

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 June 2017)

(Translation)

Introduction

This paper reports to Members on the progress of the main construction works of the Shatin to Central Link (“SCL”) as at 30 June 2017.

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. There are ten stations in SCL. Apart from bringing improvements to the existing Tai Wai Station, the SCL project involves 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 entire SCL 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. Regarding the main works of SCL, the Finance Committee of the Legislative Council approved the funding applications on 11 May 2012 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.

6. The Finance Committee of the Legislative Council approved the funding application for increasing the Approved Project Estimate of 63TR by \$847.7 million from \$6,254.9 million to \$7,102.6 million at its meeting on 17 June 2017 for the additional fund required by the Government for the SCL advance railway works¹. The Approved Project Estimate for the entire SCL project is adjusted upward from the original estimate of \$79,800 million to \$80,700 million² (in

¹ Major reasons for additional fund required:

- (a) unfavourable ground conditions;
- (b) modification of the construction schemes to suit actual site conditions; and
- (c) increase in provision for price adjustments.

² 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

money-of-the-day prices).

7. 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 procurement activities, post-tender cost control and resolution of contractual claims. MTRCL has to submit monthly progress reports to the Highways Department (“HyD”) to report the latest progress and financial position of the SCL project. Moreover, HyD holds monthly Project Coordination Meetings and Project Progress Meetings with MTRCL to monitor different aspects of the implementation of the project and the progress, the handling of issues in relation to design, construction and environmental fronts that may have potential impact to the progress and programme of the SCL project, as well as the handling of interfacing issues with other projects. The HyD has also employed a monitoring and verification (“M&V”) consultant to assist in the monitoring work and undertake regular audits, advise the HyD of any potential risk of delay and will also offer comment to the HyD on the appropriateness of MTRCL’s proposed delay recovery measures. 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.

Latest Progress of the Main Works

8. The progress report of the SCL project as at 30 June 2017 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)

\$8,600 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). The total is about \$80,700 million.

9. Building services works and E&M works, including the installation of overhead line, lifts, escalators, signalling system, power and relevant systems, at Hin Keng Station and the connecting elevated and at grade tracks are in progress. Construction of the Emergency Vehicular Access outside the station and the diversion works for the underground utilities at Che Kung Miu Road are in progress. Trackside auxiliaries and overhead line installation works inside the Hin Keng to Ma Chai Hang tunnel are in progress. In addition, the installation works for the Automatic Platform Gates (“APG”) at all stations along Ma On Shan Line continue and is expected to be completed in 2017. The progress of above construction works are generally in line with the programme.

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

10. Building services works and E&M works inside the SCL Diamond Hill Station are in progress. Excavation works for the two pedestrians adits underneath Lung Cheung Road connecting Diamond Hill Stations of SCL and the Kwun Tong Line have been completed and the structural works are in progress and are anticipated to be completed in the fourth quarter of 2017. Besides, the construction of the emergency access point and the Public Transport Terminus at the junction of Wong Tai Sin Road and Sha Tin Pass Road continues.

11. Trackside auxiliaries and overhead line installation works inside the two sections of tunnels from Kai Tak Station to Diamond Hill Station and from Diamond Hill Station to Ma Chai Hang are in progress. The construction of the ventilation building at the former Ma Chai Hang Recreational Playground continues. The progress of above construction works is generally in line with the programme.

12. 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**), 13 out of the 15 items of facilities have already been opened for public use up to end June 2017, these include the lifts next to Po Kong Village Road and Fung Tak Road footbridges (opened in end October 2016), the lift at Lung Poon Street (opened in early November 2016), the staircase and escalator at Tsz Lok Estate near Tsz Wan Shan Shopping Centre (opened in end December 2016), the lift next to Tsz Lok Estate Ancillary Facilities Block (opened in end December 2016), the covered walkways at Po

Kong Village Road near Tsz Lok Estate Phase 3 (opened in end December 2016), the lift next to Ching Hong House of Tsz Ching Estate (opened in January 2017) and the covered walkways at Po Kong Village Road near Fung Tak Estate (opened in June 2017). Regarding the remaining two items, i.e. the footbridges along Yuk Wah Street and Wan Wah Street, it is anticipated that they would be completed in the third quarter and the fourth quarter of 2017 respectively.

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

13. The fitting-out works and E&M works in the the Kai Tak Station and the tunnel between Kai Tak Station and To Kwa Wan Station are in progress. The fitting-out works of the entrances were substantially completed in June 2017. The progress is on schedule.

To Kwa Wan Station

14. 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. 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. Upon the 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. 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 south-western corner of the TBM launching shaft. Upon the request of AMO, the archaeological work was further expanded to the entire works site of To Kwa Wan Station, which was finally completed in September 2014.

15. To avoid affecting the archaeological works, MTRCL suspended the construction works in the area where archaeological work was ongoing, except for

those relating to the archaeological excavation. 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. In order not to affect the remnants within the archaeological work area, MTRCL had to alter the design and re-sequence the construction of the launching shaft. 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.

16. 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 final report of the archaeological works for the SCL To Kwa Wan Station works site was submitted to and accepted by AMO in late June 2017. MTRCL has handed over the archaeological findings to AMO progressively.

17. As we stated in the papers submitted to this Subcommittee and the 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. The supporting facilities within the area around the adit, previously reserved as a temporary works site for the construction of the station and the railway tunnel, are being demolished. 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 (see **Annex 5**). MTRCL is discussing with relevant departments the feasibility of adding an at-grade crossing at a suitable location of Song Wong Toi Road for reducing the walking distance between Pak Tai Street and the station entrance. In addition, MTRCL is now exploring alternative scheme and alignment for the Adit C. Upon completion of the preliminary study, MTRCL

will consult the district council and relevant local community so as to ensure the alternative scheme is convenient and could meet the public needs.

18. 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. The structural works of the station roof and backfilling works of the station are still in progress. It is anticipated that the station structure and its backfilling works would be completed in the third quarter of 2017. The TBM works for the tunnel between To Kwa Wan Station and Ho Man Tin Station were completed in August 2016. The fitting-out works and E&M works in the station and tunnel are in progress, and are generally on schedule.

19. MTRCL previously estimated 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. In this connection, HyD and its M&V consultant worked closely with MTRCL and provided suggestions to enhance the delay recovery measures proposed by MTRCL, with a view to mitigating part of the delay to the “Tai Wai to Hung Hom Section”. With the efforts of the construction team, the delay recovery measures implemented at the “Tai Wai to Hung Hom Section” is picking up the pace progressively.

Ma Tau Wai Station

20. 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. Since end 2016, phase 3 of the temporary diversion scheme commenced and two southbound traffic lanes and two northbound lanes are being provided in phases to replace the existing two southbound lanes and a single northbound lane arrangement. The construction of partition wall structures, building services works and E&M works inside the station is in progress. Construction of the station entrances and ventilation shaft continues. 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)

21. Construction of tunnel structural work and track laying works of the section between Ho Man Tin Station and Hung Hom Station have been substantially completed. It was now prepared for the electrical and mechanical installation adjacent to the railway track. Regarding the temporary traffic diversions along Chatham Road North implemented for the tunnelling works, following the completion of the works, the eastbound and westbound carriageways affected have been reinstated to its original alignment. Reinstatement of other temporary diverted slip roads is expected to be completed in early 2018. For the tunnel section near Princess Margaret Road connecting the East Rail Line and the new platforms of Hung Hom Station, excavation works and tunnel structural works have been substantially completed, it is now prepared for track laying works. The progress of the above works is generally on schedule.

22. 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. The new platform and tunnel structure were substantially completed and the building services works and E&M works are generally progressing as scheduled.

Hung Hom to Admiralty Section

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

23. The main works of the Cross Harbour Section continue. The tunnel structural works at Hung Hom landfall were completed in June 2017 and construction of the ventilation building was in progress. To facilitate the future placement of immersed tube tunnel (“IMT”) units, the trench dredging works at the seabed of Victoria Harbour and the Causeway Bay Typhoon Shelter (“CBTS”) continue. The fabrication of all IMT pre-cast units at the ex-Shek O Quarry was completed in March 2017. The first IMT precast unit was towed from the casting yard at Shek O to CBTS for installation in June 2017. The progress of the cross-harbour section is generally on schedule.

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

24. The excavation works of the TBM tunnels from CBTS to Exhibition Station were completed by the end of 2016. The reinstatement works on the affected road sections and facilities were on-going, while the reinstatement of Wan Shing Street and the footpath at Marsh Road were completed. At the Tunnel Approach Rest Garden, the reinstatement works of the underpinned flyovers and the underground box culvert were in progress. The excavation of the up-track TBM tunnel from Fenwick Pier Street to Admiralty Station was successfully completed in May 2017. The TBM parts are being demolished and transported back to the Fenwick Pier Street site for re-assembling before proceeding with the subsequent down-track tunnel excavation towards Admiralty Station by the third or fourth quarter of 2017 tentatively. Since the TBM will cross underneath the existing MTR Tsuen Wan Line (“TWL”) Tunnel, the contractor has carried out some advance ground treatment works and other relevant preparation works in order to safeguard the normal operation of TWL. For the cut and cover Western Approach Tunnels from the west of Exhibition Station to Fenwick Pier Street, the construction of the diaphragm wall was completed in June 2017 and excavation works were in progress.

25. The main works of Exhibition Station are not only highly complicated, but also involve a wide extent of sites. For instance, prior to the construction of Exhibition Station at the ex-Wan Chai North public transport interchange, ex-Wan Chai swimming pool and the existing Harbour Road Sports Centre, the re-provisioning works of these facilities had to be completed before the demolition works take place. As there was a need to maintain the services of the above facilities at their original locations before they were re-provided at the new places, only limited site investigation works could be carried out and the detailed site investigation works could be only be conducted after the new facilities are re-provided. As such, the geological conditions in these areas remain uncertain and may subsequently affect the progress and the cost of works. Furthermore, since parts of Exhibition Station are located underneath the busy and narrow roads in Wan Chai North, large scale temporary traffic management schemes are required to be implemented in stages in order to make rooms for the construction of Exhibition Station. The limited space has posed constraints on the planning of works, such as site arrangement, works sequence and the associated integrated temporary traffic management schemes etc. The diversion of Fleming Road box culvert and the congested underground utilities will also be required to facilitate

the construction of Exhibition Station that runs across Fleming road. Prior to the works commencement, it was not possible to close the said road to carry out trial trenches for verifying the information provided by utility companies and relevant departments about the number and location of the underground utilities there. In addition, the current conditions of some of the utilities are unsatisfactory, hence repairing works are required prior to the excavation works. These have increased the construction difficulties and uncertainties, thereby posing certain risks to the works progress.

26. To facilitate the excavation works of Exhibition Station, MTRCL implemented a new temporary traffic management scheme in Wanchai North in April 2017. Part of the Fleming Road traffic lanes has then become works site and the construction of diaphragm walls has commenced. The construction of diaphragm walls at ex-Wan Chai North public transport interchange and ex-Wan Chai swimming pool has completed. Subsequent to the completion and opening of new Harbour Road Sport Centre (“HRSC”) for the public use in May 2017, MTRCL has completed the demolition of the existing HRSC in June 2017 and has carried out the ground investigation works for confirming the soil condition and planning on the construction methods and details of the upcoming excavation works.

27. The bulk excavation at ex-Wan Chai North public transport interchange and ex-Wan Chai swimming pool commenced in July and August 2017 respectively. Furthermore, MTRCL will also temporarily divert the underground box culvert at Fleming Road. The excavation works for the temporary box culvert have commenced in July 2017 and other underground utility diversion works will also be carried out accordingly.

28. To allow flexibility for the construction of convention facilities above Exhibition Station, it is necessary for MTRCL 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 accordingly.

29. Regarding the large metal object found on the seabed within the reclamation area under Wan Chai Development Phase II (“WDII”), the reclaimed land was originally planned to 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 has endeavor to complete their works there and handed over the relevant work sites to the SCL contractor in January, February and July 2017 respectively. As compared with the original schedule, the handover date of part of work sites was deferred by 7 months due to the impact of the large metal object.

30. 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. CEDD had implemented measures to catch up with part of the works progress and most of the work sites were handed over to MTRCL in accordance with the original schedule. The original delay of 6 months for the handover dates of other critical work sites was also shortened. HyD and MTRCL together with CEDD have been exploring further measures to minimize the risk of delay to SCL as far as possible. In July 2017, CEDD has handed over a majority of the remaining work site to the SCL contractor.

31. Further to the works sites mentioned above, difficulties are also encountered in the handing over of another parcel of land near Fenwick Pier Street. Apart from the WDII works, CEDD is entrusted by HyD to carry out works for the Central Wan Chai Bypass (“CWB”) at the same site. The site was originally planned to be handed over from CEDD in September 2016 upon the completion of the associated works in order for SCL contractor to construct the SCL works. However, due to the design change to the CWB Middle Ventilation Building, CEDD anticipated in mid-2015 that the site could not be handed over as scheduled. Subsequent to liaison amongst parties concerned, CEDD has allowed SCL contractor to gain access to and carry out works within the site since April 2016, with a view to minimising the impact on SCL programme. The works sites concerned were handed over to MTRCL from January to March 2017. Besides, an abandoned pipe pile within the concerned works site is in close proximity to the diaphragm wall of SCL. As the pipe pile is deeply embedded into the ground, the diaphragm wall design has to be revised with a view to minimising the impact of the pipe pile on the SCL programme. Nevertheless, the construction works could still be very challenging and need a longer time to complete causing an increase in construction cost. With the common goal of not affecting the progress of SCL and with the concerted efforts of parties concerned, an agreement was reached. CEDD had already handed over the required site in stages for SCL construction between January to March 2017. MTRCL completed the ground

investigation works and was carrying out grouting works at the vicinity of the abandoned pile to replace the construction of part of the diaphragm wall there. Furthermore, MTRCL has to construct a soil berm in order to allow the excavation works from the west of Exhibition Station to Fenwick Pier Street to proceed. As this berm will affect the progress of excavation works, MTRCL is currently investigating the feasible measures so as to recover the programme as far as possible.

32. MTRCL previously indicated that the “Hung Hom to Admiralty Section” would incur a further delay of three months due to the modification works as mentioned in paragraph 31 above and there would be an increase in construction cost. HyD has requested MTRCL to submit further detailed information and is working in collaboration with its M&V consultant to critically examine the impact assessment by MTRCL. HyD has also requested MTRCL to proactively explore measures to recover the progress so as to minimize the risks of construction delay.

33. The target commissioning date of the “Hung Hom to Admiralty Section” will remain in 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 and the measures mentioned in paragraph 31 may also lead to additional construction cost.

Conclusion

34. In view of the above assessments as mentioned in paragraphs 8 to 33 above, 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, the commissioning date of “Tai Wai to Hung Hom Section” is deferred to end 2019. HyD has been coordinating and overseeing 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 the efforts of the construction team, the delay recovery measures implemented at the “Tai Wai to Hung Hom Section” is picking up the pace progressively. Hence, the target commissioning date of this section could be advanced to about mid-2019. Due to the impact of site handover arrangement of WDII and to allow flexibility for the construction of new convention facilities above Exhibition Station, as well as the complicated underground condition at Exhibition Station, the target commissioning date of the

“Hung Hom to Admiralty Section” remains in 2021. HyD has also requested MTRCL to proactively explore measures to recover the progress so as to minimize the risks on construction delay. We will continue to coordinate and oversee the construction of SCL so as to achieve the aforementioned revised target commissioning dates.

35. 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 8 to 33 above.

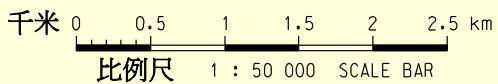
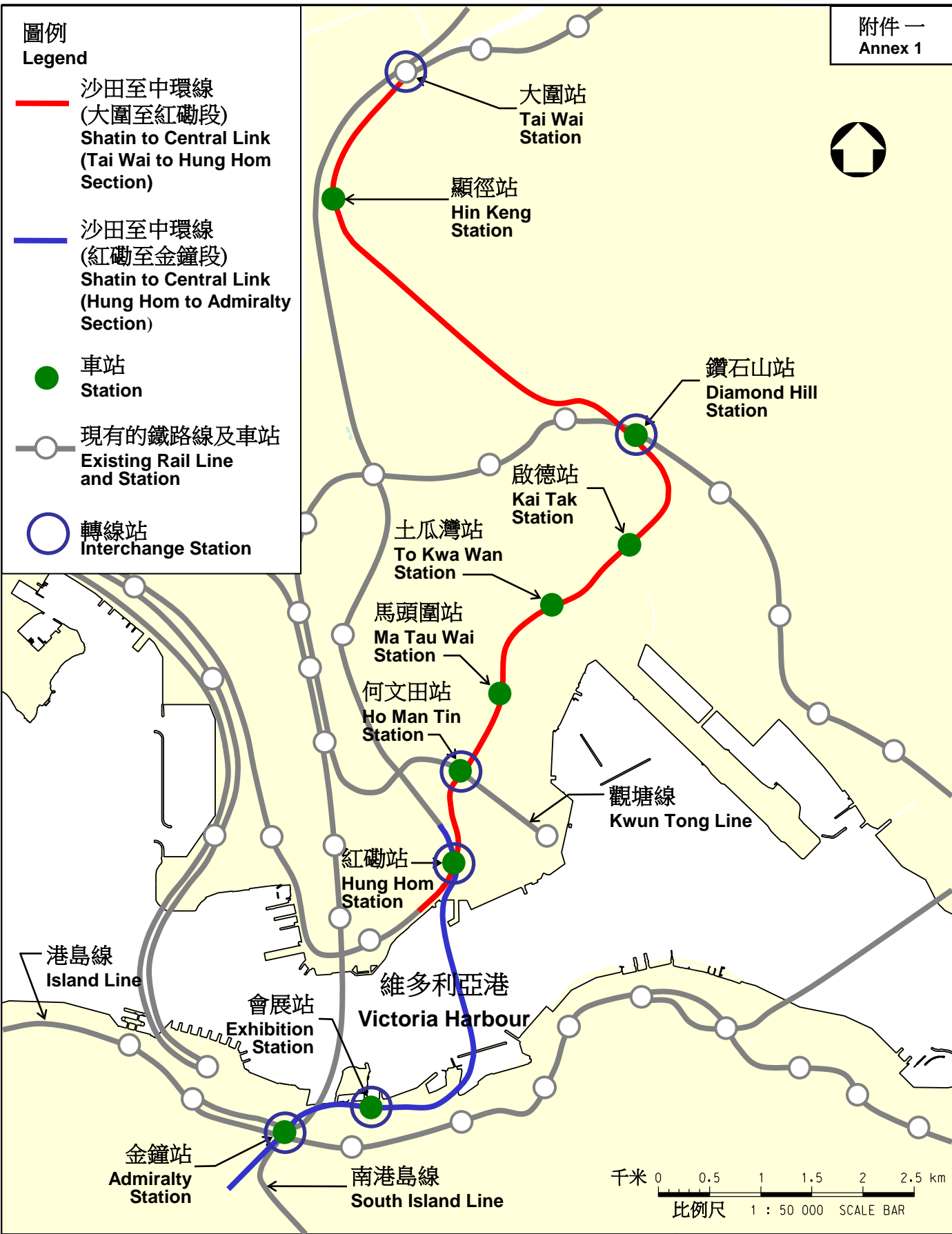
36. MTRCL pointed out that the detailed assessment for the costs of the works for the SCL project is being conducted and it is expected that the latest assessment can be submitted to the Government in the second half of 2017. As it is anticipated that the contingencies for the main works of the SCL would 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.

37. 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
September 2017**

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.

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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 June 2017)**

INTRODUCTION

This report updates Subcommittee members on the progress of Shatin to Central Link (“SCL”) as at 30 June 2017.

OVERVIEW OF THE SCL PROJECT

Cost and expenditure

2. Since mid-2012, 27 major civil and 30 major electrical & mechanical (“E&M”) contracts¹, together with other minor contracts, have been awarded with a total sum of \$57.636 billion. The contract sums for civil works and E&M works are about \$43.734 billion and \$13.902 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”) is expected to be completed in mid-2019 and the North-South Corridor (“NSC”), after taking into account the issues highlighted in paragraph 53, is expected to be completed in 2021.

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 has set up the Project Control Group ("PCG") as a gate keeper, to scrutinise 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. 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 the Corporation has announced last year, due to the continuing challenges faced by the SCL project, 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 majority part of the last one is just handed over in July 2017, with other ongoing challenges, some of the project works are still facing uncertainties. For instance, the progress of the installation of the immersed tube ("IMT") units under the Cross Harbour Section (i.e. the section of railway across Victoria Harbour) would be affected by the weather and sea surface conditions, etc. Nevertheless, the Corporation will complete the detailed review and report the findings to the Government later this year.

Works progress

Overall progress

10. As at 30 June 2017, the overall works for SCL were 75% complete compared to the planned completion rate of 79% 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 mid-2019 and 2021 respectively.

11. With the continuous efforts of the construction team, around 89% of the works of the EWC have been completed as at 30 June 2017 compared to the originally planned completion rate of 96%. As previously reported, the archaeological works at To Kwa Wan Station have caused a delay of at least 11 months and EWC will be completed in end 2019. With the mitigation measures being implemented, it is expected that some of this delay would be recovered and the target commissioning date of the EWC is advanced to mid-2019. As at 30 June 2017, key progress include:

- a. **Track works are now in full swing with 94% complete. Works trains have started to run on EWC tracks in July to assist in various installations including overhead lines inside the tunnels; and**
- b. **Five and seventeen 8-car trains have been put into services on the Ma On Shan Line (“MOL”) and West Rail Line (“WRL”) respectively.**

12. With a number of works fronts opening up, NSC was 55% complete in overall terms as at 30 June 2017 compared to the originally planned completion rate of 56%. Key progress include:

- a. **Tunnel boring machine (“TBM”) “Athena” has completed the excavation of the up-track tunnel between Fenwick Pier Street works site and Admiralty Station in May 2017;**

- b. **The first of eleven Immersed Tube Tunnel (“IMT”) unit was successfully installed in the vicinity of Causeway Bay Typhoon Shelter (“CBTS”) in Victoria Harbour in mid-June 2017; and**
- c. **Testing of new signalling system with the East Rail Line (“EAL”) trains has further extended from Racecourse, University and Fo Tan stations to Tai Po Market, Tai Wo and Fanling stations as planned during non-service hours.**

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 WRL is progressing as planned and 17 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) Sha Tin 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) Sha Tin Section (Section of railway between Tai Wai Station and Ma Chai Hang in Wong Tai Sin)

15. After the structural completion of Hin Keng Station, fitting out works are in progress. Building services and E&M equipment installation and testing / commissioning are on-going at all levels within the station area. The construction of station green roof is scheduled to commence in end of 2017. The construction of entrance of the Emergency Vehicular Access (“EVA”) is underway. Re-provisioning works for Hin Tin Playground are also in progress.

16. For the viaduct and at-grade tunnel box connecting Hin Keng Station, rock filling and drainage works are underway adjacent to the at-grade tunnel box. At the same time, utilities diversion, road drainage works, street lighting installation, as well as carriageway and footpath reinstatement works are being carried out near the viaduct.



Hin Keng Station and part of the viaduct

17. For the tunnel section inside Lion Rock, while track-laying works have been completed in February 2017, overhead line fixing and E&M installation works are 80% and 49% complete respectively. The reinstatement of the works site at Hin Keng portal area of Lion Rock is expected to be completed by the fourth quarter of 2017. As previously reported, because of the complicated geological conditions under the Hin Keng portal area of Lion Rock, the progress of tunnelling works was behind the original schedule. In this regard, a number of mitigation measures had been taken and the tunnel was subsequently broken through in November 2015. The successful recovery of delay can be attributed to the effectiveness of mitigation measures such as increase of blasting charge, re-sequencing of works procedures and adoption of alternative tunnel lining formwork design which allows parallel activities to be carried out. E&M works for the ventilation tunnel running from Ma Chai Hang towards Hin Keng Station are in progress and expected to be completed by the end of 2017.

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

18. Following the completion of track-laying works in March 2017, overhead line fixing and E&M installation works are 95% complete in the tunnels from Ma Chai Hang to Diamond Hill.

19. At Ma Chai Hang, structural works for the ventilation building have been substantially completed while architectural builder's works and finishes are on-going. E&M and building services works are underway and are expected to be completed by the end of 2017. Drainage and civil works for building services at the future EVA are also underway.



Structural works for the ventilation building at Ma Chai Hang

20. The structural works for Fung Tak Emergency Access Point at the junction of Wong Tai Sin Road and Sha Tin Pass Road are substantially completed in June 2017. The fitting out works and E&M installation are on-going. Meanwhile, road works for the upper deck entrance / exit of Wong Tai Sin Public Transport Terminus (“PTT”) are in full swing. The construction of the ground level entrance / exit at Sha Tin Pass Road and the associated road works will commence when the design of road connection is finalised.



Emergency Access Point at Fung Tak

21. E&M, architectural builder's works and finishes and building services installation are in full swing at both concourse and platform levels of the Diamond Hill Station extension.

22. To facilitate the construction of the pedestrian subways connecting the existing Diamond Hill Station and its extension, the third stage of the temporary traffic diversion at Lung Cheung Road continues. During the traffic diversion, the number of traffic lanes at Lung Cheung Road remains unchanged. The structural works of the pedestrian subways commenced after the completion of its excavation works in June 2017. The subways are expected to be completed in the third quarter of 2017. Afterwards, Lung Cheung Road will be reinstated in stages in 2018.



Expansion works for Diamond Hill Station

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

24. As part of the SCL, the Government has entrusted the Corporation to carry out certain improvement works to enhance the connectivity of pedestrian facilities in Tsz Wan Shan area to Diamond Hill Station. This includes the provision of footbridges, covered walkways, lifts and escalators. Tsz Wan Shan is a densely populated area and works sites 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 which had affected the original programme. The contractor is striving to carry out works at

different locations in parallel to catch up on the programme. With the efforts made, the facilities have been opened progressively for public use since 2015. By the end of June 2017, 13 out of 15 facilities have already been opened. The covered walkway at Po Kong Village Road has been opened to the public in June 2017. The remaining footbridges at Yuk Wah Street and Wan Wah Street are expected to be completed in the third and fourth quarters of 2017 respectively.

25. For the tunnels between Diamond Hill and Kai Tak stations, trackside auxiliary as well as electrical and mechanical installation works are underway. Energisation of the overhead line of the section between Hin Keng and Kai Tak stations is expected to take place by the end of 2017.

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

26. Fitting out and E&M works are progressing well at Kai Tak Station. Building services installation and testing / commissioning are also in progress. Construction of footpaths connecting Kai Tak Station and the public roads in vicinity is also underway and is expected to be completed within 2017.

27. As previously reported, the archaeological works at To Kwa Wan Station have caused a delay of 11 months to the original programme of the Tai Wai to Hung Hom Section. A number of delay recovery measures for To Kwa Wan Station, Ma Tau Wai Station and the associated tunnels are implemented to recover some of the delays. For example, by re-sequencing the works procedures and strengthening the site management, the construction of station structure and removal of TBM launching shaft are being carried out in the To Kwa Wan Station site area simultaneously. As the delay recovery measures implemented in the Tai Wai to Hung Hom Section take effect progressively, the target commissioning date of the EWC is advanced to mid-2019.

28. Structural works for To Kwa Wan Station outside the launching shaft have been substantially completed while the works at the launching shaft area are up to the roof level. The roof slab and the remaining above-ground structure are expected to be completed in the third quarter of 2017. The overall structural works were 95% complete. Structural works for the adit connecting the entrance on Nam Kok Road with the station have also been substantially completed. Construction of the entrance at

Nam Kok Road was in progress. Building services installation works have commenced in the station and the adit.



Structural works for To Kwa Wan Station

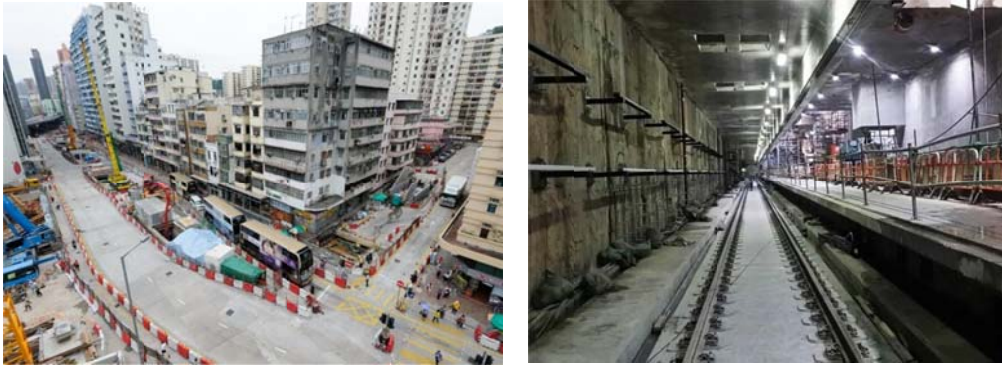
29. The alignment of the footpaths connecting To Kwa Wan Station and the public roads in vicinity has been confirmed after discussions with the relevant government departments. Design of the road works is being developed for construction to commence in the fourth quarter of 2017.

30. Inside the railway tunnels between To Kwa Wan Station and Ho Man Tin Station, track installation was in progress and anticipated to complete by July 2017.

31. Construction of the internal structures at the emergency access shafts at Tam Kung Road and Chi Kiang Street is on-going. Excavation of the upper adit at the Chi Kiang Street shaft has commenced.

32. At Ma Tau Wai Station, the overall structural works were over 96% complete. Fitting out works and building services works are in full swing at all levels.

33. Structural works for the ventilation shaft in front of To Kwa Wan Market and the four station entrances of Ma Tau Wai Station are on-going and targeted to be completed by the end of 2017. To facilitate the construction of the station and station entrances, the current temporary traffic arrangement on Ma Tau Wai Road will be maintained until September 2017 when the road is substantially reinstated to two-southbound and two-northbound traffic lanes.



Construction works of Ma Tau Wai Station

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

34. Under the 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, structural works of the tunnel have been completed and track works are also substantially completed. For the tunnel connecting the existing EAL to the extension of Hung Hom Station to form the NSC, structural works were also substantially completed for the subsequent track works to commence.

35. To facilitate the construction of the EWC tunnels, Chatham Road North and its slip road have been diverted since 2013. Following the completion of structural works of EWC tunnels the Chatham Road North westbound was reinstated in early December 2016. Chatham Road North eastbound was also reinstated and re-opened to the public in June 2017. The reinstatement for the remaining part of the road is expected to be completed by the end of 2017 or early 2018.



Structural works under Chatham Road North and near Winslow Street

36. The installation works for the noise enclosures near EAL and Oi Sen Path have been completed in April 2017. Reinstatement of Oi Sen Path walkway is in progress and is expected to be completed in the fourth quarter of 2017.

37. 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 have been built under the existing station podium. To prepare for the future arrangements, modification works are now being carried out in stages. The first two stages of concourse modification works were completed in March 2016 and February 2017 respectively and the modified northern and southern concourses were re-opened. Stage three modification works has commenced in March 2017 to install building services provisions, new escalators and lifts to connect the new SCL platforms and the concourse.

38. All structural works for EWC and NSC platforms, as well as all the plant rooms adjacent to the new Hung Hom Station were substantially completed in the second quarter of 2017. Escalators installation and building services works are in progress. With additional manpower deployed and works re-sequencing implemented, all works fronts have been carried out in full swing to progressively recover the four-month delay from the original schedule which arose due to the complicated geological conditions under the station podium, as well as the limited space and headroom available for construction works.

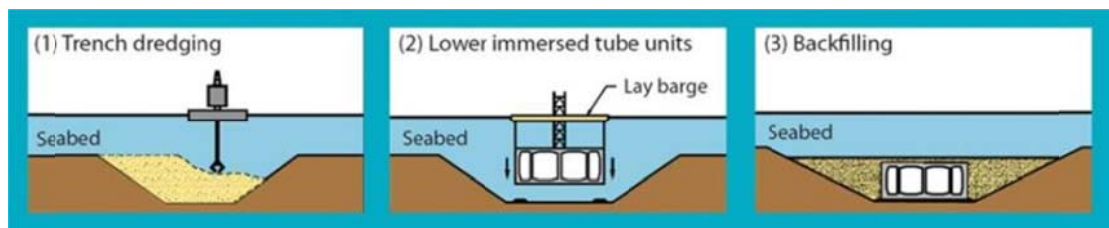
39. To facilitate future railway operations, the stabling sidings for the EWC trains are now under construction at the former Hung Hom Freight Yard. Structural works, building services and E&M works are now underway with track-laying works substantially completed.



Track-laying works at Hung Hom stabling sidings

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

40. 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. Structural works for this section of tunnel have been completed in June 2017. The pipe piles at the north end of the cofferdam have been removed to prepare for the connection with the other sections of the cross-harbour tunnel constructed by IMT method (See the diagram below).



Construction Method of IMT

41. The IMT units were fabricated in the ex-Shek O Quarry and the works have been substantially completed in March 2017. The first of 11 IMT pre-cast units was towed out of the casting yard in early June 2017. It was then towed to a temporary holding area near Tseung Kwan O for installation of surveying towers and floating pontoons, to facilitate accurate installation into the dredged trench. After the fitting-out works, the first fully equipped IMT unit was towed to Victoria Harbour and was successfully installed in the vicinity of CBTS on 19 June.



The first IMT unit is successfully immersed onto the seabed of Victor Harbour (This photo captured the first immersed tube tunnel during immersion)

42. In the Victoria Harbour, the Contractor continues to place the gravel bed within the excavated trench for the installation of the IMT units. The fairway within the Victoria Harbour has been diverted and maintained since late June 2017 to facilitate the IMT immersion and installation works. The Corporation will continue to maintain close communication with Marine Department and the fairway users so as to minimise the impacts. After the IMT installation, the seabed will be restored.

43. Since part of the Central-Wan Chai Bypass (“CWB”) project construction works within the CBTS has been completed, SCL’s dredging works have started within the vacated area in CBTS for the installation of another IMT unit. Mooring re-arrangement will be implemented in phases according to the works progress of CWB and the Corporation will continue to liaise with Marine Department and the stakeholders within CBTS to minimise the possible impacts.

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

44. Following the completion of tunnel excavation works by TBMs “Athena” and “Zhi-nu” from CBTS to Exhibition Station in November 2016, construction of the walkways and track bed along the tunnels and excavation of a sump pit in the up-track tunnel have commenced.

45. At the Tunnel Approach Rest Garden, reinstatement of the underground box culvert has commenced and underpinning of the flyover

has been completed. Reinstatement of the rest area and recreational facilities is targeted to commence in the fourth quarter of 2018.

46. At the former Police Officers' Club ("POC") in Causeway Bay, excavation works for constructing the ventilation facilities has commenced. Excavation works are expected to be completed by the end of 2017 following which the structural concrete works for the facility will commence. Reinstatement work of the POC is targeted to commence in the second quarter of 2018.



Excavation of the ventilation facilities at the former Police Officers' Club works site

47. For the tunnel on the western side of Exhibition Station, TBM "Athena" has completed the up-track tunnel boring works between Fenwick Pier Street works site and Admiralty Station in May 2017. "Athena" is being dismantled and transported back to the shaft at Fenwick Pier Street for re-assembly. It will start the boring works for the 450m long down-track tunnel towards Admiralty Station in the third to fourth quarter of 2017. Ground treatment and preparation works for "Athena" to pass beneath the existing Tsuen Wan Line ("TWL") tunnels have been completed.

48. In Wan Chai North area, construction works for Exhibition Station and the relevant railway facilities are underway. The diaphragm walls and pipe piles at the ex-Wan Chai North public transport interchange and ex-Wan Chai swimming pool sites have completed in phases and bulk excavation commenced in July and August 2017 respectively. For the diaphragm walls and pipe piles at Fleming Road site, they are expected to be completed in early 2018. Due to the limited area in Wan Chai North, temporary traffic management are being implemented in phases in Wan Chai North to create works areas for the abovementioned works. The

latest stage of temporary traffic management which involves shifting the junction between Convention Avenue, Fleming Road and Expo Drive East was implemented in phases in April and May 2017. During implementation, the number of traffic lanes will remain unchanged at peak hours.



The junction between Convention Avenue, Fleming Road and Expo Drive East shifted eastward in phases

49. The piece of land occupied by the former Harbour Road Sports Centre is required for the construction of Exhibition Station. Upon the opening of the new Sports Centre for public use in May 2017, demolition of the original Sports Centre commenced was completed in June 2017. Detailed ground investigation works at the original Sports Centre had followed to ascertain the underground condition. At this moment, the underground condition of the concerned area has yet to be ascertained.

50. Regarding the large metal object found on the seabed within the reclamation area under the Wan Chai Development Phase II (“WDII”) project, the reclaimed land was planned to 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 handed over the relevant site by phases in January, February and July 2017, with the handover date of part of the works areas deferred by seven months.

51. As previously reported, the delay handover of critical lands and the enabling works of convention facilities above Exhibition Station has induced a delay of six months in the completion of Exhibition Station and will bring the completion of NSC to 2021.

52. Apart from these, the handover date of a parcel of land under the WDII project near Fenwick Pier Street has also been deferred for about four to six months. The sites concerned were handed over to the Corporation in phases until March 2017 for the purpose of interfacing works at the West Approach Tunnel of Exhibition Station, as well as the tunnelling works to Admiralty Station.

53. As mentioned in the previous progress report in May, a pipe pile of 40 meters was found underground within the parcel of land referred to Paragraph 52 above, which is in close proximity to other existing permanent foundation structures. In addition, the construction of the last section of a diaphragm wall cofferdam at this location which had been entrusted to WDII but has yet to be completed. As a result of these uncompleted works, the Corporation and its Contractor have to get through these engineering challenges, which also entailed additional construction cost and a further delay of three months on top of the previously reported six months delay.

54. After gaining access to the above-mentioned works site, the Corporation has carried out ground investigation works and detailed study on the construction method. As remedial measures, grouting works were carried out in the vicinity of the abandoned pile to replace the planned diaphragm wall, and further additional strengthening works will be required at a later stage. Excavation works for the area is expected to commence by the end of 2017.

55. According to the latest site handover situation and the construction challenges, the Corporation has explored possible measures to improve the progress including allocating additional plants and labour resources 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.

56. The future NSC of the SCL will terminate at Admiralty Station, which will become an interchange hub for the SCL, Island Line, TWL and South Island Line (“SIL”). 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. A 200-metre-long section of this overrun tunnel extending south of the Admiralty Station to Hong Kong Park has been entrusted to the SIL (East) project and the excavation works were completed in the second quarter of 2015. Construction of the remaining 700-metre-long section of the SCL overrun

tunnel extending from Hong Kong Park by drill and blast was completed in June 2017, signifying the completion of all tunnel blasting works for the SCL. Tunnel waterproofing and drainage works then started.



SCL overrun tunnel was completed by drill and blast method in June 2017

57. Construction of partition walls and slabs for the platforms and the relocation of Environmental Control System plant room and associated E&M facilities at the extended Admiralty Station are now underway.

NEW TRAINS

58. To facilitate the future operation of the NSC, 37 sets of 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 features including dynamic route map and gangway end display system. The locations of the doors of the new trains are also improved by being evenly spaced along the trains, bringing more convenience to passengers when alighting and boarding.



Dynamic test on the EAL during non-service hours

59. On the other hand, 17 sets of new trains for EWC are being delivered to Hong Kong in batches. Stringent testing and commissioning for the delivered new trains are underway at Pat Heung Depot and Tai Wai Depot. Dynamic test is also underway at the existing WRL and MOL during non-service hours.

SERVICE ENHANCEMENT BY TRAIN CONVERSION

60. Apart from the procurement of new trains, some of the existing train compartments on MOL, WRL and EAL are also undergoing modification and reconfiguration, together with the newly procured train cars to form the converted 8-car trains for the EWC. WRL trains have been gradually converted into 8-car trains to facilitate the 8-car train operation in EWC since January 2016. As at end of June 2017, a total of 17 8-car trains have been put into service on WRL. The conversion of all 28 WRL trains is expected to be completed in 2018.

61. On MOL, the existing 15 4-car trains have been progressively replaced with converted 8-car trains or new 8-car trains since January 2017. 5 MOL 8-car trains have been running smoothly as at end of June. Tailor-made signage and additional platform assistants are in place to guide passengers to the designated waiting area for boarding. When all the 4-car trains are replaced with 8-car trains by end of 2017, the overall carrying capacity on the MOL will be doubled. The complicated process of train conversion and time limitation on train testing paths during non-service hours pose challenges to the conversion programme. Coordination work among various parties, including the teams responsible for train operations, daily maintenance and APG installations, has been further

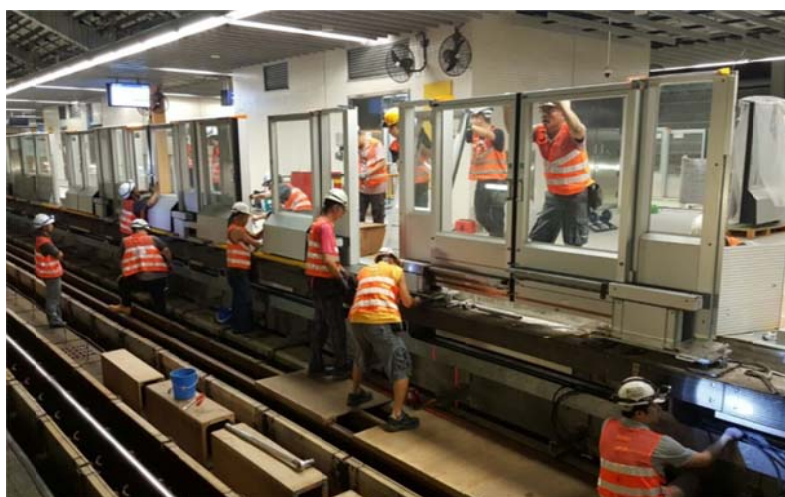
enhanced to ensure that every rail section is being fully utilised for different works.



5 8-car trains for the MOL have entered service (as at end of June 2017)

IMPROVEMENT WORKS FOR THE OPERATING RAILWAY FACILITIES

62. The retrofitting works of APGs along the MOL are in full swing. The retrofitting works at Tai Wai, Sha Tin Wai, City One and Shek Mun stations have been completed, while works at other remaining 5 stations continue. The Corporation is committed to completing the retrofitting works of APGs at the stations on MOL in 2017.



Retrofitting works of APGs

63. 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 Mong Kok East Station and construction of equipment rooms for the signalling and communication systems have been substantially completed. Platform strengthening works at Hung Hom Station are in progress. On the other hand, the locations of the doors of the existing trains and the new trains are different. In order to make the APGs along the EAL match with the new locations of the train doors, the retrofitting works will commence after the EAL is entirely operated by new trains.

64. For the arrangement of the replacement of 12-car trains with 9-car trains on the EAL, in view of passengers' concern on the carrying capacity of new trains, the Corporation is reviewing the feasibility of launching the new trains progressively upon the commissioning of EWL and its diversion effect. Hence, the installation programme of APGs is required to be adjusted accordingly.

65. 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 in trains and at trackside is underway. Installation of equipment at the trackside along Fo Tan, Racecourse, University, Tai Po Market, Tai Wo and Fanling stations has been substantially completed. The installation works have fully commenced at the trackside along the EAL between Hung Hom and Lo Wu / Lok Ma Chau Stations. Testing of new signalling system with EAL trains have further extended from track sections at Racecourse, University and Fo Tan stations to Tai Po Market, Tai Wo and Fanling stations during non-service hours in early May 2017. Testing track length had been extended from 6km to 19km. It will then proceed to the track sections at Sheung Shui, Lok Ma Chau and Lo Wu stations.

66. 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 most 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 service hours to implement the replacement works.

67. Since railway safety is always our top priority, the Corporation has appointed independent experts 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 with inconvenience to passengers. The Corporation is closely monitoring 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

68. 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.

69. Apart from the regular progress updates to the Subcommittee members and respective District Councils, another major channel for communicating with the local communities is the Community Liaison Groups, which have been set up across districts to provide regular updates

on possible impacts of works relating to the SCL. 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 1,200 enquiries since October 2012.

EMPLOYMENT OPPORTUNITIES

70. As at 30 June 2017, about 6,201 construction workers and technical / professional staff members are employed for the SCL project. Labour shortage continues to pose challenges to the project – the project is short of around 746 construction workers. 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 735 trainees with 476 having completed the trade test and continuing their careers in the field.

CONCLUSION

71. Members are invited to note the above information.

MTR Corporation Limited
September 2017

Expenditure report as at 30 June 2017

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	43,734.0	36,169.1	2,060.1
E&M works	13,901.8	3,657.8	374.9
Total	57,635.8	39,826.9	2,435.0

* The estimated amount of unresolved claim: Amount claimed (\$3,949.0 million) – Interim award (\$1,514.0 million) = \$2,435.0 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	72	528.7	480.7	500	3,574.1	1,514.0
E&M works	9*	0	0	92	374.9	0
Total	81	528.7	480.7	592	3,949.0	1,514.0

* 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 June 2017, the Corporation received 673 substantiated claims and the amount claimed in total was about \$4,477.7 million, representing 7.8% 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 June 2017, 81 cases were resolved and about \$480.7 million was

awarded, representing about 0.83% 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 \$1,514.0 million was made for some cases.

Overall works progress of the SCL as at 30 June 2017

Overall works completed : 75%

Percentage completed as originally planned ⁽¹⁾: 79%

(A) Culminated progress of 27⁽²⁾ major civil contracts awarded :

Contract No.	Contract Name	Percentage completed
1101	Modification of Ma On Shan Line	100%
1102	Hin Keng Station and Approach Structures	98%
1103	Hin Keng to Diamond Hill Tunnels and Fung Tak Public Transport Interchange	98%
1106	Diamond Hill Station Extension	89%
1107	Diamond Hill to Kai Tak Tunnels	100%
1108	Kai Tak Station and Associated Tunnels	99%
1108A	Kai Tak Barging Point Facilities	100%
1109	Stations and Tunnels of Kowloon City Section	93%
1111	Hung Hom North Approach Tunnels	97%
1112	Hung Hom Station and Stabling Sidings	95%
1113	Reprovisioning of New Territories South Animal Management Centre and Shatin Plant Quarantine Station	100%
1114	Pedestrian Links at Tsz Wan Shan	97%
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	78%
1120B	Trackwork and Overhead Line for SCL Phase 2	12%
1121	North South Line (NSL) Cross Harbour Tunnels	75%
1122	Admiralty South Overrun Tunnel	50%
1123	Exhibition Station and Western Approach Tunnel	42%

1124	Admiralty SCL Related Works	13%
1125	Police Sports and Recreation Club Enhancement Works	100%
1126	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	100%
1128	South Ventilation Building to Admiralty Tunnels	59%
1129	SCL - Advance Works for NSL	100%
11209	Platform Modification and Associated Works at East Rail Line	98%
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.

(B) Culminated progress of 30 major E&M contracts awarded :

Contract No.	Contract Name	Percentage completed
1141A	New Rolling Stock for SCL Phase 1	88%
1141B	New Rolling Stock for SCL Phase 2	43%
1151	Rolling Stock Modification and New Train Cars for SCL Phase 1	74%
1152	Signalling System for SCL Phase 1 & Signalling System Modification for MOL and WRL	81%
1152B	Signalling System for SCL Phase 2	63%
1153	Tunnel ECS for SCL Phase 1	59%
1153B	Tunnel ECS for SCL Phase 2	24%
1154	Platform Screen Doors for SCL Phase 1 & APG Retrofit for MOL	86%
1154B	Platform Screen Doors for SCL Phase 2 & APG Retrofit for EAL	7%
1155	Power Supply System and Trackside Auxiliaries for SCL Phase 1	80%
1155B	Power Supply System and Trackside Auxiliaries for SCL Phase 2	24%
1159	Lifts for SCL Phase 1	59%
1162	TETRA System for SCL Phases 1 & 2	80%
1162B	Radio Distribution Network System for SCL Phases 1 & 2	38%
1163	AFC System and SAM System for SCL Phases 1 & 2	32%
1164	Building Services for Diamond Hill Station	64%
1164B	Building Services for SCL Hong Kong Island Section	2% ⁽³⁾
1165	Building Services for Hin Keng Station, Ma Chai Hang Ventilation Building and Fung Tak Emergency Access	69%
1166	Main Control System for SCL Phase 1	83%
1166B	Main Control System for SCL Phase 2	43%
1169	Communications System for SCL Phase 1	78%
1169B	Communications System for SCL Phase 2	15%

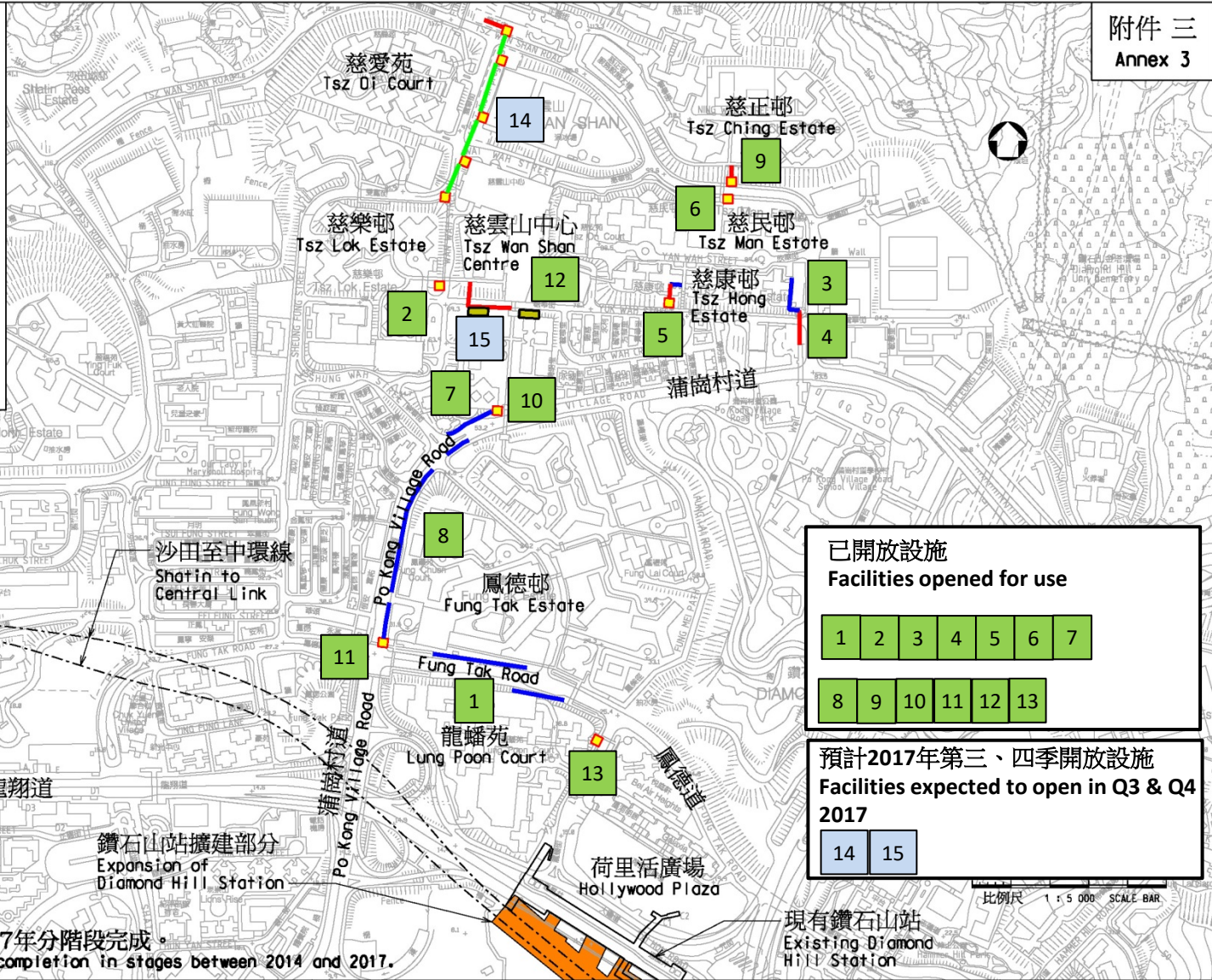
1172	Escalators for SCL Phase 1	62%
1172B	Lift and Escalators for SCL Phase 2	11%
1173	Building Services for Hung Hom Station and Hung Hom Stabling Sidings	66%
1175	Building Services for Kai Tak Station	95%
1176	Building Services for To Kwa Wan Station and Ancillary Building	37%
1177	Building Services for Ma Tau Wai Station and Ancillary Building	39%
1183	EAL Signalling System Modification for SCL	100%
1191	Floodgate System for SCL Phase 2	20%

Note:

(3) E&M Contract 1164B was awarded on 14 March 2017.

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	7
8	9	10	11	12	13	

預計2017年第三、四季開放設施
Facilities expected to open in Q3 & Q4 2017

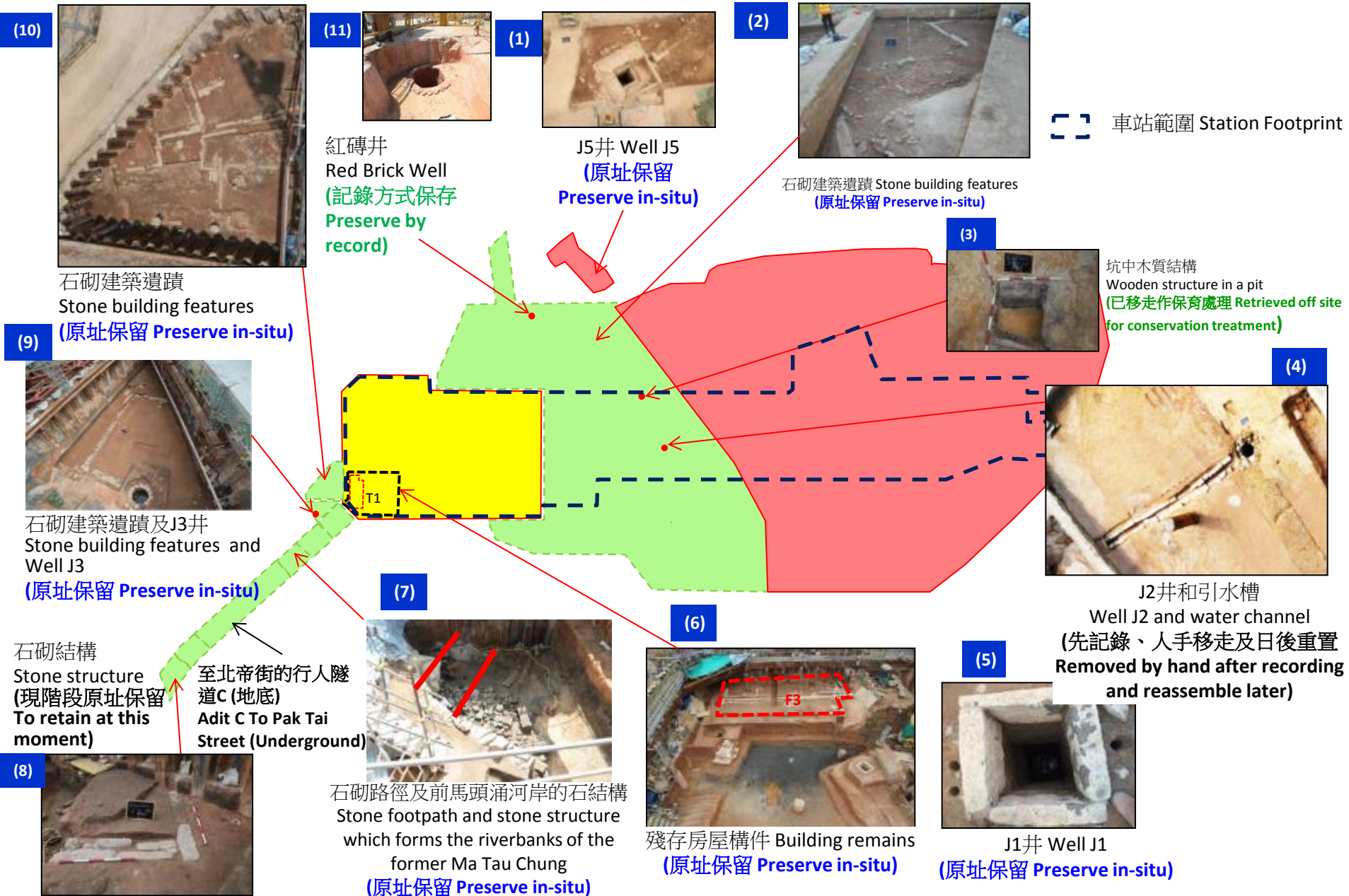
14	15
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有關設施預計在2014年至2017年分階段完成。
The facilities are scheduled for completion in stages between 2014 and 2017.

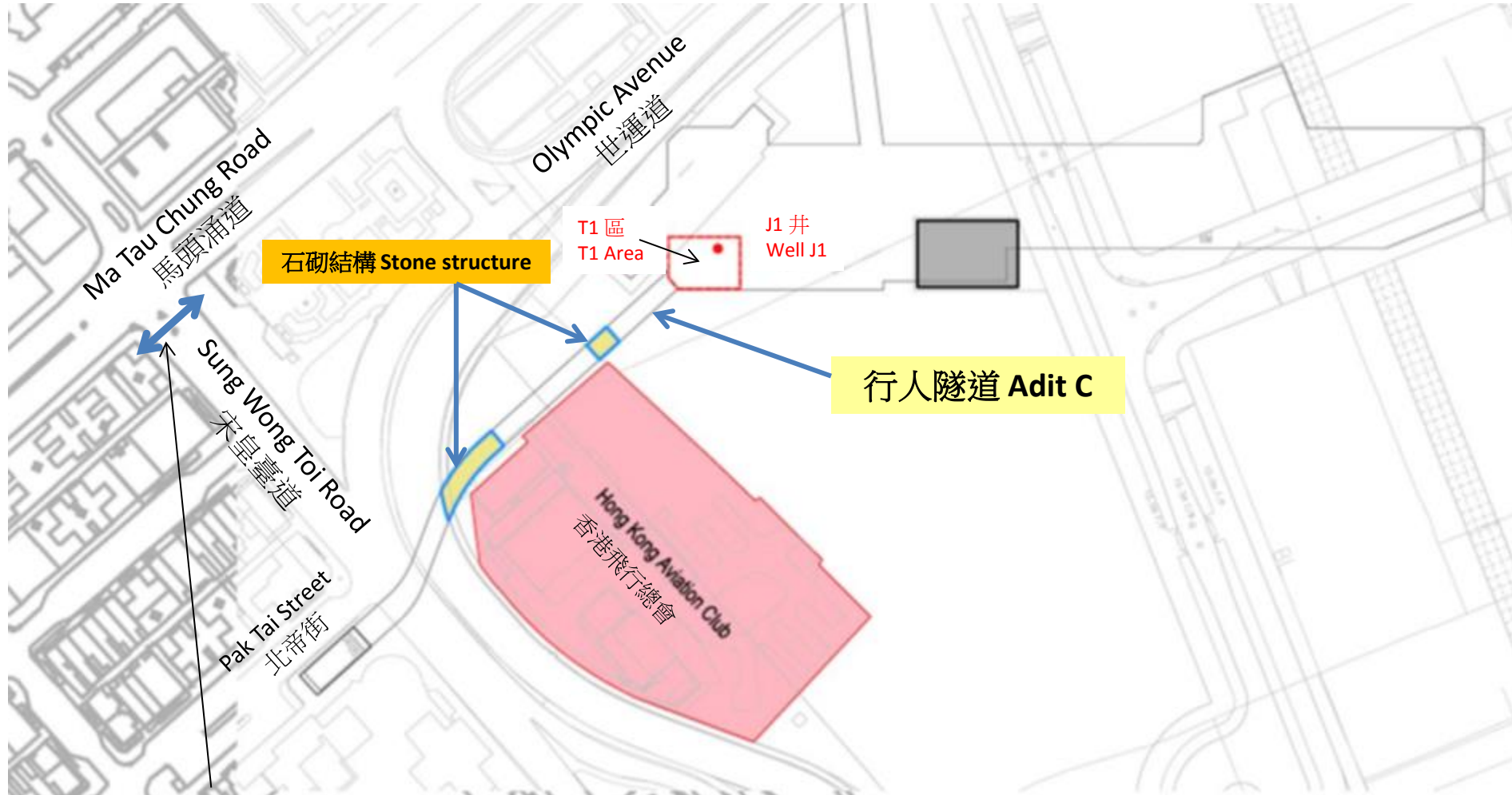
圖則名稱 drawing title
沙田至中環線 - 慈雲山區與沙田至中環線鑽石山站的行人接駁設施
Shatin to Central Link - Pedestrian connecting facilities between Tsz Wan Shan Area and Diamond Hill Station of Shatin to Central Link

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