. The MTR Corporation Limited (“MTRCL”) is entrusted by the Government to carry out the construction of the project. On 18 February 2011, the Finance Committee of the Legislative Council approved the funding applications for “63TR – Shatin to Central Link – construction of railway works – advance works” and “64TR – Shatin to Central Link – construction of non-railway works – advance works” with a total of about **\$7,700 million** (in money-of-the-day prices). Thereafter, the Government and MTRCL entered into an agreement for entrusting to the latter the advance works of SCL at the expanded Admiralty Station and Homantin Station while implementing SIL(E) and KTE respectively. The advance works commenced in May 2011.

5. Subsequently, on 11 May 2012, the Finance Committee of the Legislative Council approved the funding applications for “61TR – Shatin to Central Link – construction of railway works – remaining works” and “62TR – Shatin to Central Link – construction of non-railway works – remaining works” with a total of about **\$71,400 million** (in money-of-the-day prices). Thereafter, the Government and MTRCL entered into an agreement for entrusting construction, testing and commissioning of the main works of SCL to the latter. MTRCL has been entrusted to provide management and monitoring service to the SCL project. The main works commenced in July 2012. According to the agreement for the main works of SCL, the original target commissioning date for the “Tai Wai to Hung Hom Section” is December 2018 and the original target commissioning date for the “Hung Hom to Admiralty Section” is December 2020.

Monitoring Mechanism of the Government

6. According to the entrustment agreement, MTRCL is responsible for the overall management of the SCL project. The Government maintains a mechanism to closely monitor the work of the MTRCL, which includes a Project Supervision Committee (“PSC”) led by the Director of Highways (“DHy”). The PSC holds monthly meetings to review the progress of the project and monitor the

¹ The Approved Project Estimate for the entire SCL project comprises (i) Protection Works (**58TR** Shatin to Central Link – construction of railway works – protection works and **59TR** Shatin to Central Link – construction of railway works – protection works in Wan Chai Development Phase II) of about \$700 million (in money-of-the-day prices); (ii) Advance Works (**63TR** and **64TR**) of about \$7,700 million (in money-of-the-day prices); and (iii) Main Works (**61TR** and **62TR**) of about \$71,400 million (in money-of-the-day prices).

procurement activities, post-tender cost control and resolution of contractual claims. The MTRCL has to submit monthly progress reports to the Highways Department (“HyD”) to report the latest progress and financial position of the SCL project.

7. Moreover, an officer at Assistant Director level of the HyD holds monthly Project Coordination Meetings with the General Managers and Project Managers of the MTRCL to monitor different aspects of the implementation of the SCL project, including the timely completion of land-related matters, the handling of issues in relation to the design, construction and environmental fronts that may have potential impact on the progress and programme of the SCL project, as well as the handling of interfacing issues with other projects.

8. Meanwhile, two officers at Chief Engineer level hold monthly Project Progress Meetings with the site supervision staff of the MTRCL on major civil and E&M works. In case of delays, the MTRCL would report delay recovery measures at such meetings.

9. The HyD has also employed a monitoring and verification (M&V) consultant to assist in the monitoring work and undertake regular audits. The M&V consultant will review the works progress and advise the HyD of any potential risk of delay. It will also offer comment to the HyD on the appropriateness of MTRCL’s proposed delay recovery measures.

10. The DHy meets with the Secretary for Transport and Housing (STH) on a monthly basis and submits reports to report the progress of the project. Where necessary, he also reports to the STH any significant issue relating to the implementation of the project.

Advance Railway Works of the Shatin to Central Link (63TR)

11. Upon expansion, Admiralty Station will become an integrated station serving passengers of SCL and SIL(E). Hence, except for the construction cost (about \$300 million in money-of-the-day prices) of the overrun tunnel of SCL which would be fully absorbed by the SCL project, the construction cost of the expansion works 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 (E&M) works for the portion of SCL at Admiralty Station. Besides, the SCL project has to share about \$350 million (in money-of-the-day prices) for the construction costs of the portion of ventilation facilities 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) for the advance works at Admiralty Station. MTRCL advised the HyD on 12 August 2015 that the 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 the advance works of SCL has to be adjusted upward from about \$3,350 million to about \$4,650 million with an increase of about \$1,300 million. Having examined the latest cost estimate submitted by MTRCL together with the M&V consultant, the HyD opined that there was room for reduction of the relevant cost to be borne by the advance works of SCL (63TR) at the expansion works of Admiralty Station. After comprehensive assessment, the HyD and the M&V consultant opined that it was still necessary to increase the Approved Project Estimate (“APE”) of the advance railway works of SCL by \$847.7 million, from the original \$6,254.9 million to \$7,102.6 million (in money-of-the-day (MOD) prices), in order to meet the additional construction costs.

12. Ho Man Tin Station is also an integrated station serving passengers of both SCL and KTE. The construction cost of Ho Man Tin Station is also 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 advance works of SCL at Ho Man Tin Station. MTRCL advised HyD on 12 August 2015 that the relevant construction cost of Ho Man Tin Station shared by SCL would remain within the budget under the SCL advance railway works (63TR).

13. In view of the abovementioned reasons, the APE of “63TR – Shatin to Central Link – construction of railway works – advance works” needs to be adjusted upward to meet the additional expenditure of the relevant advance works. As such, we will seek the support of the Members of the Subcommittee at its meeting scheduled for December 2016 for an increase² in the APE of the advance railway

² For the proposed increase in the APE of “63TR – Shatin to Central Link – construction of railway

works of SCL by \$847.7 million, from the original \$6,254.9 million to \$7,102.6 million (in money-of-the-day (MOD) prices). Details can be referred to another paper submitted to the Subcommittee and hence are not repeated here.

Latest Progress of the Main Works

14. The progress report of the SCL project as at 30 September 2016 submitted by MTRCL is at **Annex 2**. The analysis and supplement made by HyD on the progress report are provided below.

Tai Wai to Hung Hom Section

Shatin Section (Section of Railway between Tai Wai Station and Ma Chai Hang, Wong Tai Sin, including Hin Keng Station and Modification of Station Platforms of Ma On Shan Line)

15. The progress of Hin Keng Station, the associated connecting elevated and at-grade track works and the modification of station platforms of Ma On Shan Line are generally in line with the planned programme. The Automatic Platform Gates (“APG”) at Tai Wai Station have been in operation since February 2016, while the installation works for the APG at other stations of Ma On Shan Line continue. Building services works, E&M works and track laying works for Hin Keng Station and the connecting tunnel are still in progress.

16. During the period from January 2014 to September 2014, the excavation works of Hin Keng to Ma Chai Hang Tunnel had been slightly behind schedule due to unfavorable ground conditions. MTRCL has taken various measures to speed up the works so as to recover some of the delays in the tunnel excavation. Currently, water-proofing system installation works and tunnel lining construction inside the Hin Keng to Ma Chai Hang tunnel were completed. Track laying works are in progress.

works – advance works”, please refer to the paper submitted by THB to the Subcommittee in December 2016.

Wong Tai Sin Section (Section of Railway between Ma Chai Hang, Wong Tai Sin and Kai Tak Station, including Diamond Hill Station)

17. The excavation, water-proofing system installation and tunnel lining construction of the two sections of tunnels from Kai Tak Station to Diamond Hill Station and from Diamond Hill Station to Ma Chai Hang were completed. Track laying works are in progress.

18. The construction of the main structure of Diamond Hill Station was substantially completed. Building services works, E&M works and track laying works for the station are still in progress. Besides, the construction of emergency access point at the junction of Wong Tai Sin Road and Sha Tin Pass Road continues. The construction of the Public Transport Terminus adjacent to the emergency access point continues, and the progress is generally in line with the planned programme. It is anticipated that the structure works could be completed by end 2016. The drill and blast works for the ventilation tunnel starting from the works site at Ma Chai Hang Recreation Ground were completed, and tunnel lining construction is in progress.

19. Regarding the improvement works of the pedestrian connecting facilities between Tsz Wan Shan area and Diamond Hill Station of SCL (the layout plan of the pedestrian connecting facilities at **Annex 3**), 6 out of the 15 items of facilities have already been opened for public use since January 2016. The lifts next to Po Kong Village Road and Fung Tak Road footbridges were opened in end October 2016, while the lift at Lung Poon Street opened in early November 2016. Another 5 items are anticipated to be gradually opened to public from the end of 2016 to early 2017, including the lift at Ching Hong House of Tsz Ching Estate, the staircase and escalator at Tsz Lok Estate near Tsz Wan Shan Shopping Centre, the lift next to Tsz Lok Estate Ancillary Facilities Block, as well as the two covered walkways at Po Kong Village Road. Regarding the remaining two items, i.e. the footbridges along Wan Wah Street and Yuk Wah Street, it is anticipated that they would be completed in the third quarter of 2017.

Kowloon City Section (Section of Railway between Kai Tak Station to Ho Man Tin Station, including To Kwa Wan Station and Ma Tau Wai Station)

Kai Tak Station

20. Kai Tak Station is located inside the Kai Tak Development Area. The construction of the main structure of the station, and the tunnel structures between Kai Tak Station and To Kwa Wan Station were completed. The fitting-out works, E&M works and track laying works in the station and tunnels are in progress. The fitting-out works of the entrances are also underway.

To Kwa Wan Station

21. In accordance with the recommendation of the Environmental Impact Assessment Report of SCL, MTRCL carried out the archaeological work at the designated site area before the commencement of the construction of To Kwa Wan Station. Under the close supervision of the Antiquities and Monuments Office (AMO), the independent archaeological team engaged by the contractor of the SCL carried out the archaeological work between November 2012 and December 2013.

22. Over 500 coins mainly dated to the Song dynasty were discovered while piling works were carried out at the location of the launching shaft for tunnel boring machines. MTRCL reported the discovery immediately to AMO. Upon request and under the close supervision of AMO, the independent archaeological team carried out the expanded archaeological work at the launching shaft area in December 2013. At the same time, MTRCL suspended the construction works in the area where archaeological work was ongoing, except for those relating to the archaeological excavation in order not to affect the archaeological work. It had caused a delay to the progress of works. As a result, some labour, machinery and equipment of the contractor had to be left idle.

23. The expanded archaeological work was completed in April 2014. However, a square-shaped stone well of the Song-Yuan period and stone building remnants (i.e. items 5 and 6 of the archaeological features at **Annex 4**) were discovered at the T1 Area which was of about 400 square metres at the south-western corner of the TBM launching shaft. The construction work within the T1 Area could not resume and thus affecting the construction of the entire TBM launching shaft and the subsequent tunneling works. Under the agreement

of Antiquities Advisory Board, MTRCL had implemented appropriate measures for the protection of the stone well in the T1 area and other stone building remnants in July 2014. The excavation of launching shaft could then resume. In order not to affect the remnants within T1 Area, MTRCL had to alter the temporary support structure design for the TBM launching shaft and re-sequence the construction of the launching shaft. It had caused further delay to the construction of the launching shaft.

24. Upon the request of AMO, the archaeological work was further expanded to the entire works site of To Kwa Wan Station. The further expanded archaeological work commenced in April 2014 and completed in September 2014. In order not to affect the archaeological work and discoveries, MTRCL had to suspend the construction works within the archaeological work area. HyD worked with MTRCL to explore measures to adjust the construction sequence, modify the original construction method, and to devise a suitable revised scheme for the design of To Kwa Wan Station with a view to preserving the discoveries while minimising the impact on the works.

25. The Antiquities Authority (i.e. the Secretary for Development), after considering the views of the Antiquities Advisory Board, the Legislative Council and the Kowloon City District Council, decided on the conservation options on 8 December 2014 with most of the archaeological discoveries preserved in-situ. The archaeological remnants to be preserved in-situ have to be protected by backfilling of protective materials. Under the close supervision of AMO, the protective works for the remnants to be preserved in-situ were completed in May 2015. Regarding Well J2 and the water channel (i.e. item 4 of the archaeological features at **Annex 4**), they were removed piece by piece by hand in March 2015 after detailed recording and under the close supervision of AMO. The components are stored properly for future reinstatement.

26. Moreover, as we stated in the papers submitted to the LegCo Subcommittee on Matters Relating to Railways (“RSC”) and Panel on Development in November 2014, due to the preservation in-situ of the remnants at and in the vicinity of Adit C connecting the station and Pak Tai Street (i.e. items 6 to 10 of the archaeological features at **Annex 4**), the entire alignment of the adit would be seriously affected. It would be necessary to find a suitable alternative alignment for the construction of the adit. Since the area around the adit has been designated as a temporary works site for the construction of the station and the railway tunnel. It is anticipated that the area can be made available for

further investigation by the relevant department when the respective works are completed in the second half of 2017. In other words, Adit C connecting the station and Pak Tai Street would not be completed at the same time as To Kwa Wan Station. A temporary access at grade would be required to connect the station entrance. In case no suitable alternative alignment could be identified eventually as a result of further archaeological discoveries or other site constraints, residents in the vicinity of Pak Tai Street might need to use the existing pedestrian crossing facilities at Ma Tau Chung Road to gain access to To Kwa Wan Station. MTRCL is exploring the feasibility of adding an at-grade crossing at a suitable location of Song Wong Toi Road (see **Annex 5**) for reducing the walking distance between Pak Tai Street and the station entrance.

27. The construction works of To Kwa Wan Station fully resumed in March 2015. The excavation work for the station was substantially completed in December 2015. MTRCL is carrying out the structural works of the station in full swing. Construction of the station base slab has been substantially completed, while the construction of the platform and concourse levels is in progress. The TBM works for the tunnel between To Kwa Wan Station and Ho Man Tin Station was completed in August 2016. As at 30 September 2016, MTRCL maintained that the archaeological works would result in a minimum delay of at least 11 months and a minimum additional cost of about \$4.1 billion to the “Tai Wai to Hung Hom Section” of SCL. However, the ultimate implication is subject to the final assessment of MTRCL and the verification of HyD.

Ma Tau Wai Station

28. Ma Tau Wai Station is an underground station beneath Ma Tau Wai Road. The station is being constructed by a top-down method. To cater for the construction of the station, the traffic diversion scheme implemented at a section of Ma Tau Wai Road between Chi Kiang Street and Sheung Heung Road continues. Two southbound traffic lanes and a single northbound lane would be maintained. MTRCL is carrying out the structural works of the station in full swing. Construction of the station concourse and upper platform was completed in November 2015 and March 2016 respectively. It is anticipated that the construction of the station lower platform would be completed by the first quarter of 2017. The progress is generally on schedule.

Hung Hom Section (Section of Railway between Ho Man Tin Station and Hung Hom Station, including the modification works of Hung Hom Station and associated tunnelling works)

29. As the tunnelling works of SCL to the north of Hung Hom Station have to be carried out on a very busy road and along the operating East Rail Line, it is necessary to exercise due care to prevent the construction from affecting the busy road sections nearby. Temporary traffic diversions along Chatham Road North for the tunnelling works were fully implemented at the end of 2014. So far, the traffic has been generally smooth. For the construction work of the section between Ho Man Tin Station and Hung Hom Station, construction of tunnel structural work has been substantially completed. Backfilling works are in progress. For the section near Oi Sen Path south of Princess Margaret Road southbound, installation of noise enclosure continues. To avoid affecting the daily operation at East Rail, the work could only be carried out at non-service hours. MTRCL would closely monitor the noise mitigation measures taken by the contractors during night-time construction and minimise the impact on nearby residents and traffic. For the section near Princess Margaret Road connecting the East Rail Line and the new platforms of Hung Hom Station, excavation works have been substantially completed and tunnel structural works continue.

30. To tie in with the SCL project, part of the foundation of existing podium of Hung Hom Station is required to be modified in order to provide space for the construction of new platforms and tunnels. Due to the complicated works, part of works sequence had to be carried out in a prudent manner and taking into account the actual situation of the foundation and underground utilities. During construction, unfavourable geological condition was encountered, thereby leading to delay of the works. MTRCL and the contractor had adjusted the work sequences and deployed additional machinery and manpower in order to recover some of the delay of the works at Hung Hom Station. The current progress is generally on schedule.

Hung Hom to Admiralty Section

Cross Harbour Section (Section of the tunnel across Victoria Harbour)

31. The main works of the Cross Harbour Section continue. The contractor is carrying out tunnel excavation works in the temporary marine cofferdam at

Hung Hom landfall. For the preparation for the future placement of immersed tube tunnel units, the dredging works at the seabed of Victoria Harbour and Causeway Bay Typhoon Shelter (“CBTS”) continue. Also, the construction of the immersed tube tunnel units continues. The current progress is generally on programme. The construction of the immersed tube tunnel units was about 80% completed as at 30 September 2016.

32. Due to the unfavourable geological conditions encountered during the tunnel excavation works within the temporary cofferdam at Hung Hom landfall, the actual amount of rock excavated is more and harder than expected, thus increasing the difficulty of excavation works and leading to a decrease in the excavation efficiency. The contractor has to accelerate the excavation progress by deploying more machinery and manpower to mitigate the delay to the works, thus causing a certain impact on the construction cost.

Hong Kong Island Section (Section of Railway between Wan Chai North and Admiralty Station, including Exhibition Station)

33. The advance works for the Hong Kong Island Section continue. The foundation works for the re-provisioning of Harbour Road Sports Centre (HRSC) were completed and construction of superstructure is in progress. The construction of Exhibition Station in this location could only proceed after the opening of new HRSC. Besides, the modification works for the foundation of flyovers at the garden near the portal of Cross-Harbour Tunnel were completed.

34. The tunnel excavation works of the Hong Kong Island Section are very difficult. For the section from CBTS to Exhibition Station, the tunnels are located at shallow depth, and they would pass under the heavily trafficked Gloucester Road eastbound near the portal of Cross-Harbour Tunnel. It was also necessary to resolve the challenges arising from the congested underground obstructions and the uncharted, complicated underground utilities network at Wan Shing Street and Marsh Road. As a result, the contractor had to deploy additional resources to overcome the difficulties. In addition, the tunnel section from Convention Avenue to Admiralty Station will pass underneath the heavily trafficked Harcourt Road and close to the tunnels of the busy MTR Tuen Wan Line. To reduce the risks to the works and the public, it was necessary to remove the underground obstructions found during construction and carry out the associated advance works along the tunnel alignments before the tunnel excavation by TBM.

During construction, it was necessary to closely monitor and devise emergency measures to ensure safety. The excavation works of the up-track TBM tunnel from CBTS to Exhibition Station were completed in July 2016, while the excavation works of down-track TBM tunnel were also completed in November 2016. Besides, the excavation of the launching shaft for the other TBM installations at Fenwick Pier Street work site was completed in September 2016. The construction of the diaphragm wall to the west of the launching shaft is still in progress, so as to facilitate the cut and cover tunnel construction in future.

35. At the work site of Exhibition Station at the ex-Wan Chai Ferry Pier Public Transport Interchange, the construction of diaphragm walls and pipe piling works continues. To allow flexibility for the construction of convention facilities above Exhibition Station, it is necessary to carry out enabling works for the topside development. Hence, the construction of the station becomes more complicated and additional piles have to be constructed. Based on the currently available information on the geological condition, it is initially estimated that this would result in a delay of at least 5 months for the construction of Exhibition Station and an increase in construction cost.

36. Regarding the large metal object found on the seabed within the reclamation area under Wan Chai Development Phase II (“WDII”), the Civil Engineering Development Department (“CEDD”) removed it from the reclamation site in June 2015. The reclamation works at the location concerned were completed and associated works are underway. Originally, the reclaimed land would be handed over to the contractor of SCL at the end of December 2016. As the discovery of the metal object had affected the progress of reclamation works there, CEDD indicated that the handover date of part of the works area would still be deferred by 7 months. HyD and MTRCL will continue to liaise with CEDD on the handover arrangement of works areas.

37. In addition, as mentioned in previous progress reports, CEDD estimated that the handover date of the associated critical work sites adjoining the junction of Expo Drive East and Convention Avenue would be deferred by about 6 months. For a period of time, CEDD has been implementing measures to catch up with part of the works progress and most of the work sites could be handed over to MTRCL in accordance with the original schedule. It is estimated that the original delay of 6 months for the handover dates of other critical work sites would also be shortened. For those remaining work sites which could not be handed over as scheduled, HyD and MTRCL will continue to discuss further with CEDD on

measures to minimise the risk of delay to SCL as far as possible.

38. Since parts of Exhibition Station are located underneath the busy and narrow roads in Wan Chai North, they had posed constraints of different extents on the planning works at the preparatory stage, such as site arrangement, required works sequence and the associated integrated temporary traffic management schemes etc. Moreover, the main construction works for Exhibition Station are highly complicated and involve a wide extent of site. For instance, the demolition of the ex-Wan Chai North public transport interchange, ex-Wan Chai swimming pool and the existing Harbour Road Sports Centre, prior to the construction of Exhibition Station, could only proceed upon the completion of the re-provisioning works. As the services provided by the above facilities could not be disturbed, detailed site investigation required for detailed design could not be conducted prior to the re-provisioning of the facilities. As such, the uncertainties of the geological conditions in these areas may affect the progress of works. Furthermore, diversion of Fleming Road box culvert and the congested underground utilities will also be required to facilitate the construction of part of Exhibition Station that runs across the road. It is not possible to close the said road to carry out trial trenches for verifying the number and location of the underground utilities there before the actual construction works. In addition, there are uncertainties on the accuracy of the underground utility records. They increased construction difficulties and uncertainties, thereby posing certain risks to the works progress and construction costs. It is anticipated that the overall 6-month delay in the completion of Exhibition Station and the “Hung Hom to Admiralty Section” of SCL will remain. The commissioning date of the “Hung Hom to Admiralty Section” would then be deferred to 2021. Besides, apart from the additional construction cost arising from the enabling works at Exhibition Station, the construction delay as a result of the deferred handover of work sites may also lead to additional construction cost.

Conclusion

39. In view of the above assessments as mentioned in paragraphs 15 to 38, taking into account the delay of about 11 months to the “Tai Wai to Hung Hom Section” of SCL arising from the archaeological works, archaeological discoveries and conservation options for archaeological features at To Kwa Wan Station earlier on, HyD will co-ordinate and oversee the construction of SCL so that MTRCL could try its best to recover some of the delay to the “Tai Wai to Hung

Hom Section”, with a view to commissioning the “Tai Wai to Hung Hom Section” in 2019 as far as possible. Due to the impact of site handover arrangement of WDII and to allow flexibility for the construction of new convention facilities above Exhibition Station, the commissioning date of the “Hung Hom to Admiralty Section” will be deferred to 2021.

40. MTRCL is conducting a cost review of the main works of SCL, including the additional costs arising from the archaeological and conservation works at To Kwa Wan Station, the enabling works to cater for the topside development, the deferred site handover, as well as the difficulties and challenges encountered on site as mentioned in paragraphs 15 to 38 above.

41. MTRCL pointed out in November 2016 that the SCL project was complicated and only 40% of the Hung Hom to Admiralty Section had been completed, adding that the remaining 60% of the Section would still be affected by a number of factors as stated in paragraphs 31 to 38 above. To provide a more accurate estimate for the cost of the main works, it is necessary to wait until the second half of 2017 in order to have a more practical assessment. As it is anticipated that the contingencies for the main works of the SCL would not be sufficient to meet the additional costs of the main works, upon receiving the final assessment on the additional costs from the MTRCL and completing the scrutiny of such assessment, we will seek additional funding from the LegCo in the 2017/18 legislative session for the continuation of the main works.

42. Besides, as mentioned in paragraph 13 above, the contingencies of the advance railway works of SCL (**63TR**) would not be sufficient to meet the expenditure of the additional cost of expansion works of Admiralty Station to be borne by the advance works. We will seek the support of the Members of the Subcommittee at its meeting scheduled for December 2016 for an increase in the APE of the advance railway works of SCL by \$847.7 million, from the original \$6,254.9 million to \$7,102.6 million (in money-of-the-day (MOD) prices).

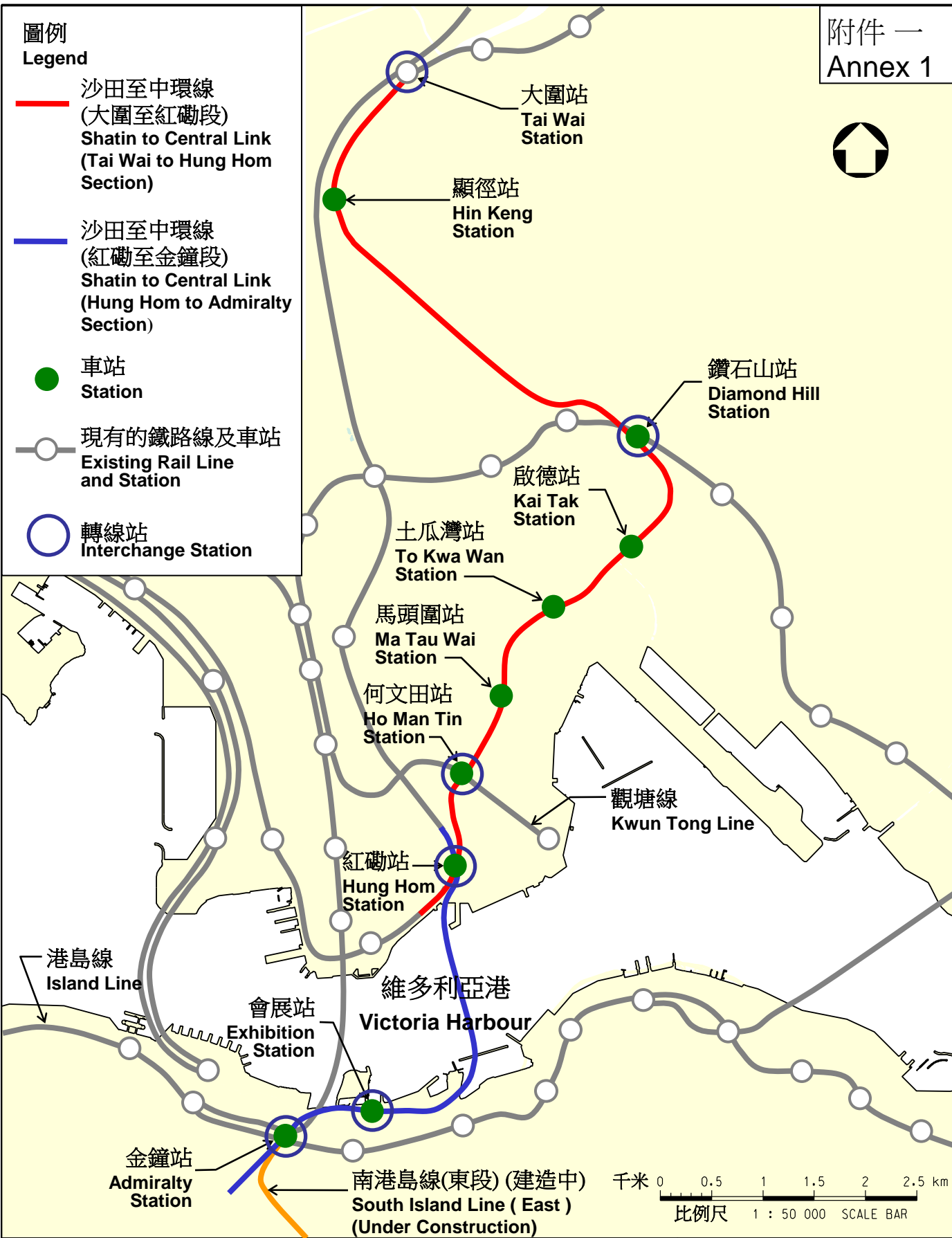
43. SCL is a major underground infrastructure project of a considerable scale. There are various difficulties and challenges encountered in the course of construction. It is unavoidable that there are deviations from the original plan for individual works contracts. MTRCL has adjusted its works procedures having regard to the actual situation of work sites. Additional manpower and machinery have also been deployed in order to overcome the difficulties. The Government will closely monitor the progress of works and the construction. It will also

assist MTRCL to resolve the problems encountered in the course of construction as early as possible and conduct timely reviews of the commissioning programme taking into account the latest situation of the works.

**Transport and Housing Bureau
Highways Department
December 2016**

圖例
Legend

- 沙田至中環線
(大圍至紅磡段)
Shatin to Central Link
(Tai Wai to Hung Hom Section)
- 沙田至中環線
(紅磡至金鐘段)
Shatin to Central Link
(Hung Hom to Admiralty Section)
- 車站
Station
- 現有的鐵路線及車站
Existing Rail Line and Station
- 轉線站
Interchange Station



圖則名稱 drawing title

沙田至中環線的走線

Alignment of the Shatin to Central Link

圖號 drawing no.

HRWSCLO03-SK0448

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路政署
HIGHWAYS DEPARTMENT

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

**Progress Update of the Shatin to Central Link
(As at 30 September 2016)**

INTRODUCTION

This report aims to update Subcommittee members on the progress of Shatin to Central Link (“SCL”) as at 30 September 2016.

OVERVIEW OF THE SCL PROJECT

Cost and expenditure

2. Since mid-2012, 27 major civil and 28 major electrical & mechanical (“E&M”) contracts¹, together with other minor contracts, have been awarded with a total sum of \$57.164 billion. The contract sums for civil works and E&M works are about \$43.733 billion and \$13.431 billion respectively (Please refer to Enclosure I).

3. Under the Entrustment Agreement for the SCL, the Government of the Hong Kong Special Administrative Region (“the Government”) is responsible for funding the construction of the SCL. As previously reported, currently the East-West Corridor (“EWC”) and North-South Corridor (“NSC”) are expected to be completed in 2019 and 2021 respectively.

Cost review

4. The Corporation attaches great importance to the monitoring and cost control of railway projects. The Corporation has a robust governance framework and a set of stringent procedures governing procurement, contract administration and cost control of its projects, be it an ownership project or a concession project.

¹ Major civil contract/E&M contract refers to any individual contract with value above \$50 million, and includes Contract 11227 with a value of \$49.8 million.

5. Under the Entrustment Agreements for concession projects, the Corporation is obliged to use the same management system and procedures that are applicable to all other MTR projects. For concession projects like the SCL project, there is also an independent rigorous monitoring and verification system in place conducted by the concerned Government authority and its consultants in addition to the Corporation's contract management and control procedure.

6. To enhance the control of expenditure, the Corporation also set up the Project Control Group (PCG) as a gate keeper, to scrutinize the assessments of variations and claims arising from consultancies and works contracts under the SCL project. Representatives from the Railways Development Office of Highways Department are invited to attend the PCG meetings.

7. Besides, where the progress of works has been delayed, the Corporation would consider implementing delay recovery measures as appropriate. The proposals of delay recovery measures including the cost and benefits implications are required to be reviewed and approved by PCG.

8. As announced in the Corporation's interim results on 9 August this year, due to the continuing challenges faced by the SCL project, the Corporation considers that the cost estimate will need to be revised upwards significantly to include the additional HK\$4.1 billion that was previously reported in 2014 as a result of the archaeological finds in the work sites of To Kwa Wan Station, as well as the additional cost for the late handover of construction sites at Exhibition Station, the previously unbudgeted foundation works for top-side development at Exhibition Station and other factors such as the shortage of labour in the construction sector.

9. Given the complexity of the project works, the continuing uncertainties associated with some of the issues highlighted above, including the late handover of construction sites at Exhibition Station, the last one of which is only expected to be handed over in July 2017, and the fact that the North South Corridor is only 40% complete as at end September 2016, this detailed review on the additional costs of the main works of SCL will only be completed in the second half of 2017 after which the Corporation will formally report the findings to the Government.

Works progress

Overall progress

10. As at 30 September 2016, the overall works for SCL were 63% complete compared to the planned completion rate of 69% against the original project completion target in 2018 for EWC and 2020 for NSC respectively (Please refer to Enclosure II for details). As reported before, the construction works were affected by various factors, including the archaeological works at To Kwa Wan Station site, late land handover in Wan Chai North, and complicated underground conditions. During this reporting period, the progress of the construction works is steady and in line with the current completion dates for EWC and NSC in 2019 and 2021 respectively.

11. With the continuous efforts of the construction team, around 79% of the works of the EWC have been completed as at 30 September 2016 compared to the originally planned completion rate of 88%. Due to the archaeological finds, it is anticipated that EWC will now be completed in 2019. Key progress achievements include:

- a. **The full 11-km EWC tunnel has been bored through in August 2016; and**
- b. **8-car trains to be put into service on the Ma On Shan Line gradually (“MOL”) starting from early 2017.**

12. With a number of works fronts opening up, NSC was 40% complete in overall terms as at 30 September 2016 compared to the originally planned completion rate of 43%. Notable progress has been made during the reporting period:

- a. **The second tunnel boring machine (“TBM”) on Hong Kong Island, “Zhi-nu”, has started her journey to Exhibition Station;**
- b. **The casting of the immersed tube (“IMT”) units to be completed in the first quarter of 2017; and**
- c. **Testing of new signalling system with the East Rail Line (“EAL”) trains has commenced at the track area of**

Racecourse Station during non-service hours at night.

13. In addition to the SCL construction works, delivery of new trains, conversion of existing trains and train tests are progressing as planned. New trains for NSC and EWC are being delivered to Hong Kong in batches as scheduled. 8-car train conversion of West Rail Line (“WRL”) is progressing as planned and ten 8-car trains have been put into service and are running smoothly, relieving crowdedness on WRL. At the same time, other improvement works for the operating railway are also underway, including retrofitting of Automatic Platform Gates (“APG”) at the stations of MOL, and platform strengthening works at the EAL stations.

Progress in different sections

14. SCL comprises six sections according to geographical locations -

- (i) Shatin Section;
- (ii) Wong Tai Sin Section;
- (iii) Kowloon City Section;
- (iv) Hung Hom Section;
- (v) Cross Harbour Section; and
- (vi) Hong Kong Island Section.

(i) Shatin Section (Section of railway between Tai Wai Station and Ma Chai Hang in Wong Tai Sin)

15. Fitting out works for Hin Keng Station continue. Building services and E&M equipment installation are on-going at all levels within the station area. External works including utilities diversions, reinstatement of the Hin Tin Playground and the public roads are in progress.



Location map of Hin Keng Station and associated tunnel structures

16. For the viaduct and at-grade tunnel box connecting Hin Keng Station, backfilling and external finishing works following completion of the railway structures are in progress. Construction of the retaining wall at the unnamed road near Hin Keng Estate is expected to commence in 2017 after the completion of the track laying works in Lion Rock tunnel.



Hin Keng Station and part of the viaduct

17. Subsequent to the completion of lining works of the tunnel section inside Lion Rock, all of the internal structural works including partition walls and walkways have also been completed. Track laying works have also commenced. As previously reported, because of the complicated geological conditions under the Hin Keng portal area of Lion Rock, the progress of tunnelling works were behind the original schedule. In order to speed up the works programme, a number of mitigation measures have been taken, including increase in blasting charge and re-sequencing of the construction process. The mitigation measures have successfully recovered some of the delays.

(ii) Wong Tai Sin Section (Section of railway between Ma Chai Hang and Kai Tak Station)

18. Following the completion of the structural works of the TBM tunnels from Ma Chai Hang to Diamond Hill in September 2016, track-laying and installation of trackside auxiliary works have commenced.



Track works for the TBM tunnels from Diamond Hill to Ma Chai Hang

19. At Ma Chai Hang, excavation for the ventilation shaft and the ventilation tunnel has been completed in October 2015 and January 2016 respectively. Structural works for the ventilation building and tunnel lining works for the ventilation tunnel are now underway. Construction of the emergency adit connecting the ventilation building with the railway tunnels has also commenced.



Structural works for the ventilation building at Ma Chai Hang



Tunnel lining works for the ventilation tunnel at Ma Chai Hang

20. Construction of the Fung Tak Emergency Access Point at the junction of Wong Tai Sin Road and Sha Tin Pass Road is in progress and is expected to be completed in the first quarter of 2017. Structural works for the adjacent Public Transport Terminus were 80% complete. E&M and building service works have commenced.

21. After the topping out of the Diamond Hill Station extension in June 2016, fitting-out, E&M and track works are in full-swing. Construction of a new entrance adjacent to the existing Entrance B is in progress and the existing Entrance A2 is being modified to connect with the extended part of the station. Part of the site area has been handed-over to the Housing Authority for carrying out advance works for the future public housing development over the previous Tai Hom Village site.



Structural works Expansion works for Diamond Hill Station

22. Modification works continue at the existing Diamond Hill Station to transform it into an interchange station of the existing Kwun Tong Line

and SCL. The external lift at Entrance A1 and the new escalator in the existing station were open for public use in June and July 2016 respectively. The first stage construction works of the two pedestrian subways connecting the existing Diamond Hill Station and its extended part were completed in November 2015. To facilitate the construction of the remaining pedestrian subways, the third stage of the temporary traffic diversion at Lung Cheung Road was implemented in end August 2016. During the traffic diversion, the number of traffic lanes at Lung Cheung Road remains unchanged. Meanwhile, foundation works for the remaining pedestrian subways are in progress.

23. Excavation works of the cross passage between the up-track and down-track TBM tunnels from Kai Tak to Diamond Hill have been completed. Track-laying works for both up-track and down-track tunnels have also been completed while overhead line installation has commenced in mid-October 2016.



Trackside auxiliary works are on-going at the tunnels from Kai Tak to Diamond Hill

24. As part of the SCL, certain improvement works related to improving the connectivity of pedestrian facilities to Diamond Hill Station have been entrusted to the Corporation by the Government. This includes the provision of footbridges, covered walkways, lifts and escalators in Tsz Wan Shan area. Tsz Wan Shan is a densely populated area and works site are close to residential blocks. Some of the facilities and the related temporary traffic management schemes have been revised in order to minimise the potential impacts on the residents. Some works have encountered unexpected and complicated geological condition, as well as complications caused by underground utilities. As a result, the original programme was affected. The contractor is striving to carry out works at different locations in parallel to catch up on the programme.

The facilities have been opened progressively for public use since 2015. The facilities already opened for public in use include the covered walkways at Fung Tak Road, Tsz Hong Estate and Po Kong Village Road, the footbridge across Yuk Wah Street, and the lifts at Tsz Hong Estate, Tsz Lok Estate, Tsz Man Estate, Fung Tak Estate and Lung Poon Street. Other facilities including the covered walkways and lifts at Po Kong Village Road and Tsz Wan Shan Road, and the staircase and escalator at Tsz Lok Estate are expected to be gradually available for public use from the end of 2016 to early 2017. Completion of the remaining two footbridges at Wan Wah Street and Yuk Wah Street is expected in the third quarter of 2017.

(iii) Kowloon City Section (Section of railway between Kai Tak Station and Ho Man Tin Station)

25. Fitting out, E&M and track works are ongoing at Kai Tak Station. The canopies of station entrances are being constructed and are expected to be substantially completed by the end of 2016. The cut-and-cover tunnels between Kai Tak Station and To Kwa Wan Station have been completed.

26. As previously reported, the archaeological works at To Kwa Wan Station have caused a delay of at least 11 months to the original programme of the Tai Wai to Hung Hom Section. The delay recovery measures planned for To Kwa Wan Station, Ma Tau Wai Station and the associated tunnels have been implemented in order to mitigate some of the delay caused by the archaeological works.

27. Structural works for To Kwa Wan Station are on-going with over 70% of the base slab having been completed. The overall structural works of the station was 34% complete. Excavation and structural works for the adit connecting with the entrance at Nam Kok Road were 85% and 55% complete respectively.



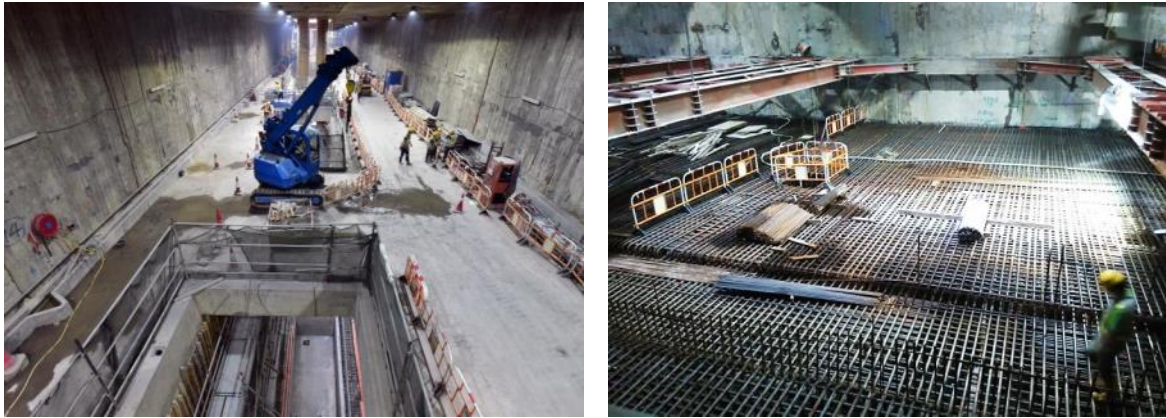
Structural works for To Kwa Wan Station

28. The TBM “Princess Iron Fan” has completed the last part of her drive for the up-track tunnel from To Kwa Wan Station to Ho Man Tin Station in August 2016 and is being dismantled. Construction of walkways and track bed is in progress in the down-track tunnel.

29. Shaft excavation of the emergency access for the railway tunnels near Tam Kung Road is in progress and was 98% complete. Excavation of the adit connecting the shaft to the railway tunnels has been completed.

30. At Ma Tau Wai Station, excavation works at lower platform level have been completed in November 2016. Structural works are on-going which are expected to be completed by the first quarter of 2017. E&M and fitting out works have also commenced at the concourse level. The traffic arrangement at Ma Tau Wai Road will continue with public access being maintained for two southbound and one northbound traffic lanes until the end of 2016 or early 2017. The traffic lanes will re-open in phases afterwards.

31. Excavation and structural works for the four station entrances, which are located at Lok Shan Road, Kiang Su Street, Ma Tau Wai Road (outside To Kwa Wan Market) and the junction between Chi Kiang Street and Ma Tau Wai Road, are in progress. Excavation for the ventilation shaft in front of To Kwa Wan Market has been completed and structural works have commenced. At Chi Kiang Street, excavation of the emergency access shaft has been completed and the excavation for the adit connecting the shaft with the railway tunnels is in progress.



Construction site of Ma Tau Wai Station

(iv) Hung Hom Section (Section of railway between Ho Man Tin Station and Hung Hom Station)

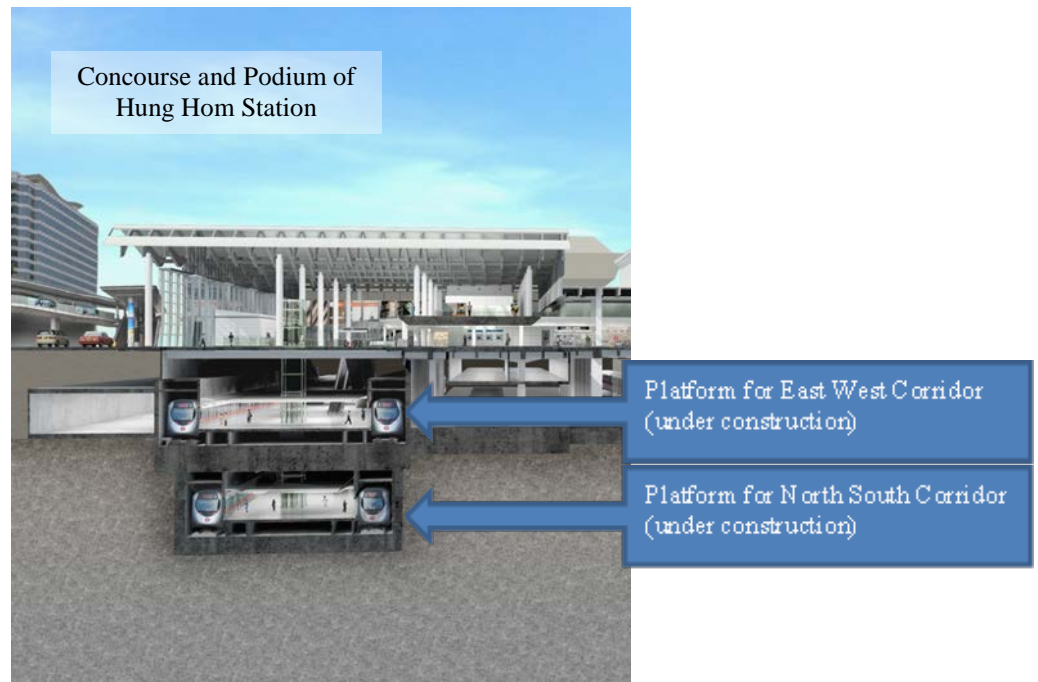
32. Under SCL, two railway tunnels are being constructed north of Hung Hom Station to connect the existing EAL and WRL to form the NSC and EWC respectively. For the future connection from Ho Man Tin Station to Hung Hom Station and the existing WRL, structural works of the tunnel have been completed. For the tunnel connecting with the existing EAL to form NSC, excavation works have been completed and structural works are now underway.



Tunnel excavation under Chatham Road North and near Winslow Street

33. To facilitate the future railway operation of SCL, noise enclosures are being built along the new section of tracks near Oi Sen Path. Major installation works of the noise enclosures have been completed and the remaining works are expected to be completed by the end of 2016. As the construction site is in the vicinity of EAL, the construction team will carry out the works in a prudent manner and review the construction method and the works sequence to avoid disruption of the existing

railway service, as well as minimise any impact on the existing foundations and underground utilities.



34. Hung Hom Station will become the interchange station of EWC and NSC of the SCL. To cater for the future railway services, two levels of new platforms designated for EWC and NSC are now being built under the existing station podium. To prepare for the future arrangements, modification works are now being carried out at the existing northern concourse until the first half of 2017.

35. The construction works of the new platforms in Hung Hom Station for EWC and NSC are in progress. Excavation for the new platforms has been completed and structural works including the construction of platform slab and back of house structures are now in full swing. As previously reported, the works were about four months behind the original schedule due to the complicated geological conditions under the station podium, as well as limited space and headroom available for construction works. In order to catch up with the programme, E&M and fitting out works will be carried out in parallel with the structural works. The contractor has also deployed additional manpower and re-sequenced the works in order to catch up with the progress. We will ensure that the structural safety of the station and adjoining buildings will be maintained throughout the works.

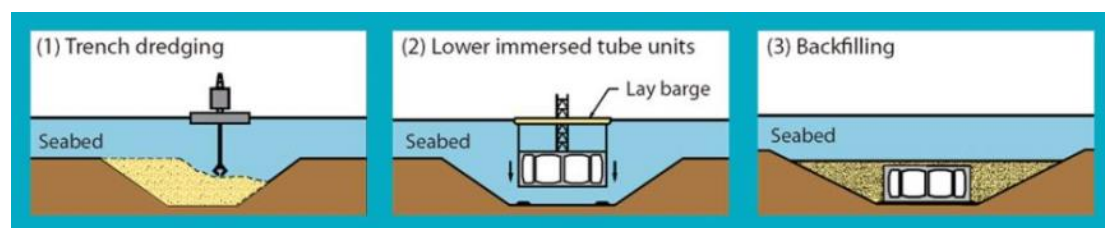
36. To facilitate future railway operations, the stabling sidings for the EWC trains are now under construction at the former Hung Hom Freight

Yard. Structural works, building services and E&M works are now underway.

(v) Cross Harbour Section (Section of railway across Victoria Harbour)

37. To extend the existing EAL across Victoria Harbour to Hong Kong Island, a new cross-harbour rail tunnel will be built under the SCL project. A section of the cross-harbour rail tunnel near the seashore at Hung Hom will be constructed by cut-and-cover method within a temporary cofferdam. The construction of the temporary cofferdam has been completed although during construction unforeseen obstructions to pile-piling and sheet-piling have been encountered, requiring extra effort by the contractor to go through these obstructions. Water inside the cofferdam has been pumped out and the tunnel excavation works have also commenced in the third quarter of 2016.

38. The section of the cross-harbour rail tunnel between Hung Hom and Causeway Bay Typhoon Shelter (CBTS) will be constructed by the IMT method (See the diagram below).



Construction Method of IMT

39. The fabrication of all IMT pre-cast units is progressing as planned. A total of 11 IMT pre-cast units are being fabricated in the casting yard located at the ex-Shek O Quarry and are expected to be completed in the first quarter of 2017. As at 30 September 2016, about 80% of the fabrication works in concrete volume was completed. The finished IMT units will be stored in the basin and then towed to Victoria Harbour for installation in mid-2017 onwards.



Casting yard of IMT pre-cast units

40. The trench dredging work for the section of IMT in Victoria Harbour continues. As at 30 September 2016, approximately 60% of the dredging works were completed in Victoria Harbour. The dredging works are being carried out in phases in Victoria Harbour until 2017 to prepare for the placing of the gravel bed within the trench for the installation of the IMT units. Backfilling will be carried out after IMT installation.

41. To prepare for the installation of the IMT units inside CBTS, moorings within CBTS were adjusted in early June 2016 to vacate spaces for pipe piling and dredging works. Pipe piling and dredging works have commenced in the third quarter of 2016 to form the temporary wave barrier facilitating the tow-in and installation of IMT units.

(vi) Hong Kong Island Section (Section of railway on Hong Kong Island ending at Admiralty Station)

42. The tunnels on Hong Kong Island are excavated by two TBMs, namely “Athena” and “Zhi-nu”. “Athena” has completed excavating the around 600-metre-long up-track tunnel from the temporarily reclaimed land at CBTS to Exhibition Station in early July 2016, and “Zhi-nu” has started the construction of the down-track tunnel heading towards Exhibition Station in August 2016.



Excavation of the down-track tunnel between CBTS and Exhibition Station was completed

43. At the works site of Fenwick Pier Street, the excavation of the TBM shaft has been completed in September 2016. “Athena” has been delivered and is being re-assembled at this shaft after finishing her up-track tunnelling works from CBTS to Exhibition Station, and will then head towards Admiralty Station in close proximity to the alignment of Tsuen Wan Line for the around 450-metre-long up-track tunnel in the second quarter of 2017.

44. To ensure smooth operation of the TBM, any known underground obstructions along the excavated tunnel have to be removed as part of the preparatory works including the removal of underground piles, diversions of underground utilities, as well as bridge underpinning. Besides, ground stabilisation works have to be carried out along the tunnel alignment between CBTS and Admiralty Station. Pile extraction at Wan Shing Street was substantially completed in June 2016. Associated ground treatment works have been completed in late September 2016. Additional unforeseen obstructions on Marsh Road are currently being removed. These additional underground obstruction removal works and contingency arrangements for tunnelling beneath the busy carriageways

added to the complexities of the works and required deployment of extra resources.

45. At the former Police Officers' Club ("the Club") in Causeway Bay, foundations works for the ventilation facilities for the SCL cross-harbour tunnel were completed and excavation of the ventilation shaft commenced in the fourth quarter of 2016. The area is also used to support the TBM works at the temporarily reclaimed land at CBTS.

46. In the Wan Chai North area, the Exhibition Station will be located under the former Public Transport Interchange ("PTI"), and, the former Wan Chai Swimming Pool and the Harbour Road Sports Centre. Construction works for the diaphragm walls of Exhibition Station and relevant railway facilities are underway. Due to limited area in Wan Chai North, the carriageways of the section of Convention Avenue between Expo Drive, Expo Drive East and Fleming Road have been shifted northward in September 2016 as planned to create additional works areas for the construction of diaphragm walls for the Exhibition Station and relevant railway facilities. To facilitate the works, Tonnochy Road was shifted eastward slightly in late July 2016. Different stages of temporary traffic management arrangements along Convention Avenue, Fleming Road and Expo Drive East will be carried out progressively. Traffic lanes of the abovementioned roads will be diverted in phases while the number of traffic lanes will remain unchanged at peak hours.



Carriageways of the section of Convention Avenue between Expo Drive, Expo Drive East and Fleming Road were shifted northward

47. With the opening of the temporary footbridge connecting Great Eagle Centre / Harbour Centre with the ex-Wan Chai Ferry Pier in mid-June 2016, the old footbridge was demolished in July 2016 to facilitate the construction of Exhibition Station.

48. Regarding the large metal object found on the seabed within the reclamation area under the Wan Chai Development Phase II (“WDII”) project, the Civil Engineering and Development Department (“CEDD”) removed it from the reclamation site in June 2015 to allow resumption of the reclamation works and relevant works. Originally, the reclaimed land will be handed over to the contractor of SCL at the end of December 2016. As the discovery of the metal object has affected the progress of reclamation works there, CEDD indicates that the handover date of part of the works areas would be deferred by seven months. The Highways Department (“HyD”) and the Corporation will maintain liaison with CEDD on the handover arrangement of works areas.

49. As previously reported, CEDD estimated that the handover date of the associated critical works sites adjoining the junction of Expo Drive East and Convention Avenue would be deferred for about six months. Over the previous period, CEDD implemented appropriate measures with a view to catching up with part of the works progress in order to hand over the other works sites to SCL in accordance with the original schedule. Further discussion will be held among HyD, CEDD and the Corporation regarding the remaining work sites.

50. According to the latest information on the site handover schedules provided by CEDD, and to allow flexibility for the enabling works of convention facilities above Exhibition Station including additional piles, the Corporation has explored possible measures to improve the progress, and will continue to maintain close communication with relevant government departments. We will closely monitor the latest situation regarding the timing of handing over works sites and strive to minimise the risks of delay. It is anticipated that the delay of six months in the completion of Exhibition Station will bring the completion of NSC to 2021.

51. To facilitate the construction of Exhibition Station, the current Harbour Road Sports Centre needs to be reprovisioned. Upon completion of the reprovisioning works of the swimming pool in October 2015, the construction of the new Sports Centre and Exhibition Station have commenced at the former swimming pool area. As at 30 September 2016, the foundation works and sub-structure works including the installation of underground utilities of the new Sports Centre have been completed. Major structural works are now underway. Building services works have also commenced. However, the underground condition at the original sports centre has yet to be ascertained. Upon completion of the

reprovisioning works, detailed ground investigation works at the original sports centre will follow to ascertain the underground condition.

52. The future NSC of the SCL will terminate at Admiralty Station, which will become an interchange hub for the SCL, Island Line, Tsuen Wan Line and South Island Line (East) (“SIL(E)”). To facilitate the train operations of the SCL, a 900-metre overrun tunnel will be extended southwards from the SCL platform at Admiralty Station for train regulation. Among which, a 200-metre-long section extending south of the Admiralty Station to Hong Kong Park has been entrusted to the SIL(E) project and the excavation works was completed in the second quarter of 2015. The remaining 700-metre-long section of the SCL overrun tunnel extending from Hong Kong Park has commenced construction by drill and blast method in late September 2016 and is expected to be completed in the third quarter of 2018.



SCL overrun tunnel construction site at Hong Kong Park

NEW TRAINS

53. New trains for NSC are being delivered to Hong Kong in batches. Stringent testing and commissioning for the delivered new trains are underway at Ho Tung Lau Depot. From December 2015 onwards, dynamic testing is also underway at the existing EAL during non-service hours. New trains are equipped with new design features including dynamic route map and gangway end display system.



New trains of NSC

54. Meanwhile, new trains for EWC are also being delivered to Hong Kong in batches. Stringent testing and commissioning for the delivered new trains are underway at Pat Heung Depot. Dynamic test is also underway at the existing WRL during non-service hours. Apart from the procurement of new trains, the existing WRL trains are being gradually converted into 8-car trains to facilitate the 8-car train operation in EWC. A total of ten 8-car trains have been put into service on WRL. The conversion all of the 28 WRL trains is expected to be completed in 2018.

55. On the other hand, trains on MOL currently at 4-car train formation will be converted into 8-car train formation to facilitate the EWC operation. For better preparation for conversion, the first two 8-car trains is undergoing dynamic tests on the MOL for around three months after normal train service hours starting from late November 2016. The 8-car train service is expected to be launched in early 2017 upon the completion of the dynamic tests. The conversion of the existing 15 MOL trains will take around a year to complete.



4-car trains on the MOL will be replaced by 8-car trains in phases

IMPROVEMENT WORKS FOR THE OPERATING RAILWAY FACILITIES

56. Extensions of platforms and roofs along MOL stations, together with E&M and fitting out works have been completed. The extended platforms were also open in late November 2016 to facilitate the dynamic tests of the 8-car trains on the MOL. The retrofitting works of APGs at Tai Wai Station have been completed, and retrofitting works are on-going at other stations. The Corporation is committed to completing the retrofitting works of APGs in the stations of MOL in 2017.



Retrofitting works of APGs

57. The retrofitting of APGs will also be carried out for EAL. Before the commencement of the retrofitting works, platforms have to be strengthened in advance and equipment rooms for the relevant signalling system and facilities have to be constructed. To avoid interrupting

normal train services, most of the works can only be carried out overnight after normal train service hours. Platform strengthening works from Lok Ma Chau Station to Tai Wai Station have been substantially completed. Works are underway in phases in the remaining stations of EAL as planned. Construction of equipment rooms for the signalling and communication systems are expected to be completed in phases by the end of 2016.

58. To facilitate the future operation of new trains and APGs, the existing signalling system of EAL has to be upgraded. The upgrading works are being implemented progressively in phases while installation of equipment compatible with the new signalling system at trains and trackside are underway. Installation of equipment at the trackside along Fo Tan, Racecourse and University Stations has been substantially completed. The installation works are underway at the trackside along Tai Po Market, Tai Wo and Fanling Stations. Testing of new signalling system with EAL trains have commenced at the track area of Racecourse Station during non-service hours starting from end October this year. It will then proceed to track sections between University and Fo Tan Stations in phases.

59. As the signalling system involves tens of thousands of electronic components, the replacement of signalling systems involves risks which cannot be totally eliminated. In general, during the works period, major signalling system upgrades may lead to unstable system performance and the railway service may be more vulnerable to service delay and interruption. Teething problems are experienced in signalling upgrade on replacement projects in railways elsewhere especially during the initial changeover periods. Overseas experience shows that some railways would suspend their services for signalling upgrade to minimise such risks. Since EAL services are essential for passengers, we endeavour to avoid any suspension of EAL service in Hong Kong. This poses significant challenges to the works team and the railway operations given the complexity of the works and the limited time available outside traffic hours to implement the replacement works.

60. Since railway safety remains the top priority, the Corporation has appointed independent experts to offer advice to ensure that international safety standards are met. A comprehensive risk assessment of the upgrade of the signalling system is being conducted. The possible risks and contingency measures are being carefully examined having regard to the existing contingency mechanism for handling railway service disruptions.

Contingency plan on railway service disruption is subject to the agreement of the Transport Department. While every precaution has been taken to avoid impact on the operating railway, teething problems during the replacement works may occur. The projects team and railway operation team will closely monitor the situation to ensure that any hiccups will be tackled in a timely manner and safety will be upheld at all times.



Signalling upgrade along EAL

STAKEHOLDER COMMUNICATION AND ENGAGEMENT

61. Most of the SCL works sites are in urban areas and close to local communities. We attach great importance to close communication and engagement with the local communities and relevant stakeholders, in order to keep them informed of the works progress and to listen to their views.

62. Apart from the regular progress updates to the Subcommittee members and respective District Councils (“DC”), another major channel for communicating with the local communities is the Community Liaison Groups (“CLGs”), which have been set up across districts to provide regular updates on possible impacts of works relating to the SCL. Members of the CLGs include representatives of local District Councils, residents, schools, local organisations, etc. Representatives from government departments sitting in the CLGs include the Highways Department, Hong Kong Police Force, Transport Department, Lands Department and Home Affairs Department. Newsletters, leaflets and notices are also distributed to the local communities to provide updated information about the SCL. Dedicated MTR and Contractors’ Hotlines are also available for handling any enquiries and complaints in relating to

the project; while the SCL Information Centre in To Kwa Wan has also handled over 1,000 enquiries since October 2012.

EMPLOYMENT OPPORTUNITIES

63. As at 30 September 2016, about 6,868 construction workers and technical/ professional staff members are employed for the SCL project. Labour shortage continues to pose challenges to the project. To attract new blood to join the construction industry, the Corporation has initiated the “SCL Contractors Cooperative Training Scheme” in 2012. Under the Scheme, all SCL civil works contracts require contractors to recruit a specified amount of trainees. Training and internship programmes are provided to the trainees by the contractors of SCL and the Construction Industry Council. After passing relevant trade tests, the graduates would be offered a minimum 12-month employment contracts on the SCL. So far, the scheme has provided training to 709 trainees with 436 having completed the trade test and continuing their careers in the field.

CONCLUSION

64. Members are invited to note the above information.

MTR Corporation Limited
December 2016

Expenditure report as at 30 September 2016

Table 1 – Situation of expenditure

	Awarded contract sum for the contracts (\$ million)	Cumulative expenditure of awarded contracts (\$ million)	Estimated amount of unresolved claims* (\$ million)
Civil works	43,732.8	30,157.6	2,060.1
E&M works	13,431.3	2,715.8	160.0
Total	57,164.1	32,873.4	2,220.1

* The estimated amount of unresolved claim: Amount claimed (\$2,691.9 million) – Interim award (\$471.8 million) = \$2,220.1 million (See Table 2)

Table 2 – Situation of substantiated claims

	Claims resolved			Claims unresolved		
	Number	Amount claimed (\$ million)	Amount awarded (\$ million)	Number	Amount claimed (\$ million)	Interim award (\$ million)
Civil works	37	484.1	441.7	354	2,531.9	471.8
E&M works	6*	0	0	65	160.0	0
Total	43	484.1	441.7	419	2,691.9	471.8

* The claims only involved extension of time without cost implication.

1. The Government and the Corporation conducted risk assessment at the planning and budgeting stages of the project to minimise claims arising from the works. Nevertheless, there were often unforeseeable situations in the course of works. For instance, the foundation or excavation works might come across a larger amount of or more complicated obstructions than expected. As this would add difficulties to the works, the contractors might have to use more machines or switch to other machines that were more suitable and employ more staff to cope with these situations. The contractors would submit claims in accordance with the contract terms to cover the additional expenditures. Upon receipt of claims from contractors, the corporation would examine such claims and assess the amount concerned based on the relevant contract terms, justifications, documents, records, etc.

2. As at 30 September 2016, the Corporation received 462 substantiated claims and the amount claimed in total was about \$3,176.0 million, representing 5.6% of the awarded contract sum for the contracts. The Corporation has been discussing the details of the claims with the contractors concerned, and would thoroughly assess the amount claimed. The Corporation would process each claim in a prudent manner, and the contractors would have to provide sufficient justifications and information. As at 30 September 2016, 43 cases were resolved and about \$441.7 million

was awarded, representing about 0.77% of the awarded contract sum for the contracts. Having regard to the needs of individual works and progress of the relevant assessment and discussion, interim award amounting to about \$471.8 million was made for some cases.

Overall works progress of the SCL as at 30 September 2016

Overall works completed : 63%

Percentage completed as originally planned ⁽¹⁾: 69%

(A) Culminated progress of 26⁽²⁾ major civil contracts awarded :

Contract No.	Contract Name	Percentage completed
1101	Modification of Ma On Shan Line	99%
1102	Hin Keng Station and Approach Structures	95%
1103	Hin Keng to Diamond Hill Tunnels and Fung Tak Public Transport Interchange	92%
1106	Diamond Hill Station Extension	82%
1107	Diamond Hill to Kai Tak Tunnels	100%
1108	Kai Tak Station and Associated Tunnels	97%
1108A	Kai Tak Barging Point Facilities	100%
1109	Stations and Tunnels of Kowloon City Section	76%
1111	Hung Hom North Approach Tunnels	90%
1112	Hung Hom Station and Stabling Sidings	88%
1113	Reprovisioning of New Territories South Animal Management Centre and Shatin Plant Quarantine Station	100%
1114	Pedestrian Links at Tsz Wan Shan	82%
1117	Pat Heung Depot Modification Works	100%
1119	Trackwork and Overhead Line Modification Works at Lo Wu and PHD	100%
1120	Trackwork and Overhead Line for SCL Phase 1	43%
1120B	Trackwork and Overhead Line for SCL Phase 2	Less than 1% ⁽³⁾
1121	North South Line (NSL) Cross Harbour Tunnels	57%
1122	Admiralty South Overrun Tunnel	4%
1123	Exhibition Station and Western Approach Tunnel	24%
1124	Admiralty SCL Related Works	1%

1125	Police Sports and Recreation Club Enhancement Works	100%
1126	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	83%
1128	South Ventilation Building to Admiralty Tunnels	43%
1129	SCL - Advance Works for NSL	100%
11209	Platform Modification and Associated Works at East Rail Line	89%
11227	Advance Works for NSL Cross Harbour Tunnels	100%

Note:

- (1) The original programme is to commission the Tai Wai to Hung Hom Section and the Hung Hom to Admiralty Section in December 2018 and December 2020 respectively.
- (2) The 27 awarded major civil contracts as mentioned in Paragraph 2 of this report include Contract 11230, which is a tenancy agreement for the Joint Site Office for Contracts 1123 and 1128. This contract is part of the project cost for Contracts 1123 and 1128. As it involves no civil construction works, it is not included in the table above.
- (3) Civil Contract 1120B was awarded on 8 July 2016.

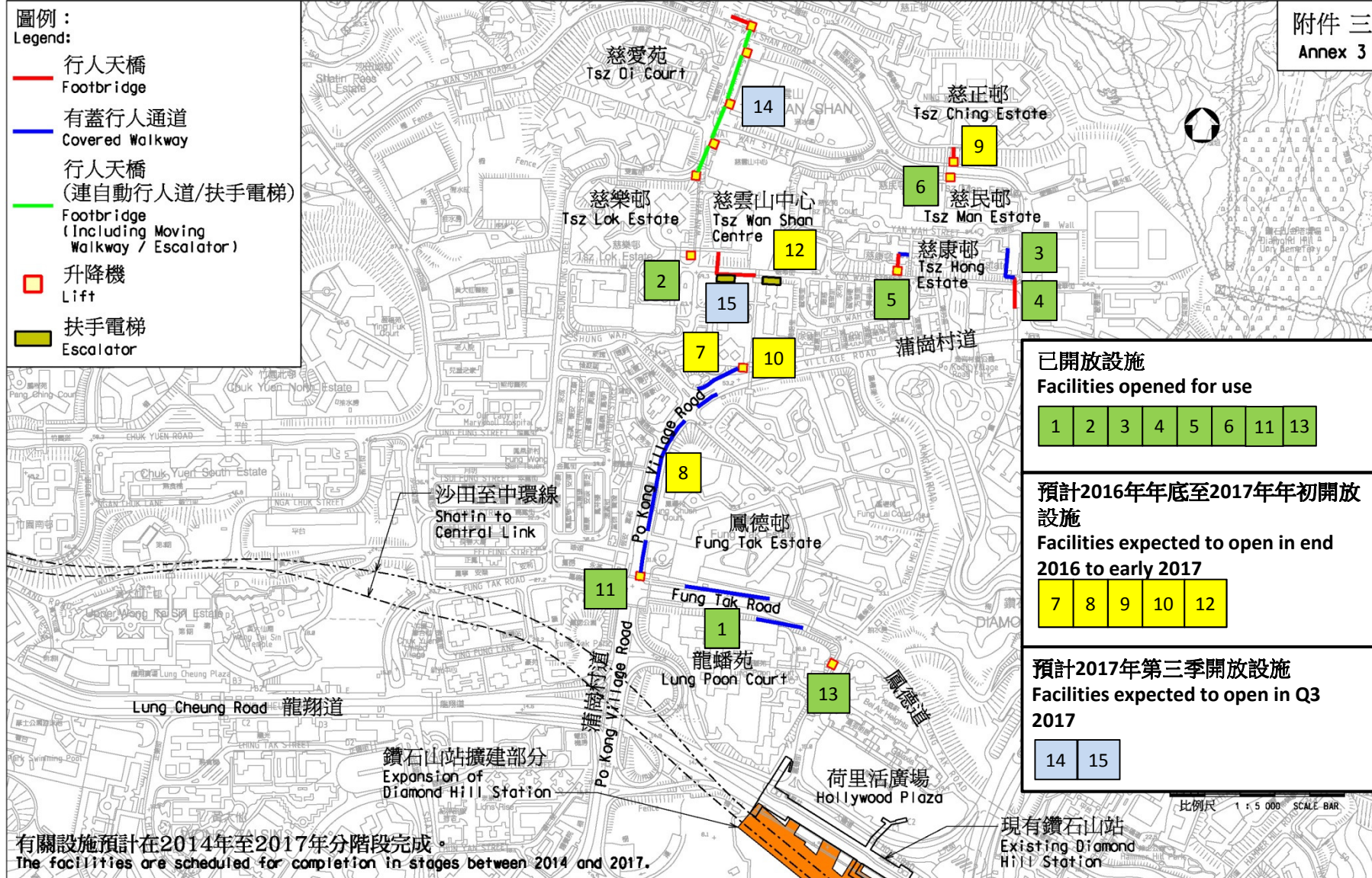
(B) Culminated progress of 28 major E&M contracts awarded :

Contract No.	Contract Name	Percentage completed
1141A	New Rolling Stock for SCL Phase 1	70%
1141B	New Rolling Stock for SCL Phase 2	30%
1151	Rolling Stock Modification and New Train Cars for SCL Phase 1	55%
1152	Signalling System for SCL Phase 1 & Signalling System Modification for MOL and WRL	69%
1152B	Signalling System for SCL Phase 2	52%
1153	Tunnel ECS for SCL Phase 1	44%
1153B	Tunnel ECS for SCL Phase 2	21%
1154	Platform Screen Doors for SCL Phase 1 & APG Retrofit for MOL	69%
1154B	Platform Screen Doors for SCL Phase 2 & APG Retrofit for EAL	2%
1155	Power Supply System and Trackside Auxiliaries for SCL Phase 1	63%
1155B	Power Supply System and Trackside Auxiliaries for SCL Phase 2	17%
1159	Lifts for SCL Phase 1	43%
1162	TETRA System for SCL Phases 1 & 2	74%
1162B	Radio Distribution Network System for SCL Phases 1 & 2	29%
1163	AFC System and SAM System for SCL Phases 1 & 2	24%
1164	Building Services for Diamond Hill Station	41%
1165	Building Services for Hin Keng Station, Ma Chai Hang Ventilation Building and Fung Tak Emergency Access	63%
1166	Main Control System for SCL Phase 1	77%
1166B	Main Control System for SCL Phase 2	23%
1169	Communications System for SCL Phase 1	68%
1172	Escalators for SCL Phase 1	42%
1172B	Lift and Escalators for SCL Phase 2	2 %

1173	Building Services for Hung Hom Station and Hung Hom Stabling Sidings	54%
1175	Building Services for Kai Tak Station	84%
1176	Building Services for To Kwa Wan Station and Ancillary Building	29%
1177	Building Services for Ma Tau Wai Station and Ancillary Building	25%
1183	EAL Signalling System Modification for SCL	100%
1191	Floodgate System for SCL Phase 2	4%

圖例：
Legend:

- 行人天橋
Footbridge
- 有蓋行人通道
Covered Walkway
- 行人天橋
(連自動行人道/扶手電梯)
Footbridge
(Including Moving Walkway / Escalator)
- 升降機
Lift
- 扶手電梯
Escalator



已開放設施
Facilities opened for use

- | | | | | | | | |
|---|---|---|---|---|---|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 11 | 13 |
|---|---|---|---|---|---|----|----|

預計2016年年底至2017年年初開放設施
Facilities expected to open in end 2016 to early 2017

- | | | | | |
|---|---|---|----|----|
| 7 | 8 | 9 | 10 | 12 |
|---|---|---|----|----|

預計2017年第三季開放設施
Facilities expected to open in Q3 2017

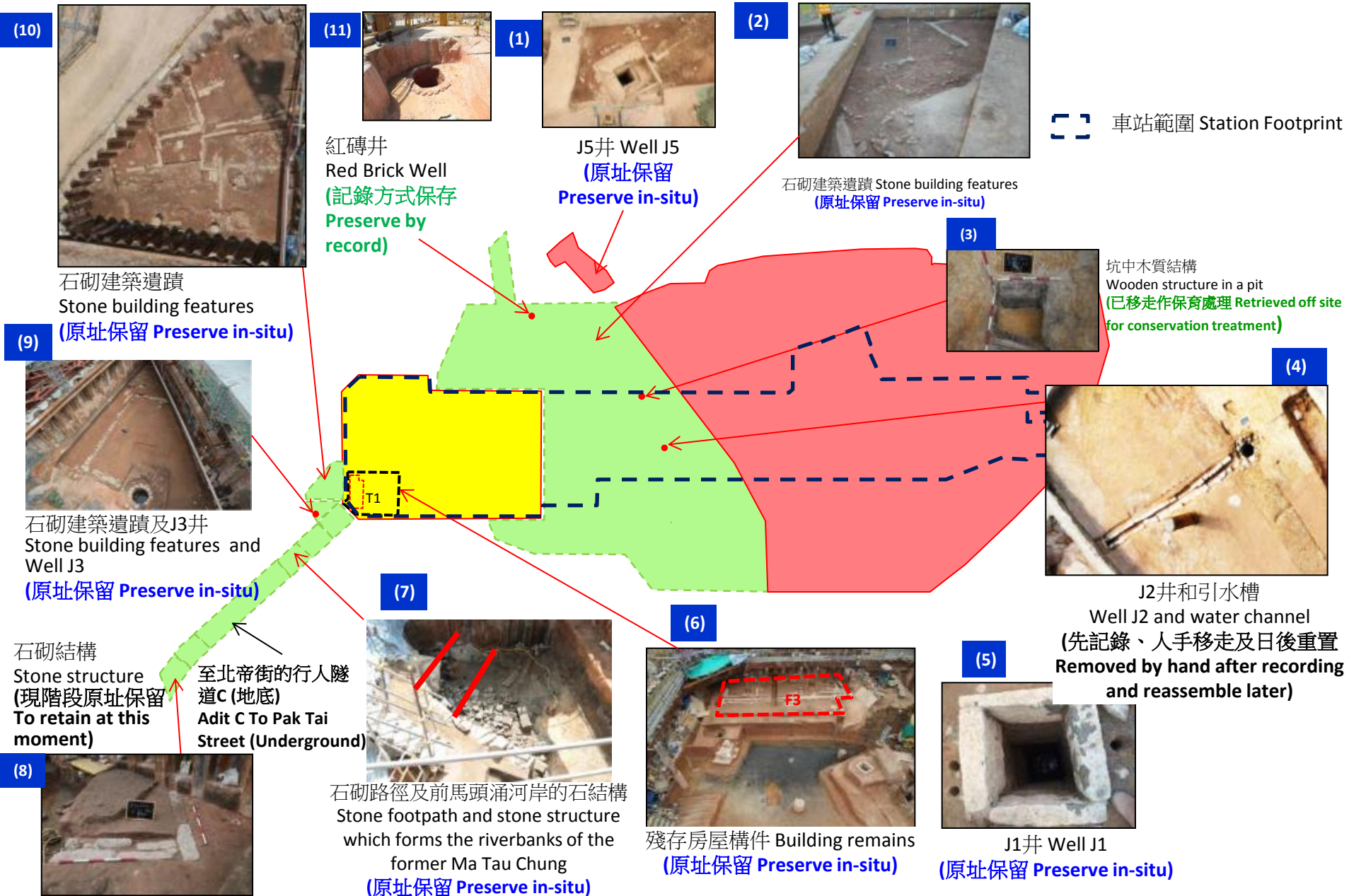
- | | |
|----|----|
| 14 | 15 |
|----|----|

沙田至中環線 - 慈雲山區與沙田至中環線鑽石山站的行人接駁設施

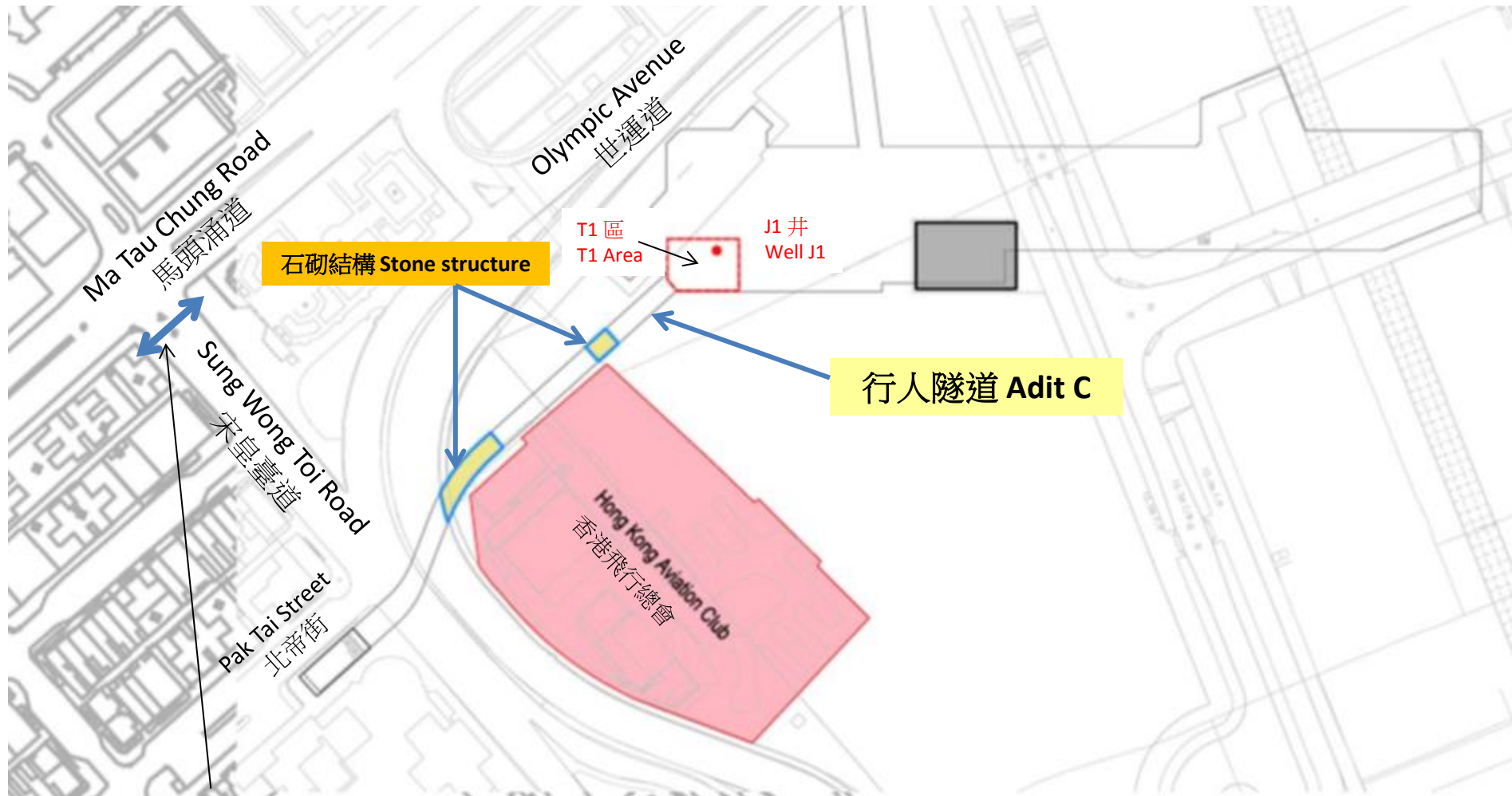
Shatin to Central Link - Pedestrian connecting facilities between Tszy Wan Shan Area and Diamond Hill Station of Shatin to Central Link

土瓜灣站工地考古文物保育方案

Conservation Options for Archaeological Features Discovered at To Kwa Wan Station



行人隧道 C 的走線 Alignment of Adit C



Existing pedestrian crossing
原有行人過路處