Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways
Progress Update of the Construction of the Shatin to Central Link
(As at 31 March 2017)

Introduction

This paper reports to Members on the progress of the main construction works of the Shatin to Central Link ("SCL") as at 31 March 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 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

[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).

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.

7. Moreover, an officer at Assistant Director level of HyD holds monthly Project Coordination Meetings with the General Managers and Project Managers of 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 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.

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

11. The advance railway works of SCL include the expansion of the existing Admiralty Station and the construction of Ho Man Tin Station to accommodate the railway facilities of SCL. 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 facilitates at Admiralty Station for SCL. Hence, the SCL will have to share an overall cost of about $3,350 million (in money-of-the-day prices) for the advance works at Admiralty Station. 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.

12. MTRCL advised HyD in 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 information provided by MTRCL to HyD in August 2015, the relevant construction cost of Ho Man Tin Station shared by SCL would remain within the budget under the advance railway works of SCL (**63TR**). According to the information provided by MTRCL, HyD and its M&V consultant had conducted a comprehensive assessment. Having considered the latest construction cost estimate of Admiralty Station and Ho Man Tin Station, it was opined that the contingency of 63TR – SCL advance railway works would be insufficient to meet the additional cost of the relevant construction works for the expansion of Admiralty Station. Therefore, we have explained to the Legislative Council ("LegCo") Subcommittee on Matters Relating to Railways ("Subcommittee") in December 2016 for the proposed increase of the Approved Project Estimate ("APE") of 63TR - 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) so as to cater for the additional cost for the advance works, and the Subcommittee supported the proposal. We submitted a paper on the proposed increase in the APE of 63TR to the Public Works Subcommittee ("PWSC") on 18 January 2017 and the PWSC supported the

proposal at its meeting on 5 April 2017. The proposal will be submitted to the Finance Committee for approval with a view to obtaining the additional fund in the second quarter of 2017.

Latest Progress of the Main Works

13. The progress report of the SCL project as at 31 March 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)

14. 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, the progress is generally in line with the planned programme. 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. In addition, the installation works for the Automatic Platform Gates ("APG") at all stations along Ma On Shan Line continue. The progress is in line with the programme and is expected to be completed in 2017.

15. Tunnel lining construction inside the Hin Keng to Ma Chai Hang tunnel was completed in September 2016 and track laying works were completed in March 2017. Trackside auxiliaries and overhead line installation works are in progress, the progress is on schedule.

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

16. Building services works and E&M works inside the SCL Diamond Hill Station are in progress. Foundation 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 excavation works are in progress.

It is anticipated that the structural works for the adits will 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.

17. The excavation and tunnel lining construction works 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 in September 2016 and the track laying works were completed in March 2017. Trackside auxiliaries and overhead line installation works are in progress and in line with the programme. The construction of the ventilation building at the former Ma Chai Hang Recreational Playground continues.

18. 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**), 12 out of the 15 items of facilities have already been opened for public use since January 2016, 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) and the lift next to Ching Hong House of Tsz Ching Estate (opened in January 2017). The covered walkways at Po Kong Village Road near Fung Tak Estate is anticipated to be opened to the public in the second quarter of 2017. 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

19. The construction of the main structure of the Kai Tak Station and the tunnel structures between Kai Tak Station and To Kwa Wan Station were completed in July 2015 and April 2016 respectively. 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 and are anticipated to be completed in the second quarter of 2017.

To Kwa Wan Station

20. 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.

21. 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.

22. 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 entre 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.

23. 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.

24. 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.

25. Moreover, 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.

26. 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 are still in progress. The construction of the platform and concourse structure was substantially completed, and the construction of the station roof was in progress. It is anticipated that the station structure would be completed in the third quarter of 2017, and backfilling works of the station would be commenced subsequently. The TBM works for the tunnel between To Kwa Wan Station and Ho Man Tin Station were completed in August 2016. The track laying works within the tunnel are in progress, which is on schedule.

27. 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

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. 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. Construction of the Ma Tau Wai Station concourse, upper track slab and lower track slab was completed. 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.

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. Construction of tunnel structural work of the section between Ho Man Tin Station and Hung Hom Station was substantially completed in April 2016 and the track laying works commenced in February 2017. Regarding the temporary traffic diversions along Chatham Road North implemented for the tunnelling works from end 2014, according to the progress of works, the relevant roads affected have been being reinstated to its original alignment in phases since December 2016. The first phase of reinstating the westbound carriageway was completed in early December 2016. Reinstatement of the eastbound carriageway is in progress. For the section near Princess Margaret Road connecting the East Rail Line and the new platforms of Hung Hom Station, excavation works were substantially completed in July 2016 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 conditions were encountered, thereby causing a delay of about four months to 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 new platform and tunnel structure were substantially completed and the 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 tunnel excavation works in the temporary cofferdam at Hung Hom landfall were completed and the tunnel structural works are 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 continue. The fabrication of all IMT pre-cast units at the ex-Shek O Quarry was substantially completed in March 2017. Towing and installation of the IMT units in Victoria Harbour and CBTS were scheduled for commencement in mid- 2017.

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 was required 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 re-provisioning of Harbour Road Sports Centre (HRSC) was completed and was opened to public in May 2017. MTRCL has started the advance works for the demolition of the old HRSC immediately. The construction of Exhibition Station at the location of the existing HRSC could start after the completion of the demolition works.

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 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 and handle the underground obstructions along the tunnel alignments. During construction, it was necessary to closely monitor and devise emergency measures to ensure safety.

35. The excavation works of the up-track and down-track TBM tunnels from CBTS to Exhibition Station were completed in July and November 2016 respectively. The excavation of the up-track TBM tunnels from Convention Avenue to Admiralty Station commenced in March 2017. The TBM successfully passed underneath the MTR South Ventilation Building of Tsuen Wan Line in April 2017. If the works continue smoothly, the excavation works of this up-track tunnel are anticipated to be completed in mid 2017. The TBM will be demolished afterwards and transported back to the Fenwick Pier Street site for re-assembling for subsequent down-track tunnel excavation works towards Admiralty Station. In addition, for the cut and cover Western Approach Tunnels to the west of Exhibition Station, the construction of the diaphragm wall and excavation works underneath the Expo Drive are in progress.

36. The construction of diaphragm walls at the work site of Exhibition Station at the ex-Wan Chai Ferry Pier Public Transport Interchange was completed. In April 2017, MTRCL implemented a new temporary traffic management scheme in Wanchai North by shifting Convention Avenue westbound northward and the junction of Convention Avenue, Fleming Road, Expo Drive East and P2 Road eastward. Part of the Fleming Road traffic lanes has then become works site for the construction of diaphragm walls of Exhibition Station. It is expected that a majority of diaphragm wall panels and pipe piles would be constructed by the fourth quarter of 2017. The bulk excavation will then commence subsequently.

37. 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.

38. 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, with the coordination of CEDD, part of the work sites have been handed over to the SCL contractor in January and February 2017. CEDD indicated that the handover date of the remaining 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.

39. 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.

40. 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.

41. Besides, an abandoned pipe pile has been discovered within the works site mentioned in paragraph 40 above and the pipe pile 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.

42. 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 41 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.

43. 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 reprovisioning of the facilities. As such, the uncertainties of the geological conditions in these areas may affect the progress and cost of the 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 and the current conditions of some of the utilities are unsatisfactory in which repairing

works are required. 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 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 41 may also lead to additional construction cost.

Conclusion

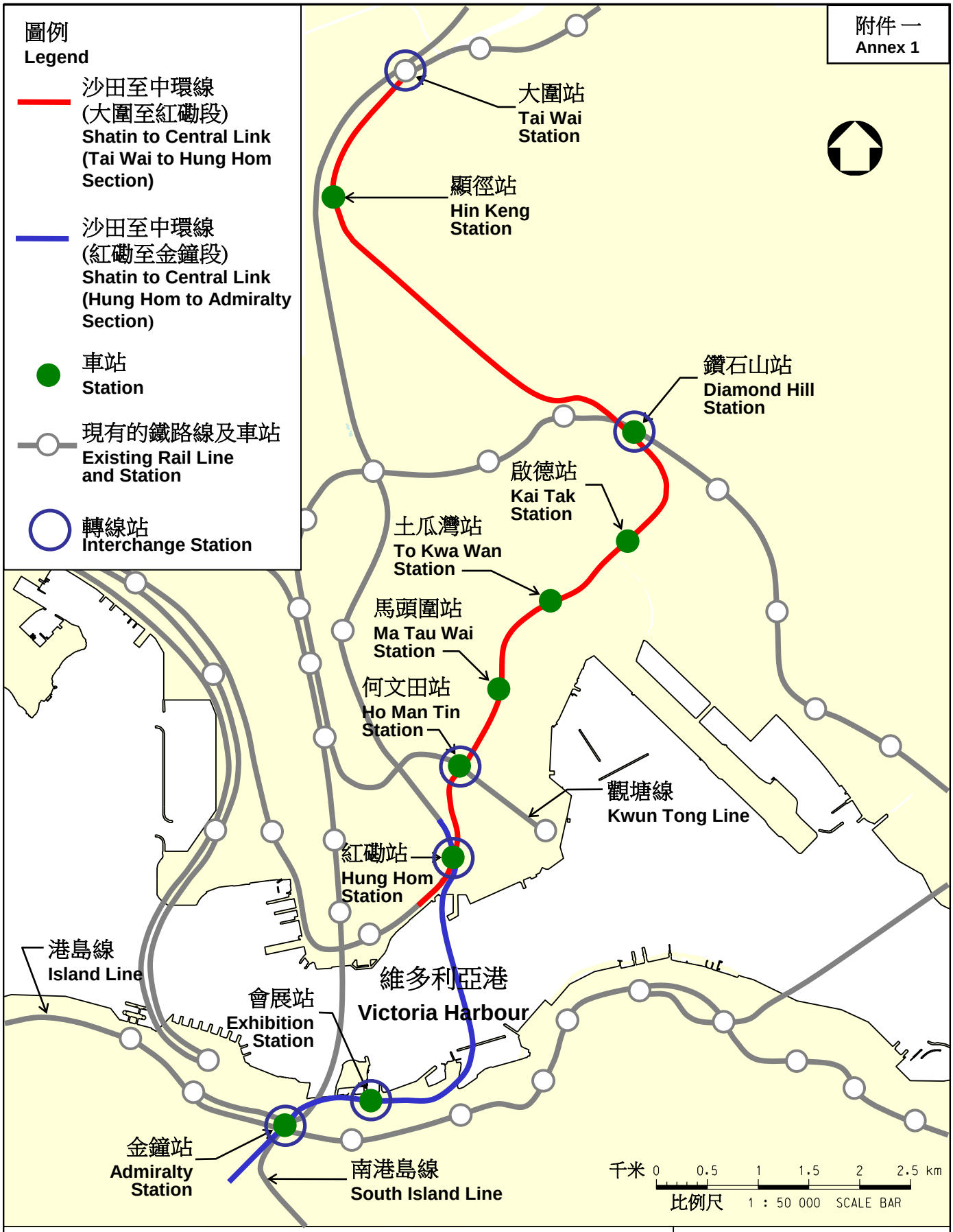
44. In view of the above assessments as mentioned in paragraphs 14 to 43 above, taking into account the delay of about 11 months to the "Tai Wai to Hung Hom Section" of SCL arising from the archaeological works, archaeological discoveries and conservation options for archaeological features at To Kwa 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.

45. 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 14 to 43 above.

46. MTRCL pointed out that the SCL project was complicated and only 50% of the Hung Hom to Admiralty Section had been completed as at 31 March 2017, adding that the remaining 50% of the Section would still be affected by a number of factors as stated in paragraphs 31 to 43 above. In order to provide a more accurate estimate for the cost of the main works, it is expected that a more practical assessment can be conducted 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.

47. 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
May 2017



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.
HRWSCL003-SK0454

鐵路拓展處 RAILWAY DEVELOPMENT OFFICE

路政署
HIGHWAYS DEPARTMENT

A4 210X297

Annex 2

Legislative Council Panel on Transport
Subcommittee on Matters Relating to Railways

Progress Update of the Shatin to Central Link
(As at 31 March 2017)

INTRODUCTION

This report updates Subcommittee members on the progress of Shatin to Central Link ("SCL") as at 31 March 2017.

OVERVIEW OF THE SCL PROJECT

Cost and expenditure

2. Since mid-2012, 27 major civil and 30 major electrical & mechanical ("E&M") contracts[1], 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 51, 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 in its interim results on 9 August 2016, 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 last one of which is only expected to be handed over in July 2017, and despite the fact that the North South Corridor is about 50% complete as at late March 2017, 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. Hence, this detailed review 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 31 March 2017, the overall works for SCL were 72% complete compared to the planned completion rate of 76% 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 87% of the works of the EWC have been completed as at 31 March 2017 compared to the originally planned completion rate of 94%. 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 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. Key progress include:

a. **74% of the track works have been completed along the EWC after the full tunnel breakthrough**; and

b. **Four and fourteen 8-car trains have been put into service on the Ma On Shan Line ("MOL") and West Rail Line ("WRL") respectively.**

12. With a number of works fronts opening up, NSC was 50% complete in overall terms as at 31 March 2017 compared to the originally planned completion rate of 52%. Key progress include:

a. **Tunnel boring machine ("TBM") "Athena" has started her journey from Exhibition Station to Admiralty Station in March 2017;**

b. **The fabrication of all the IMT units for the cross harbour rail tunnels has been completed in March 2017. The casting yard at Shek O is being re-watered, and the first of eleven**

units will be towed to Victoria Harbour for installation in mid-2017 onwards; and

c. **Testing of new signalling system with the East Rail Line ("EAL") trains has further extended from Racecourse Station and University Station to Fo Tan Station 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 14 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.

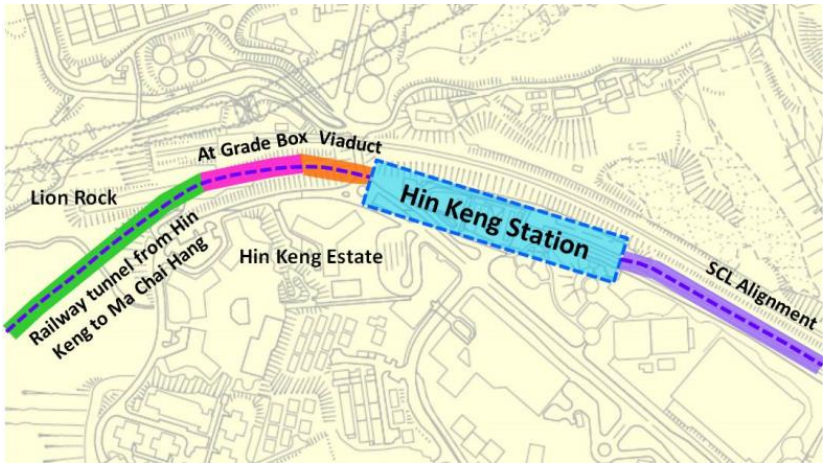
Progress in different sections

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 advance works for the construction of the Emergency Vehicular Access (EVA), including the related underground utilities diversions are underway. Re-provisioning works for Hin Tin Playground are in progress. The playground is expected be re-provisioned before the commissioning of the SCL.



Location map of Hin Keng Station and associated tunnel structures

16. For the viaduct and at-grade tunnel box connecting Hin Keng Station, the utilities diversion works, road drainage, street lighting, as well as carriageway and footpath reinstatement works under the viaduct section are in progress.


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 works are in progress. The reinstatement of the works site at Hin Keng portal area of Lion Rock is also underway. 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, trackside auxiliary and E&M installation works are underway in the tunnels from Ma Chai Hang to Diamond Hill.

19. At Ma Chai Hang, structural works for the ventilation building are on-going. E&M and building services works commenced in January 2017 and expected to be completed by the end of 2017.

Structural works for the ventilation building at Ma Chai Hang

20. The construction activities of the Fung Tak Emergency Access Point at the junction of Wong Tai Sin Road and Sha Tin Pass Road have been re-sequenced in order to secure the track laying works programme. The covered walkway at Po Kong Village Road (near Fung Tak Estate) is expected to open for public use in the second quarter of 2017. Structural works for the adjacent Public Transport Terminus were substantially complete, while E&M and building services works are in progress.

21. E&M and building services installation are in full swing at both concourse and platform levels of the Diamond Hill Station extension. Fitting-out works are also in progress.

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. All foundation works for the pedestrian subways have been completed and bulk excavation is in progress. Structural works will follow and 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. The track-laying works at the tunnel between Diamond Hill Station and Kai Tak Station have been completed.

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 to Diamond Hill Station. 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. With the efforts made, the facilities have been opened progressively for public use since 2015. By the end March 2017, 12 out of 15 facilities have already been opened. The remaining covered walkway at Po Kong Village Road is expected to be completed in the second quarter of 2017, while the

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 and E&M works are progressing well at Kai Tak Station. The fitting out works are expected to be substantially completed in the first half of 2017. Building services installation and testing / commissioning are also in progress. Track works of the station were substantially completed in March 2017 while trackside auxiliary and E&M installation works are underway.

26. 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.

27. Structural works for To Kwa Wan Station are on-going, while the construction of roof slabs is underway. With the delay recovery measures as mentioned above, the concourse slab of the main station were substantially completed in March 2017. The overall structural works were 78% complete. Excavation and structural works for the adit connecting with the entrance on Nam Kok Road were 98% and 91% complete respectively. Building services installation works have commenced in the subway connecting To Kwa Wan Station and Nam Kok Toad and part of the station areas in March 2017.

Structural works for To Kwa Wan Station

28. Inside the railway tunnel between To Kwa Wan Station and Ho Man Tin Station, construction of walkways and track bed along both tunnels has been substantially completed and track installation commenced in February 2017.

29. While shaft excavation of the emergency access for the railway tunnels near Tam Kung Road has been completed, permanent lining works are in progress. For the emergency access at Chi Kiang Street, excavation of the shaft and the lower adit connecting the shaft with the railway tunnel has been completed. Permanent lining works for the lower adits and the shaft are underway and the excavation for the upper adit connection will commence soon.

30. At Ma Tau Wai Station, the overall structural works were over 90% complete. Fitting out works and building services works are in full swing at the concourse level and will soon commence at the upper platform level.

31. To facilitate the construction of the station and station entrances, the temporary traffic arrangement on Ma Tau Wai Road will continue with public access maintained for two southbound and one northbound traffic lanes. A section of the northbound lane of Ma Tau Wai Road between Lok Shan Road and Sheung Heung Road was re-opened in late December 2016. The remaining section of the northbound lane will re-open in phases from the second half of 2017, so that two southbound and two northbound traffic lanes will be provided for public use then.

32. Excavation for the four station entrances, which are located on 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, were completed and structural construction works have commenced. Structural works for the ventilation shaft in front of To Kwa Wan Market from upper platform level to concourse level continue.

Construction works of Ma Tau Wai Station

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

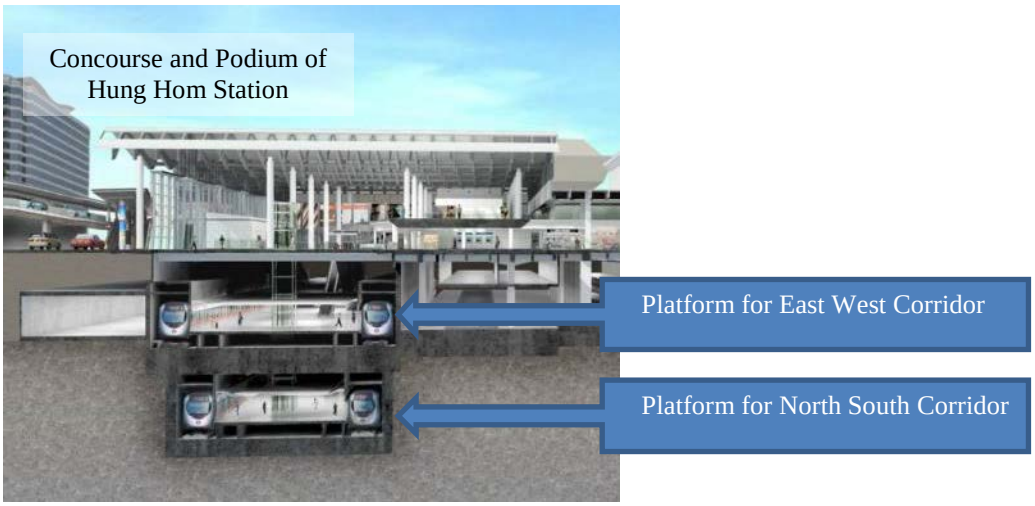
33. Under SCL, two railway tunnels are being constructed north of Hung Hom Station to connect the existing EAL and WRL to form the NSC and EWC respectively. For the future connection from Ho Man Tin Station to Hung Hom Station, structural works of the tunnel have been completed and track works are underway with over 60% completed. For the tunnel connecting the existing EAL to the extension of Hung Hom Station to form the NSC, excavation works have been completed and structural works are now underway.

34. 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, part of the Chatham Road North westbound was reinstated in early December 2016. The reinstatement for the remaining part of the road is expected to be completed by the end of 2017 to early 2018.

Structural works under Chatham Road North and near Winslow Street

35. The installation works of the noise enclosures near East Rail Line and Oi Sen Path have been substantially completed. Reinstatement of Oi Sen Path walkway has commenced and is expected to be completed in late 2017.

36. 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 in stages. The first two stages of concourse modification works were completed in March 2016 and February 2017 respectively and the refabricated northern and southern concourses were re-opened. Stage three modification works has commenced in March 2017 to install new escalators and lifts to connect the new SCL platforms and the concourse.



37. All structural works for EWC and NSC platforms, as well as the shunting tracks at Hung Hom Station have been substantially completed, while the remaining structural works would be completed in the second quarter of 2017. Escalators installation and building services works have commenced. With additional manpower deployed and works re-sequencing implemented, all works fronts are being 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.

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

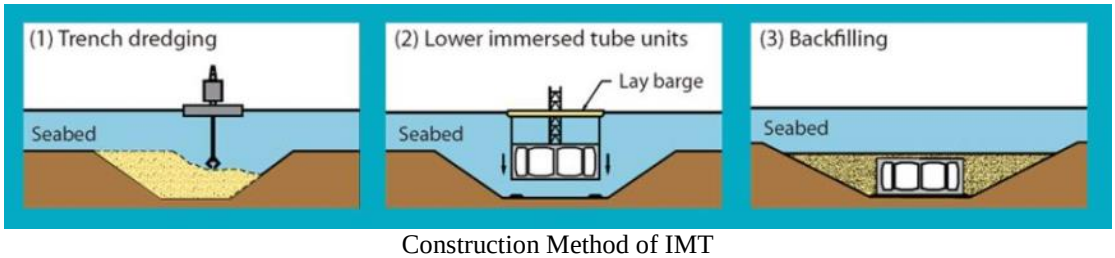
Yard. Structural works, building services and E&M works are now underway with track-laying works expected to be substantially completed in the second quarter of 2017.

Track-laying works at Hung Hom stabling sidings

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

39. 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. Excavation works for this section of tunnel were completed in the first quarter of 2017 and structural works are now underway.

40. 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

41. The fabrication of 11 IMT pre-cast units was completed. The casting yard at the ex-Shek O Quarry is now being re-watered to float the

tunnel units which will then be towed to Victoria Harbour for immersion into the seabed from mid-2017 onwards. Before immersion, the IMT units will be first towed to a temporary holding area near Tseung Kwan O for installation of surveying towers and floating pontoons, to ensure the IMT units can be accurately installed into the dredged trench, then the IMT units will be towed to designated locations for immersion. The first IMT unit is expected to be towed out from Shek O in around mid-2017, followed by the installation in the vicinity of CBTS.

IMT casting yard is being re-watered to float the tunnel units and prepare for immersion in Victoria Harbour

42. The trench dredging work for the section of IMT in Victoria Harbour has been substantially completed, and the Contractor is now preparing to place the gravel bed within the excavated trench for the installation of the IMT units. During the installation process, the fairway within Victoria Harbour would be maintained but some diversion is required to facilitate the 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. To facilitate the tow-in and installation of the first IMT unit in the vicinity of CBTS in mid-2017, pipe piling works have been finished to form the temporary wave barrier. The Contractor will extend the works site and complete dredging works within the CBTS to prepare for the installation of another IMT unit. Since Central-Wan Chai Bypass ("CWB") project construction works are still underway within the CBTS, SCL could only carry out the abovementioned dredging works when CWB finished the works and vacated the area. Therefore, the Corporation

would liaise with area the CWB project on the works arrangement and the actual commencement date of the SCL's dredging works would be subject to the programme of CWB. Mooring re-arrangement will be implemented in accordance with the works progress from mid-2017 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. The tunnels on Hong Kong Island are excavated by two TBMs, namely "Athena" and "Zhi-nu". The excavation of the up-track and down-track of the tunnels between CBTS and Exhibition Station has been completed in July and November 2016 respectively. Installation of railway tunnel systems is now underway.

45. Following the completion of tunnel boring works between CBTS and Exhibition Station, the affected public facilities and areas are being reinstated.

46. At the former Police Officers' Club ("POC") in Causeway Bay, excavation works for constructing the ventilation facilities has commenced and is expected to be completed by the end of 2017, structural works of the facilities will follow. Upon the completion of the ventilation facilities construction, the POC will be reinstated and integrated with the ventilation facilities at its original location.

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

47. TBM "Athena" has started the tunnel boring works from the shaft located at the Fenwick Pier Street works site in early March 2017,

heading towards Admiralty Station for the around 450-metre-long up-track tunnel. The tunnel boring works are progressing on schedule and has successfully passed underneath the existing Tsuen Wan Line tunnel in early April 2017. The tunnel boring works for the up-track tunnel are expected to be completed by mid-2017.

48. In the Wan Chai North area, the Exhibition Station will be located under the former Public Transport Interchange ("PTI"), 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 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 construction of diaphragm walls for the Exhibition Station and relevant railway facilities. 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 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 will be shifted eastward in phases

49. 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 to cater for the 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, while the other newly reclaimed areas in Wan Chai North have been handed over in the first quarter of 2017. Making use of these newly handed over land, the Corporation is now constructing a footpath between the temporary PTI near Marsh Road and Wan Chai Ferry Pier, which is expected to open for public use in April 2017. The Highways Department ("HyD") and the Corporation will maintain liaison with CEDD on the handover arrangement of the remaining works areas.

50. As mentioned in the previous progress report, 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 concerned land is required for the interfacing works of the West Approach Tunnel of Exhibition Station, as well as the tunnelling works to Admiralty Station.

51. Other than the deferred handover date, the SCL project has to complete the residual works within the parcel of land near Fenwick Pier Street highlighted in Paragraph 50 above, which includes the removal of an abandoned 40-meter deep pipe pile that is in close proximity to other existing permanent foundation structures, and 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 by an external party, the NSC now faces a further delay of three months on top of the previously reported six months delay. HyD and the Corporation are seeking engineering solutions to overcome the technical challenges so as to contain the construction and programme risks.

52. According to the latest information on the site handover schedules provided by CEDD and the construction challenges, 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.

53. As mentioned in Paragraph 48, since the Exhibition Station is located under the Harbour Road Sports Centre, the Sports Centre needs to be re-provisioned so as to facilitate the station construction. The new Sports Centre has been completed and opened for public use in May 2017. Upon completion of the reprovisioning works and demolition of the original sports centre, detailed ground investigation works at the original sports centre will follow to ascertain the underground condition. At this

moment, the underground condition of the concerned area has yet to be ascertained.

54. 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 ("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. 200-metre-long section of this overrun tunnel extending south of the Admiralty Station to Hong Kong Park has been entrusted to the South Island Line (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 has commenced by drill and blast in late September 2016 and is progressing as scheduled. The blasting works are expected to be completed by the end of 2017.

SCL overrun tunnel is being constructed by drill and blast method

55. Construction of partition walls and slabs for the platforms and connection facilities and E&M services installation between the platform and concourse at Admiralty Station are now underway.

NEW TRAINS

56. 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.

New trains of NSC

57. To ensure smooth future operations of EWC, three additional sets of new trains were purchased to further increase its train fleet size. A total of 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

58. 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 March 2017, a total of 14 8-car trains have been put into service on WRL. The conversion of all the 28 WRL trains is expected to be completed in 2018.

59. On MOL, while the first two 8-car converted trains have entered service since January 2017, the first two new 8-car trains have also been put into service in March 2017. All of the 4 MOL 8-car trains have been running smoothly. All in-service trains will be of 8-car configuration by

the end of 2017. Tailor-made signage and additional platform assistants are in place to guide passengers to the designated waiting area for boarding. When the conversion programme is completed, the overall carrying capacity on the MOL will be doubled.

Four 8-car trains for the MOL have entered service

IMPROVEMENT WORKS FOR THE OPERATING RAILWAY FACILITIES

60. The retrofitting works of APGs along the MOL are in full swing. The retrofitting works at Tai Wai Station and Sha Tin Wai Station have been completed, while works at other remaining seven stations continue. The Corporation is committed to completing the retrofitting works of APGs at the stations on MOL in 2017.

Retrofitting works of APGs

61. 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. On the other hand, the locations of the doors of the existing trains and the new trains are different. In order to let 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.

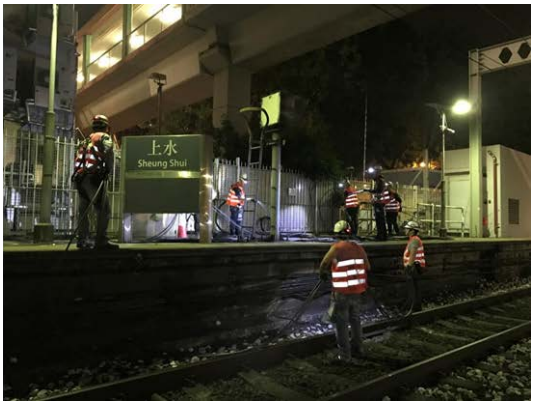
62. For the arrangement of the replacement of 12-car trains with 9-car trains on the EAL, in view of passengers' concern on the carrying capacity of new trains, the Corporation is reviewing the feasibility of launching the new trains progressively upon the commissioning of EWL and its diversion effect.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

63. 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 and University 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 and University Stations to Fo Tan Station during non-service hours in early March 2017. Testing track length had been extended from 3km to 6km. It will then proceed to the track sections at Tai Po, Tai Wo and Fanling Stations.

64. 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.

65. 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 (TD). 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

66. 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.

67. 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. 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 1,190 enquiries since October 2012.

EMPLOYMENT OPPORTUNITIES

68. As at 31 March 2017, about 6,627 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 in shortage of around 747 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 472 having completed the trade test and continuing their careers in the field.

CONCLUSION

69. Members are invited to note the above information.

MTR Corporation Limited
May 2017

Enclosure I

Expenditure report as at 31 March 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	34,582.5	2,023.1
E&M works	13,901.8	3,379.7	338.8
Total	**57,635.8**	**37,962.2**	**2,361.9**

* The estimated amount of unresolved claim: Amount claimed ($3,757.7 million) – Interim award ($1,395.8 million) = $2,361.9 million (See Table 2)

Enclosure I

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	62	554.1	477.5	477	3,418.9	1,395.8
E&M works	6*	0	0	91	338.8	0
Total	**68**	**554.1**	**477.5**	**568**	**3,757.7**	**1,395.8**

** 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 31 March 2017, the Corporation received 636 substantiated claims and the amount claimed in total was about $4,311.8 million, representing 7.5% 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 31 March 2017, 68 cases were resolved and about $477.5 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 $1,395.8 million was made for some cases.

Enclosure II

Overall works progress of the SCL as at 31 March 2017

Overall works completed：72%
Percentage completed as originally planned [(1)]: 76%

(A) Culminated progress of 26[(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	96%
1103	Hin Keng to Diamond Hill Tunnels and Fung Tak Public Transport Interchange	96%
1106	Diamond Hill Station Extension	87%
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	90%
1111	Hung Hom North Approach Tunnels	95%
1112	Hung Hom Station and Stabling Sidings	94%
1113	Reprovisioning of New Territories South Animal Management Centre and Shatin Plant Quarantine Station	100%
1114	Pedestrian Links at Tsz Wan Shan	93%
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	66%
1120B	Trackwork and Overhead Line for SCL Phase 2	8%
1121	North South Line (NSL) Cross Harbour Tunnels	71%
1122	Admiralty South Overrun Tunnel	35%
1123	Exhibition Station and Western Approach Tunnel	37%

1124	Admiralty SCL Related Works	6%
1125	Police Sports and Recreation Club Enhancement Works	100%
1126	Reprovisioning of Harbour Road Sports Centre and Wan Chai Swimming Pool	99%
1128	South Ventilation Building to Admiralty Tunnels	54%
1129	SCL - Advance Works for NSL	100%
11209	Platform Modification and Associated Works at East Rail Line	97%
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	85%
1141B	New Rolling Stock for SCL Phase 2	37%
1151	Rolling Stock Modification and New Train Cars for SCL Phase 1	71%
1152	Signalling System for SCL Phase 1 & Signalling System Modification for MOL and WRL	79%
1152B	Signalling System for SCL Phase 2	58%
1153	Tunnel ECS for SCL Phase 1	53%
1153B	Tunnel ECS for SCL Phase 2	24%
1154	Platform Screen Doors for SCL Phase 1 & APG Retrofit for MOL	83%
1154B	Platform Screen Doors for SCL Phase 2 & APG Retrofit for EAL	5%
1155	Power Supply System and Trackside Auxiliaries for SCL Phase 1	74%
1155B	Power Supply System and Trackside Auxiliaries for SCL Phase 2	21%
1159	Lifts for SCL Phase 1	54%
1162	TETRA System for SCL Phases 1 & 2	78%
1162B	Radio Distribution Network System for SCL Phases 1 & 2	34%
1163	AFC System and SAM System for SCL Phases 1 & 2	29%
1164	Building Services for Diamond Hill Station	60%
1164B	Building Services for SCL Hong Kong Island Section	Less than 1%[(3)]
1165	Building Services for Hin Keng Station, Ma Chai Hang Ventilation Building and Fung Tak Emergency Access	64%
1166	Main Control System for SCL Phase 1	80%
1166B	Main Control System for SCL Phase 2	34%
1169	Communications System for SCL Phase 1	73%
1169B	Communications System for SCL Phase 2	Less than 7%

1172	Escalators for SCL Phase 1	53%
1172B	Lift and Escalators for SCL Phase 2	8 %
1173	Building Services for Hung Hom Station and Hung Hom Stabling Sidings	63%
1175	Building Services for Kai Tak Station	89%
1176	Building Services for To Kwa Wan Station and Ancillary Building	33%
1177	Building Services for Ma Tau Wai Station and Ancillary Building	29%
1183	EAL Signalling System Modification for SCL	100%
1191	Floodgate System for SCL Phase 2	17%

Note:
(3) E&M Contract 1164B was awarded on 14 March 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

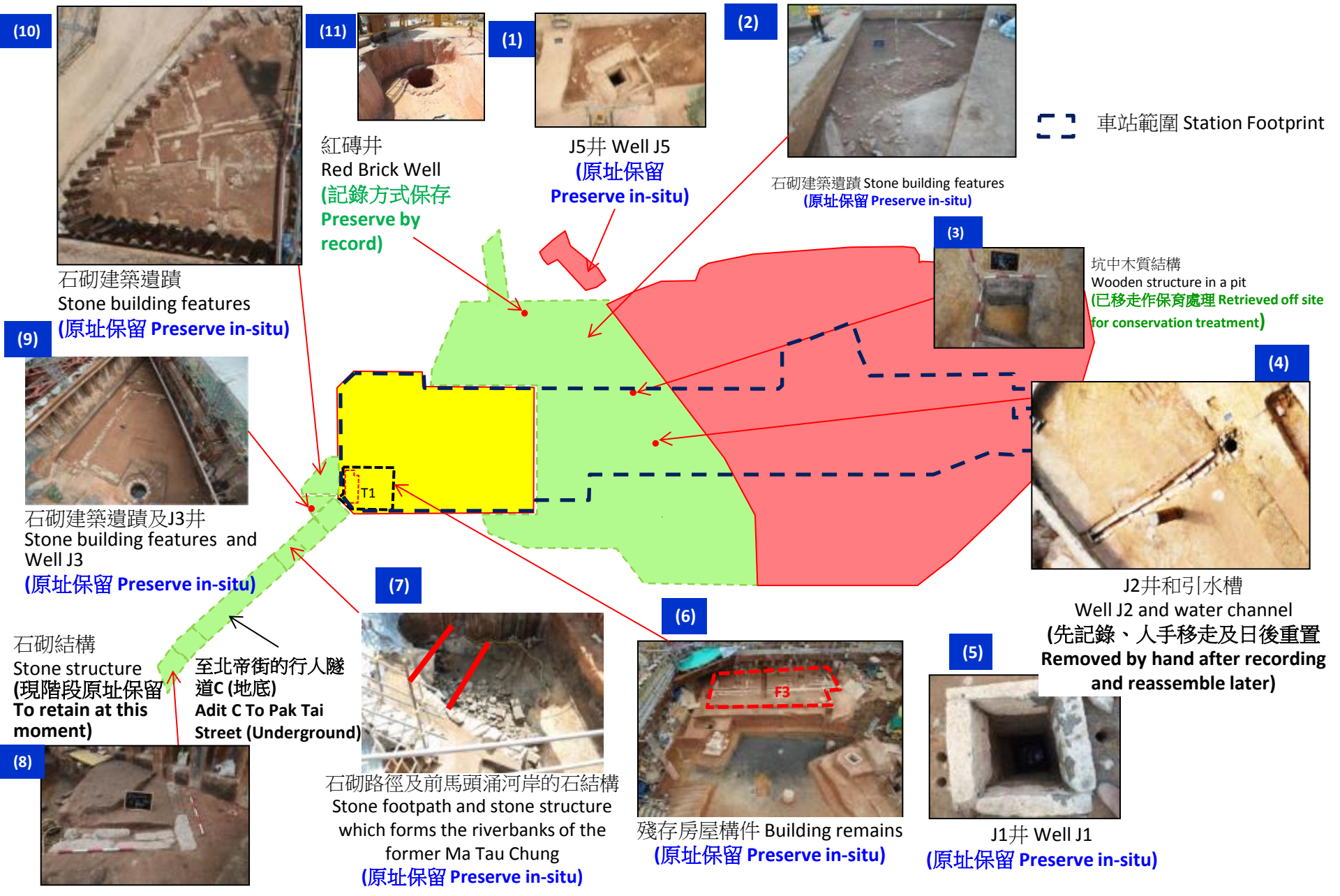
Shatin to Central Link - Pedestrian connecting facilities between Tsz Wan Shan Area and Diamond Hill Station of Shatin to Central Link

FILE NAME : HRWSCL003-SK0445.dgn PEN TABLE : auto5k_don't_fill_symbol_text.tbl PLOT ON : 8/6/2016 A3 420X297

土瓜灣站工地考古文物保育方案

附件 四 **Annex 4**

Conservation Options for Archaeological Features Discovered at To Kwa Wan Station



行人隧道 C 的走線
Alignment of Adit C

附件五 **Annex 5**