

**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 2018)**

(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 2018.

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, Sung Wong Toi, To Kwa Wan, 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 Ho Man Tin 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. The entrustment cost concerned is about \$70.8 billion. 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 works. The Approved Project Estimate for the entire SCL project is adjusted upward from the original estimate of \$79,800 million to **\$80,700 million**¹ (in money-of-the-day prices).

7. The Government received the latest cost estimate of the main works of the SCL project from the MTRCL on 5 December 2017. MTRCL indicated a need of adjusting upward the entrustment cost of the main works of the SCL

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 \$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.

project, from \$70.8 billion to \$87.3 billion, i.e. an increase of about \$16.5 billion. MTRCL considered that the main reasons for the increase in construction cost including the archaeological and conservation works at Sung Wong Toi Station, the additional expenses due to delays in the handover of work sites at Wan Chai north, and the station works required for allowing flexibility for the topside development at Exhibition Centre Station.

8. Since December last year when MTRCL submitted the revised cost estimate of the main works of SCL project, the Highways Department (“HyD”), in collaboration with the monitoring and verification (“M&V”) consultant, have held several meetings with MTRCL, and is reviewing rigorously the information given by the MTRCL as well as the assumptions and basis of the cost estimate of works by MTRCL to ascertain whether there are sufficient justifications for the estimate. In view of the latest development of SCL project, the Government needs more time to verify the facts and the condition of the works. Upon completion of the detailed assessment and review, the Government will apply for additional funds from the LegCo to continue with the SCL works.

Latest Progress of the Main Works

9. The progress report of the SCL project as at 30 June 2018 submitted by MTRCL is at **Annex 2**. Our analysis and supplement 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)

10. Building services works and electrical and mechanical (E&M) works at Hin Keng Station, the connecting elevated and at-grade tracks were completed and the relevant system testing inside the station was on-going. Construction of the Emergency Vehicular Access outside the station and diversion works for the underground utilities at Che Kung Miu Road were substantially completed. The road reinstatement works at Che Kung Miu Road was scheduled for commencement in the fourth quarter of 2018. Dynamic tests of various systems

were on-going.

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

11. Building services works and E&M works, in the Diamond Hill Station and underneath Lung Cheung Road, of the two pedestrian adits connecting SCL and the Kwun Tong Line were substantially completed. The relevant system testing and statutory inspections were in progress. Road reinstatement works at Lung Cheung Road was on-going. 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 were substantially completed. The construction of the Ventilation Building at the former Ma Chai Hang Recreational Ground was substantially completed and the relevant system testing was in progress.

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

Kai Tak Station

12. The testing for the building services systems and E&M systems at Kai Tak Station was in progress. Construction of at-grade footpath outside the station was substantially completed. Installation of the lighting system was in progress.

Sung Wong Toi Station

13. 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 3**), the entire alignment of the adit would be seriously affected. It would be necessary to identify a suitable alternative alignment. MTRCL awarded a works contract in July 2018 to study the alternative alignment of Adit C, including the archaeological investigation work along the possible alignments. In other words, Adit C connecting the station and Pak Tai Street would hardly be completed at the same time as Sung Wong Toi Station. A temporary access at grade would be required to connect the station entrance/exit. In case that suitable and cost-effective

alternative alignment could not be constructed eventually as a result of further archaeological discoveries or other constraints of on-site situation, residents in the vicinity of Pak Tai Street could still use the existing pedestrian crossing facilities at Sung Wong Toi Road to gain access to Sung Wong Toi Station (see **Annex 4**). MTRCL is also discussing with relevant departments on the feasibility of adding an at-grade crossing at another suitable location of Sung Wong Toi Road for reducing the walking distance between Pak Tai Street and the station entrance/exit. Upon completion of the preliminary study on the replacement of the alignment of the Adit C and other alternative scheme for connecting the station, MTRCL will consult the Kowloon City district council and relevant local community about to the relevant result of the preliminary study so as to ensure that the alternative scheme was as convenient as possible and could meet the residents' needs.

14. After completion of the archaeological investigation work in 2014, the construction works of Sung Wong Toi Station fully resumed in March 2015. Up to end-June 2018, the structural works of the station was completed. The fitting out works, building services works and E&M works inside the station are in progress. The fitting out works at the station entrances and the construction of at-grade footpath were also in progress. In order to minimise the impact on adjacent shops, the Government urged MTRCL to complete the works of the station entrance/exit at Nam Kok Road as soon as possible.

To Kwa Wan Station

15. To cater for the underground construction works of To Kwa Wan Station, the traffic diversion had to be implemented for a section of Ma Tau Wai Road between Chi Kiang Street and Sheung Heung Road. Most of the section of Ma Tau Wai Road affected by the SCL works are operating in two-lane and two-way mode. The fitting out works, building services works and E&M works inside the station are in progress. Construction works of the station entrances, ventilation building and the drainage pipe laying works at Ma Tau Wai Road is on-going and the progress is generally on schedule. It is expected that Ma Tau Wai Road will be resumed in three-lane and two-way mode in the first half of 2019.

16. Regarding the earlier incident about the removal of reinforcement bars from a platform wall at the To Kwa Wan station, we provided the details at a special meeting of the Sub-committee on Matters Relating to Railways on 6 July 2018. Please refer to the paper submitted by the Government to the

Sub-committee (LC Paper No. CB(4)1354/17-18(01)). The MTRCL has already confirmed that the condition of the wall would not pose any safety risk to the interior wall, adjacent staircases and escalators. However, the incident revealed the problems in MTRCL's supervision of works, for instance, part of the works supervised by MTRCL were not constructed in accordance with the drawings, HyD had not been informed by MTRCL of the construction problems at To Kwa Wan Station on a timely basis. The HyD has requested the MTRCL to review the implementation of its works supervision system and the communication mechanism for both within the MTRCL and with the Government. The HyD received a reinstatement proposal of the relevant wall from MTRCL in end-July 2018 and requested the MTRCL in end-August 2018 to submit detailed supplementary information such as the thickness of the existing wall, test records for proposed concrete materials for reinstatement works and how the reinstatement proposal can comply with the requirement of the Buildings Ordinance and structural integrity, etc.

17. Regarding the settlement issue arising from the SCL project, we provided the details at the special meeting of the Sub-committee on Matters Relating to Railways on 31 August 2018. Please refer to the paper submitted by the Government to the Sub-committee (LC Paper No. CB(4)1504/17-18(03)). According to the MTRCL's records, the settlement records for some monitoring points had exceeded the pre-set trigger levels during the construction period of To Kwa Wan Station. The MTRCL had taken relevant measures in accordance with the mechanism, including setting up more monitoring points, arranging the inspection of the condition of buildings for registered structural engineers, and carrying out grouting works near buildings for strengthening the underground stratum, etc. According to the MTRCL's assessment, for buildings near To Kwa Wan Station with settlement record reaching the third level, the level of tilting is less than that specified in the "Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers" issued by Buildings Department. The MTRCL also confirmed the structural safety and stability of the buildings in the performance review after the completion of the station structure. As the construction works of the main structure of the station is substantially complete, there will be a relatively minor impact on the settlement of the buildings concerned arising from the remaining works (including electrical and mechanical works as well as building services works). The MTRCL's monitoring data in December 2017 and July 2018 indicates that settlement has become steady. The MTRCL would continue to monitor these monitoring points. Officers of BD and HyD inspected the buildings concerned in August 2018, and

did not identify any obvious structural safety problem. MTRCL will also arrange registered structural engineers to inspect 23 nos. buildings affected by settlement near the site of To Kwa Wan Station. To allay public concerns, MTRCL submitted a paper (LC Paper No. CB(4)1504/17-18(04)) promulgating the most recent settlement monitoring data along the SCL to the special meeting of Sub-committee held on 31 August 2018.

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)

18. E&M installation works adjacent to the railway track in the tunnel of the section from Ho Man Tin Station to Hung Hom Station were completed. For the tunnel section near Princess Margaret Road connecting the East Rail Line and the new platforms of Hung Hom Station, track laying works continues. The progress of the above works is generally on schedule. Besides, construction of the SCL platform and structural works of the tunnel at Hung Hom Station was completed. Building services and E&M works inside the station is generally on schedule. System testing and statutory inspections have been conducted progressively.

19. Regarding the construction quality problems for the tunnel joints at Hung Hom Station, although MTRCL indicated that the incident would neither affect the safety and integrity of the entire tunnel structure, nor affect the programme or cost of the whole project, we expressed concern about the incident. According to the Entrustment Agreements of the SCL project signed between the MTRCL and the Government, the MTRCL shall carry out the design, construction, testing and commissioning of the SCL, and ensure that the tasks entrusted are conducted with skill and supervision reasonably expected of a professional, including the requirement to ensure that the quality of works meets the required standards. HyD requested MTRCL to take remedial measures for the location of substandard works and instructed MTRCL to strengthen on-site supervision and monitor closely the progress of the rectification works. MTRCL indicated that the rectification works were completed in July 2018. Since the incident is related to the quality of site construction works, MTRCL and the contractor would handle compensation issue concerned according to the procedure of contract provisions.

20. Regarding the incident of cut-short of reinforcement at the platform of the Hung Hom Station Extension under the SCL project, we reported in detail at the special meeting of the Sub-committee on Matters Relating to Railways held on 31

August 2018. Please refer to the paper submitted by the Government to the Sub-committee (LC Paper No. CB(4)1514/17-18(01)). MTRCL submitted an incident report to the HyD on 15 June 2018 and uploaded it to MTRCL's website for perusal by the public. The report stated that the content of the statements given by one of the sub-contractors of Leighton Contractors (Asia) Limited ("Leighton") was inconsistent with the statements given by Leighton to the MTRCL. Leighton has strenuously denied the allegations by the sub-contractor, while MTRCL did not express any opinion on the mismatch. According to the relevant information provided by the MTRCL separately to the HyD on 15 June, HyD considered that the incident may involve criminal elements and therefore referred it to the Police for follow-up action.

21. HyD set up a task force led by the Director of Highways ("DHy") on 19 June to review the HyD's monitoring mechanism for the SCL project and make recommendations on short-term and long-term improvement measures. The proposal of short-term measures could be made in three months. The DHy met with the Projects Director of the MTRCL on 22 June this year, pointing out that the Government had considered that there were problems in the MTRCL's works supervision and reporting mechanism as revealed from the recent incidents relating to the SCL project and had written a letter to the MTRCL on the same day requesting the MTRCL to evaluate the implementation of its works supervision system, MTRCL's mechanism for reporting within the Corporation and with the Government. In its reply on 6 July this year, MTRCL promised to review its management system, site supervision and reporting mechanism. To strengthen the supervision of the SCL works by MTRCL, HyD has taken the following enhanced measures:

- (i) requiring the MTRCL to include a standing discussion item in the agenda for the monthly Project Supervision Committee Meeting, Project Coordination Meeting and Project Progress Meeting about the data of "Non-conformance Reports" issued by the MTRCL to the contractors; and to report on any signs of improvement or worsening on the quality of works for taking appropriate measures. HyD will also strengthen the verification of MTRCL's implementation of the relevant procedures;
- (ii) increasing the number of site visits of M&V consultant;
- (iii) conducting independent surprise check to sites by HyD's engineering staff; and
- (iv) requesting the MTRCL to strengthen the mechanisms for reporting

within the Corporation and with the Government, and improve construction supervision system.

22. The Government attaches great importance of the incident as it is related to public safety. The Chief Executive and the Executive Council appointed on 10 July a Commission of Inquiry (“Commission”) which is chaired by Justice Michael Hartmann under the Commissions of Inquiry Ordinance (Chapter 86) to carry out investigations on the facts and circumstances surrounding the steel reinforcement fixing works at the construction works of the diaphragm wall and platform slab of Hung Hom Station Extension under the SCL project. The Commission could compel relevant persons to give evidence and disclose documents, and witnesses could be examined on oath. Since different parties may have substantial dispute on the certain facts and circumstances of the relevant works, the Commission has the power to examine witnesses on oath and cross-examine them. It is believed that it could clarify the facts. The evidence will generally be taken in public in the presence of other relevant parties, who will then have the opportunity to cross-examine witnesses and make statements on evidence. The Commission would review the MTRCL’s project management system and supervision system, etc. as well as the monitoring and regulatory mechanisms of the Government, and would also suggest appropriate measures in order to promote public safety and assurance on the quality of works.

23. In the press conference held on 7 August, the THB, the HyD and the BD pointed out that there was mismatch between the report submitted on 15 June and the details of construction works of the diaphragm wall and platform slab shown in the drawings submitted on 13 July by the MTRCL. Upon numerous enquiries from government departments, MTRCL failed to provide a reasonable explanation. Considering that it was inexcusable for the MTRCL's project management team to hold responsibility, the Government is extremely disappointed. The HyD requested MTRCL to provide more detailed supplementary information such as as-built engineering drawings on the diaphragm wall and platform slab, records of revised engineering design approved by BD, and remedial proposals on the structure of the platform slab concerned, etc.

24. The THB announced that an Expert Adviser Team (“Expert Team”) for the SCL Project was established on 15 August. The Expert Team comprises three senior retired government officers, namely Dr. Lau Ching-kwong (former Director of Civil Engineering), Mr. Hui Siu-wai (former Director of Buildings) and Mr.

Wong Hok-ning (former Head of Geotechnical Engineering Office). The Expert Team will conduct an overall review of MTRCL's project management system, and recommend additional management and monitoring measures to the MTRCL and relevant government departments to be undertaken as appropriate, in taking forward the SCL Project. The Expert Team will advise on the most pragmatic methodology for MTRCL to ensure the structural safety and verify the condition of completion of the platform slab and diaphragm wall of Hung Hom Station Extension, to consider whether further investigation is necessary in relation to the construction of key structures in all stations of the SCL project, and to advise on any matters relevant to the works of the SCL project (including settlement matters). In discharging the aforementioned duties, members of the Expert Team will be representing the Government. The period of appointment for the Expert Advisers is one year. The Expert Advisers will complete an investigation report in about nine months' time, and will submit interim report(s) as necessary. Professional staff from the relevant government departments provides technical support to the Expert Team.

25. Upon the HyD's request earlier, the MTRCL submitted a preliminary load test proposal prepared by an independent third-party specialist. HyD and BD had given comments on the proposal. Since the Government could not grasp the actual construction details of Hung Hom Station Extension at this stage, the Government considers that it is necessary to clarify the circumstances in advance. Therefore, the Government has requested the MTRCL to conduct a comprehensive review and verification of all the construction records, and submit them to the HyD and the BD for review so that there is a basis for the Government to consider the method of load test. Besides, BD will also consult its appointed expert in building structural safety. Depending on the views of the expert and the Expert Adviser Team formed by the THB on 15 August, and whether the MTRCL could provide sufficient and reliable information and evidence, the Government does not rule out the possibility of opening up part of the connection between platform slab and diaphragm wall for examination.

26. In the SCL Project Supervision Committee meeting held on 28 August this year, the MTRCL mentioned that there were quality problems of concrete at part of the EWL platform slab soffit at Hung Hom Station Extension. The HyD and the BD were very concerned about the incident and then visited the site for deep understanding. The BD carried out on-site inspection in the morning of August 29 and requested the MTRCL to submit an investigation report. In the afternoon, the MTRCL provided the HyD with three Non-conformance Reports

issued to the contractor between 17 and 22 August regarding concreting works of the platform slab requesting the removal of the substandard concrete by the contractor.

27. HyD asked MTRCL on 29 August to clarify whether there was safety issue about the EWL platform slab. HyD and its M&V consultant also inspected the site on 30 August. After removal of the concrete surface, it was found that there were obvious quality problem inside the concrete at many locations. As the quality problem occurred inside the concrete and there was no obvious signs on concrete surface, the HyD and the M&V consultant were unable to discover this quality problem in past inspections. On the same day, the HyD immediately wrote to the MTRCL requesting the following actions-

- (i) to check whether there is any safety issue about the platform slab, and whether construction workers can continue working on or under it;
- (ii) to take immediate actions that eliminate potential safety hazards;
- (iii) to review the quality of concrete of the platform slab comprehensively;
- (iv) to provide an investigation report; and
- (v) to provide a proposal for remedial works as soon as possible for the BD's consideration.

28. The Government reiterates that the MTRCL, as the project manager under the Entrustment Agreement with the Government, is responsible for ensuring that the quality of the works in the SCL meets the relevant requirements, including following up with the relevant contractors for the works quality problems indicated in the Non-conformance Reports. The Government has asked the MTRCL to comprehensively review the quality of the concrete of the platform slab and submit reports. When the HyD receives the investigation report from the MTRCL, it will scrutinize the report and will also consult the Expert Adviser Team for the SCL project.

Hung Hom to Admiralty Section

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

29. The main works of the Cross Harbour Section continue. The construction of the ventilation building near the shore at Hung Hom was in progress. Installation of immersed tube tunnel units was completed. The

backfilling works at the seabed trench of Victoria Harbour is in progress. Connection works of the tunnel units at Causeway Bay Typhoon Shelter were in progress. The overall 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 Centre Station)

30. The excavation of the up-track and down-track TBM tunnel from Fenwick Pier Street to Admiralty Station was successfully completed in May 2017 and November 2017 respectively. The up-track and down-track connection works between Admiralty Station and the tunnel was completed in March and July 2017 respectively. For the cut and cover Western Approach Tunnels from the west of Exhibition Centre Station to Fenwick Pier Street, the construction of the diaphragm wall was completed in June 2017 and the tunnel construction works were on-going.

31. The main works of Exhibition Centre Station are not only highly complicated, but also involve a wide extent of sites. For instance, prior to the construction of Exhibition Centre 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 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 Centre 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 Centre 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 Centre 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.

32. After MTRCL had demolished the original Harbour Road Sport Centre, the pipe piling works were completed and the bulk excavation works were being conducted. Results of the further ground investigation works at the original HRSC showed that the actual rockhead level was higher than anticipated, and more rock excavation was needed. MTRCL considered to change the rock excavation method to blasting in order to maintain the progress of the works at Exhibition Centre Station. However, MTRCL has to conduct the risk assessment for the blasting works in order to ensure that the blasting works will not pose any risk to the neighbourhood due to any potential presence of wartime bomb in the vicinity. If excavation cannot be carried out by blasting eventually, there will be a need to maintain rock excavation by mechanical breaking and thus a higher risk of impact on the progress of works.

33. To facilitate the re-provisioning of the footbridge at Convention Avenue connecting to Wan Chai Ferry Pier, MTRCL was constructing the central pier of the permanent footbridge at Convention Avenue. In order to facilitate the next stage of Exhibition Centre Station construction and the remaining construction works of the footbridge at Convention Avenue, the implementation of temporary traffic management measures in stages at Wan Chai North will be continued.

34. MTRCL discovered three wartime unexploded ordnance (“UXO”) at the works sites of the SCL project on 27 January, 31 January and 10 May 2018. The first two locations (two UXOs) and the third location are the works site of the former Wan Chai Swimming Pool and the former Harbour Road Sport Centre respectively. The three UXOs were discovered by engineering site staff during excavation works in accordance with the prudent works procedures. With smooth excavation works, the current risk of encountering bombs at the sites of ex-Wan Chai Swimming Pool and ex-Harbour Road Sports Centre is greatly reduced. MTRCL would continue to adopt a prudent approach in the remaining excavation works with the presence of bomb risk at Fleming Road to ensure safety of the public and the engineering site staff. HyD requested MTRCL to assess the time and cost implications arising from the discovery of UXOs, and explore delay recovery measures to minimise the risk of project delays.

35. To deal with a left-in pipe pile located at Fenwick Pier Street, MTRCL's contractor had carried out grouting works in the vicinity of the abandoned pile to replace the construction of part of the diaphragm wall there. MTRCL also completed the construction of a flood protection wall at the western approach tunnel under the atrium of the convention centre to cope with possible flooding risk due to the changes in the continuous diaphragm walls as mentioned above. Regarding MTRCL's excavation works at the location concerned, the works were temporarily suspended in view of the settlement incident (please refer to paragraph 39 below).

36. 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 35 above and there would be an increase in construction cost. In the past, HyD has repeatedly requested MTRCL to proactively explore measures to recover the progress so as to minimize the risks of construction delay.

37. 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 need to allow flexibility for the convention facilities above Exhibition Centre Station, the construction delay as a result of the deferred handover of work sites and the measures mentioned in paragraph 35 may also lead to additional construction cost.

38. Separately, regarding the incident where excavation exceeded the allowable depth at Exhibition Centre Station and West Approach Tunnel, we reported in detail at the special meeting of the Sub-committee on Matters Relating to Railways held on 6 July 2018. Please refer to the paper submitted to the Sub-committee (LC Paper No. CB(4)1354/17-18(01)). The Contractor completed backfilling works up to the permitted depth and installed the temporary lateral struts at Exhibition Centre Station. MTRCL submitted the information to HyD on 19 and 27 June. HyD also requested the MTRCL to critically review its monitoring and reporting mechanism. Furthermore, with respect to the incident on deviations of the seventh layer of temporary struts from the original design position at Area C1 of Western Approach Tunnel (i.e. the Atrium of Hong Kong Convention and Exhibition Centre), the Contractor already rectified the deviations of the temporary struts on 1 August this year.

39. The details about the settlement monitoring points in Wan Chai North

were presented at the special meeting of Subcommittee on Matters Relating to Railways on 31 August this year. According to MTRCL's monitoring data at that time, the settlements of some monitoring points exceeded the third trigger level. MTRCL suspended the excavation works of Exhibition Centre Station on 10 August 2018. HyD together with the M&V consultant carried out site inspection on the following day, covering the buildings and structures near monitoring points under its purview and with readings exceeding the highest trigger level, and neither discovered any obvious structural safety problem on the buildings and structures nor abnormal condition on the nearby areas of those underground utilities. BD also inspected relevant buildings nearby and did not find any obvious structural problem. BD would continue to monitor the structural conditions of relevant buildings to ensure their structural safety. HyD requested MTRCL to conduct a detailed analysis of the settlement arising from the works nearby. If there is a need to revise each of the trigger levels under the three-tier activation mechanism, MTRCL shall provide concrete justifications and consult stakeholders such as HyD, relevant departments and utility undertakers on their proposed revision. HyD would only consider to agree the proposed revision of trigger levels on the three-tier activation mechanism and agree to resume the excavation works at the Exhibition Centre Station after ensuring all issues are in order. The Government announced on 28 September the monitoring and reporting mechanism for the impact of the SCL railway project on nearby structures and public facilities, as well as the updated data on the settlement of the Exhibition Centre Station. Under the monitoring and reporting mechanism, the MTRCL confirmed the safety of buildings, structures and public facilities near the site of the Exhibition Centre Station. After the relevant departments accepted the revised levels submitted by the MTRCL, the excavation works on the site were resumed on 29 September.

Conclusion

40. In view of the above assessments as mentioned in paragraphs 9 to 39 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 Sung Wong Toi 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,

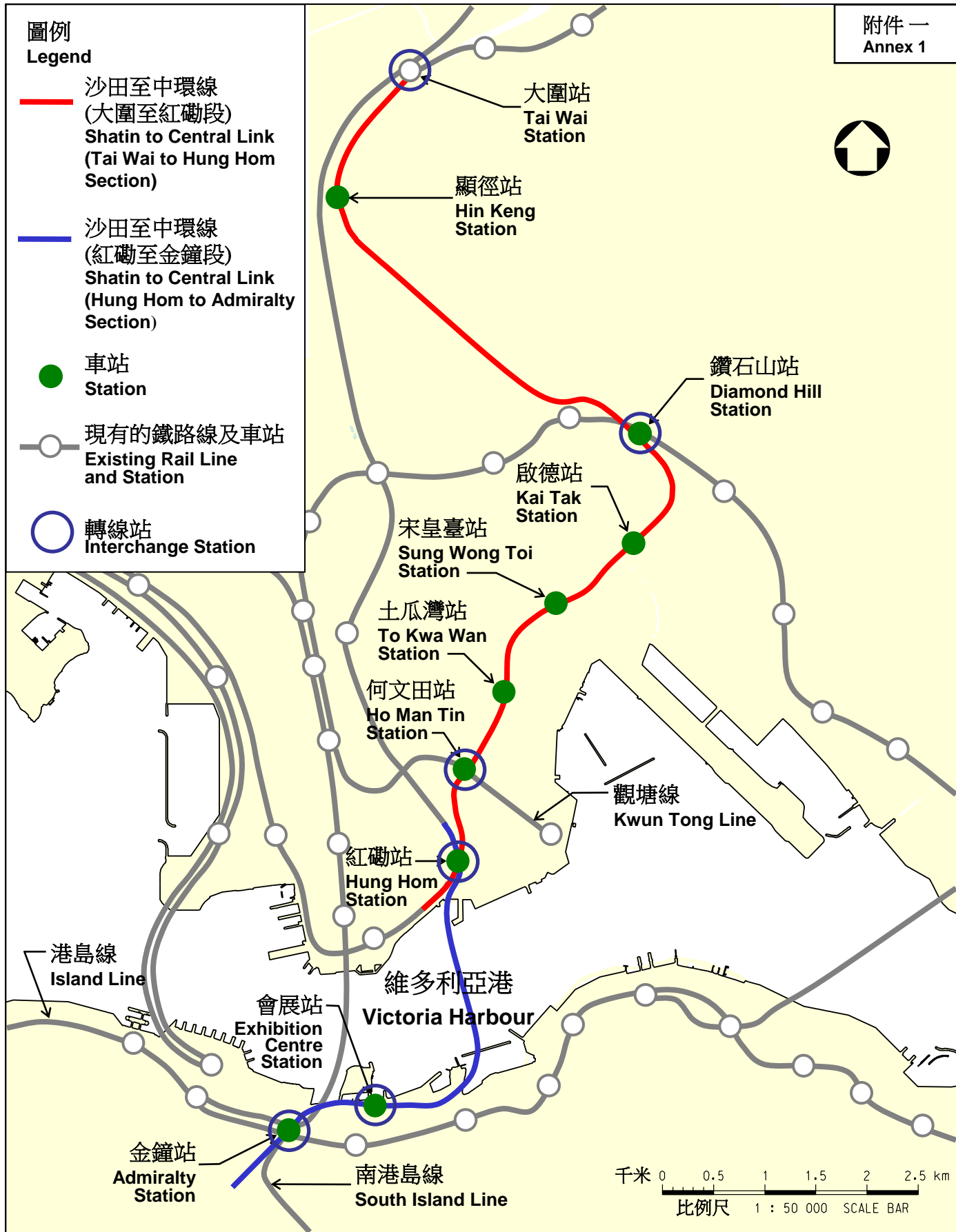
the delay recovery measures implemented at the “Tai Wai to Hung Hom Section” is picking up the pace progressively. Hence, the target commissioning date of this section could originally be advanced to about mid-2019. However, due to the series of Hung Hom Station incidents and associated investigation works, the target commissioning date will need to be further reviewed.

41. Due to the impact of site handover arrangement of WDII and the complicated underground condition at Exhibition Centre Station, as well as to allow flexibility for the construction of new convention facilities above Exhibition Centre 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 complete the works for commissioning the railway line as soon as possible.

**Transport and Housing Bureau
Highways Department
October 2018**

圖例
Legend

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



圖則名稱 drawing title

沙田至中環線的走線

Alignment of the Shatin to Central Link

圖號 drawing no.

HRWSCLO03-SK0465

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鐵路拓展處 Railways Development Centre



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 2018)**

INTRODUCTION

This report updates Subcommittee members on the progress of Shatin to Central Link (“SCL”) as at 30 June 2018.

OVERVIEW OF THE SCL PROJECT

Works progress

Overall progress

1. As at 30 June 2018, the overall works for SCL were 86% complete compared to the planned completion rate of 90% against the original project completion target in 2018 for Tai Wai to Hung Hom Section and 2020 for Hung Hom to Admiralty Section respectively (Please refer to Enclosure II for details). As reported before, the construction works were affected by various factors, including the archaeological works at Sung Wong Toi Station site, late land handover in Wan Chai North, and complicated underground conditions. With the mitigation measures being implemented, some of the delay caused by the above factors could be recovered.

2. With the continuous efforts of the construction team, around 98% of the works of the Tai Wai to Hung Hom Section have been completed as at 30 June 2018, compared to the originally planned completion rate of 99%. As at 30 June 2018, key progress include:

a. Structural works for all stations of Tai Wai to Hung Hom Section have been substantially completed;

b. Dynamic train test has been progressively extended to the full length between Hin Keng and Hung Hom stations in May; and

c. Conversion process from 7-car trains to 8-car trains on the West Rail Line (“WRL”) has been completed in May.

3. Hung Hom to Admiralty Section was 71% complete in overall terms as at 30 June 2018, compared to the originally planned completion rate of 78%. Key progress include:

a. All Immersed Tube Tunnel (“IMT”) units have been successfully installed in the vicinity of Causeway Bay Typhoon Shelter (“CBTS”) in Victoria Harbour in April; and

b. Testing of the new signalling system of the East Rail Line (“EAL”) has started for the replacement works. Reliability test during non-service hours will start in the second half of 2018.

4. The target completion for Tai Wai to Hung Hom Section is dependent on the verification and safety test on Hung Hom Station platform referred to Paragraph 52 below. As for the Hung Hom to Admiralty Section, we will endeavour to keep to target completion in 2021 as much as possible while ensuring safety at all times.

Progress in different sections

5. 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)

6. Fitting out works, building services, electrical and mechanical (“E&M”) equipment installation have been substantially completed at Hin Keng Station. Statutory inspections on civil, E&M, building and fire services installation works for Hin Keng Station were completed in April 2018. Other remaining system tests and statutory inspections for the

trackside between Tai Wai and Kai Tak stations are in progress. Meanwhile, the re-provisioning works for Hin Tin Playground have been substantially completed and handed over to Leisure and Cultural Services Department.

7. The viaduct and at-grade tunnel box connecting Hin Keng Station, drainage works and street lighting installation near the viaduct, as well as the related greening works have been completed. The construction of cycling tracks, bicycle parking spaces and new lay-bys have been substantially completed. The works for widening the pedestrian crossing outside Hin Keng Station are in progress, whereas road resurfacing works on Che Kung Miu Road will be carried out in the fourth quarter of 2018.

8. For the tunnel section inside Lion Rock, overhead line fixing and E&M installation works have been completed. The reinstatement of the works site at Hin Keng portal area of Lion Rock tunnels was substantially completed. As previously reported, because of the complicated geological conditions under the Hin Keng portal area of Lion Rock, the progress of tunnelling works was once behind the original schedule. A number of mitigation measures, such as increase of blasting charge, re-sequencing of works procedures and adoption of alternative tunnel lining formwork design have proved to be effective to recover the delay and tunnel breakthrough successfully took place in November 2015.

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

9. During the first Tunnel Boring Machine (“TBM”) drive from Diamond Hill to Ma Chai Hang, there has been substantial amount of mud encountered, which additional cleaning and maintenance of the cutter head of TBM and more frequent changes of disc cutters were required. Changes to the disc cutter design and modification of cutter head and ancillary facilities were adopted in the second drive which recovered some of the delay and the second TBM tunnel was broken through in April 2016. Following the completion of track-laying works in March 2017, overhead line fixing and E&M installation works have also been substantially completed in these tunnels. Overhead lines at the track sections between Hin Keng and Kai Tak stations have been energised since mid-October 2017. Dynamic tests of trains, signalling and various other railway systems are in progress.

10. At Ma Chai Hang, the structural works and architectural builder’s works and finishes (“ABWF”) for the ventilation building have been

substantially completed. Inspection of the ventilation building by the Fire Services Department (“FSD”) on the fire services installation and by Buildings Department (“BD”) to ensure compliance with the relevant building regulations were carried out in March and May 2018 respectively. Other remaining system tests and statutory inspections are ongoing.

11. The structural works for Fung Tak Emergency Access Point at the junction of Wong Tai Sin Road and Sha Tin Pass Road were substantially completed and the inspections by FSD on the fire services installation and by BD to ensure compliance with the relevant building regulations were completed in April and May 2018 respectively. The majority of the structural works for the adjacent Wong Tai Sin Public Transport Terminus (“PTT”) were substantially completed. Construction of the road section which connects Shatin Pass Road and the PTT, installation of noise barriers and street furniture including directional signage are in progress.

12. At Diamond Hill Station Extension, E&M and building services works will soon be substantially completed. The construction of Emergency Vehicular Access and site formation for landscaping are in progress. FSD inspections on fire service installation will take place in July 2018.

13. The pedestrian subways connecting the existing Diamond Hill Station and its extension underneath Lung Cheung Road were substantially completed. The reinstatement works for utilities along Lung Cheung Road were also completed. Road drainage, kerb and street furniture installation works are in progress. The west bound lanes of Lung Cheung Road would be reinstated to their original alignment in August whereas the east bound lanes are envisaged to be reinstated in September 2018.

14. Modification works continue at the existing Diamond Hill Station in its transformation into an interchange station for the existing Kwun Tong Line and the SCL. With the last additional escalators opened for use in June 2018, all the two lifts and four escalators in the existing Diamond Hill Station have been installed. Pedestrian diversion is being implemented at the existing Entrance A2 in order to extend its structure to the SCL Diamond Hill Station. The new structure connecting existing Entrance B with the station extension was substantially completed.

15. Due to the construction of the Diamond Hill Station extension, two

historical structures namely the former Royal Airforce Hanger and Old Pillbox were relocated and temporarily stored within the site area of Diamond Hill Station since 2013. To cater for the development plan coordinated by the Housing Department, the two historical structures will be relocated to the future Water Feature Park of the Diamond Hill Comprehensive Development Area Site. The relocation work is currently under preparation and expected to be implemented in the third quarter of 2018.

16. The improvement works of pedestrian facilities (including footbridges, covered walkways, lifts and escalators) in Tsz Wan Shan area, which was carried out as part of the project and entrusted to the Corporation by the Government, were all completed and opened for public use in October 2017.

17. For the tunnels between Diamond Hill and Kai Tak stations, trackside auxiliary and E&M installation works have been substantially completed.

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

18. Fitting out and E&M works at Kai Tak Station have been substantially completed. Following the completion of FSD and BD inspections for Kai Tak Station in February 2018 and the associated tunnels in June 2018, statutory inspection by the Electrical and Mechanical Services Department will be carried out in the third quarter of 2018. The temporary footpaths connecting Kai Tak Station and the public roads in the vicinity have been substantially completed, and the road lighting installation work being followed up. The remaining sections of public roads to be constructed by relevant government departments and organisations are targeted for completion before the commissioning of the Tai Wai to Hung Hom Section.

19. As mentioned in our previous reports, the archaeological works at Sung Wong Toi Station have once caused a delay of 11 months to the original programme of the Tai Wai to Hung Hom Section. A number of delay recovery measures in Kowloon City area have been implemented to recover some of the delays. For example, by re-sequencing the works procedures and adjusted the site management, the construction of station structure and removal of TBM launching shaft were carried out in the Sung Wong Toi Station site area simultaneously.

20. Due to previous archaeological discovery of Sung Wong Toi Station, the adit connecting Pak Tai Street could not be constructed according to the original plan. To identify a suitable alternative alignment for the construction of the adit, a separate archaeological survey is required. The survey will first be carried out at key locations i.e. the connecting ends at Pak Tai Street and the station, in the fourth quarter of 2018. Depending on the findings, the survey area may be extended to confirm the feasibility of an alternative alignment.

21. Meanwhile, to provide an interim connectivity to Sung Wong Toi Station upon the commission of Tai Wai to Hung Hom Section, a feasibility study for a temporary at-grade crossing between Tam Kung Road and Sung Wong Toi Road has commenced, targeting for commencement of the construction works in late 2018.

22. Fitting out and E&M works at Sung Wong Toi Station and the associated entrance towards Nam Kok Road are in full swing. Construction of footpaths connecting Sung Wong Toi Station and the public roads in the vicinity will commence in the third quarter of 2018.

23. Internal structural works at the emergency access shafts on Tam Kung Road and Chi Kiang Street have been substantially completed, fitting out and E&M works are underway.

24. Inside To Kwa Wan Station, E&M, fitting out and building services works at all levels continue. External finishing for the four station entrances at To Kwa Wan Market, Lok Shan Road, Kiang Su Street and Chi Kiang Street are on-going. Reinstatement of water mains, drainage and roads are being carried out on Ma Tau Wai Road in phases and is expected to be completed in the first half of 2019.

25. With regard to the non-compliance concerning three locations at an internal wall adjacent to two staircases near the upper platform level in To Kwa Wan Station, the Contractor will carry out the rectification works once necessary consent for the proposal has been obtained from the Corporation and Government. The reinforcement rectification works are expected to take around three months.

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

26. Under the SCL, two railway tunnels are being constructed north of Hung Hom Station to connect the existing EAL and WRL to form the

cross-harbour EAL and TML respectively. For the future connection from Ho Man Tin Station to Hung Hom Station, structural works and track-laying works of the tunnel have been completed. For the tunnel connecting the existing EAL to the extension of Hung Hom Station to form the cross-harbour EAL, structural works were substantially completed and track works have commenced.

27. With the completion of all tunnel structures, all temporary traffic management schemes along Chatham Road North, Winslow Street underpass slip road, and Hong Chong Road slip road were completed and re-opened for use. Reinstatement of Oi Sen Path walkway was also completed and opened for public use.

28. Hung Hom Station will become the interchange station of TML and the cross-harbour EAL of the SCL. To cater for the future railway services, two levels of new platforms designated for Tuen Ma Line (TML) (i.e. the East West Corridor of the SCL) and the EAL have been built under the existing station podium. E&M works, building services and fitting out works for the new platforms are substantially completed and testing and commissioning works are in full swing. To prepare for the future arrangements, modification works are now being carried out in stages. The modified northern and southern concourses have been re-opened in 2016 and 2017 respectively upon the completion of the first two stages of modifications. Stage three modification works including ABWF works, building services provisions, as well as new escalators and lifts installations are substantially complete.

29. Statutory inspection for E&M installations is expected to be carried out at the new station extension by the third quarter of 2018.

30. Structural works, building services works, E&M works, track-laying and overhead line installation works of the stabling sidings at the former Hung Hom Freight Yard have been substantially completed and the inspection by FSD for the fire services installation was completed in mid-May 2018.

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

31. To extend the existing EAL across Victoria Harbour to Hong Kong Island, a new cross-harbour rail tunnel is being built under the SCL project by the IMT method.

32. The fabrications of the IMT units in the ex-Shek O Quarry have been completed in March 2017, and all 11 IMT pre-cast units have been immersed and installed in April 2018. The final connection works are expected to be completed in early 2019.

33. With the anticipated completion of marine works in CBTS by end 2018, moorings in CBTS will be reinstated in phase progressively. The Corporation will continue to liaise with Marine Department and the stakeholders to ensure that the mooring arrangement is well coordinated.

34. To facilitate the seabed restoration works after the completion of IMT immersion and installation works, the existing fairway diversion within the Victoria Harbour, which has been implemented from November 2017, will continue until the third quarter of 2018.

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

35. All TBM tunnelling works from CBTS to Exhibition Centre Station and construction of the walkways and track bed along both up-track and down-track tunnels were completed. Structural construction of a sump pit in the up-track tunnel is in progress and is expected to be completed by the third quarter of 2018.

36. Meanwhile, the temporary reclaimed land at the western side of CBTS, which was the supporting works site for the tunnelling works, was released in February 2018. The footpath along the waterfront adjacent to the former Police Officers' Club ("POC") was reopened.

37. At the works site of the former POC, excavation works for constructing the ventilation building were completed and structural works for the building are underway. Foundation works and the subsequent bulk excavation for the reprovisioning of the POC were completed and the associated basement construction works have commenced since the end of June 2018.

38. At the Tunnel Approach Rest Garden near CBTS, reinstatement of the underground box culvert is on-going and underpinning of the Canal Road flyover has been completed. Reinstatement of the rest area and recreational facilities is targeted to commence in the fourth quarter of 2018.

39. For the tunnel on the western side of Exhibition Centre Station, TBM “Athena” has completed the up-track and down-track tunnel boring drives between Fenwick Pier Street works site and Admiralty Station in 2017. During the course of works, “Athena” has successfully passed beneath the existing Tsuen Wan Line tunnels without any impact on the existing train service. Subsequent to the completion of TBM tunnelling works, the dismantling of the TBM was substantially completed in late March 2018. The breakthrough works between the TBM tunnels and the SCL platforms at Admiralty Station were completed and subsequent structural construction works are targeted to be completed in late 2018.

40. In Wan Chai North area, construction works for Exhibition Centre Station and the relevant railway facilities are underway. When the excavation reached closer to the former seabed level, where there is a potential risk of discovering unexploded bombs, a particularised and controlled excavation with the additional precautionary measures has been adopted. Following the discovery of two wartime bombs at the former Wan Chai Swimming Pool area in January 2018, excavation works continued to be conducted in a strictly controlled manner to uphold safety and to minimise risks. A third wartime bomb was discovered at the former Harbour Road Sports Centre area on 10 May and was successfully disarmed and removed by the Hong Kong Police Explosive Ordnance Disposal Bureau on 11 May 2018.

41. Due to limited space in Wan Chai North, temporary traffic management schemes are being implemented in phases in Wan Chai North to create works areas for the abovementioned works.

42. For the works site on the reclamation area under the Wan Chai Development Phase II (“WDII”) project, the Civil Engineering and Development Department handed over the relevant site in phases until January, February and July 2017, with the handover date of part of the works areas deferred by seven months.

43. As previously reported, the delayed handover of critical works areas and the need to allow flexibility for the convention facilities above Exhibition Centre Station has generated a delay of six months in the completion of Exhibition Centre Station and will bring the completion of the Hung Hom to Admiralty Section to 2021.

44. 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 up to March 2017 for the purpose of interfacing works at the Western Approach Tunnel of Exhibition Centre Station, as well as the tunnelling works to Admiralty Station.

45. As previously reported, a 40 meters long pipe pile was left on site underground within the parcel of land, 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 was not completed. As a result of these uncompleted works, the Corporation and its Contractor have to overcome 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.

46. 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.

47. A 900-metre overrun tunnel will be extended southwards from the SCL platform at Admiralty Station for future train regulation. A 200-metre-long section of this overrun tunnel was completed by the SIL (East) project in 2015. Drill and blast excavation of the remaining 700-metre-long section extending from Hong Kong Park and tunnel lining works for the overrun tunnel were completed in June 2017 and mid-March 2018 respectively. Tunnel internal structure works has been completed in June 2018 and building services works are on-going. The structural works of the Hong Kong Park Ventilation Building have commenced and targeted to complete in mid-2019.

48. The internal structural works, architectural finishes and building services installation works for the extended Admiralty Station are in progress. The relocation of Environmental Control System plant room and associated E&M facilities were completed in December 2017, and the existing plant room in the Admiralty Station has been dismantled.

QUALITY AND SAFETY OF SCL CONSTRUCTION WORKS

49. The Corporation fully understands public concern on the quality of the construction works at Hung Hom, To Kwa Wan and Exhibition Centre stations of the SCL. We have submitted relevant information and reports, and attended four special meetings of the Subcommittee on Matters Relating to Railways and Panel on Transport on 6, 13 July and 31 August 2018 to address members' concerns. (Please refer to LC Paper No. CB(4)1354/17-18(01), LC Paper No. CB(4)1390/17-18(01), CB(4)1504/17-18(04) and CB(4)1514/17-18(02) for details).

50. Safety and quality of railway projects have always been the top priority of the Corporation and safety to the public and site workers had at no time been compromised. While excavation works at To Kwa Wan Station have been completed, in order to allay public concerns on the possible impacts on the nearby structures and facilities, the relevant excavation works for Exhibition Centre Station was temporarily suspended. With a set of revised trigger values agreed with relevant government departments, the Corporation has resumed the excavation works cautiously. The Corporation also notes that the Government has set up a new announcement mechanism with a view to providing timely information to the public when the monitoring data in relation to relevant structures and facilities have reached the trigger values. The Corporation will work closely with the Government in accordance with the mechanism. In going forward, the Corporation will continue the stringent monitoring over any impact on nearby structures and underground utilities to ensure safety. When settlement readings reach trigger level, appropriate follow-up actions will be taken.

51. On 7 August 2018, the Corporation announced that the report submitted by the Corporation to the Government on 15 June 2018 in relation to the platform slab at the Hung Hom Station extension contained inaccuracies in respect of the construction methodology of the top side of the platform slab. The Corporation is investigating this issue and will provide updated information to the Government in due course.

52. Regarding the East West Corridor platform slab at the Hung Hom Station extension, in order to provide additional assurance to the public, the Corporation has engaged an independent expert to conduct safety tests to confirm its structural safety and long term performance. The Corporation is in discussion with relevant government departments on the test methodology formulated by the expert. The test will commence upon the approval of the test methodology by relevant government departments.

53. The Corporation will also co-operate fully with the Commission of Inquiry as well as law enforcement agencies on their investigations on the diaphragm wall and the platform slab at the Hung Hom Station extension.

54. In the meantime, the Corporation's Board has asked its Capital Works Committee (CWC) to conduct a review of the processes and procedures for SCL within the Corporation's project management system (PIMS) to seek improvement. The CWC has engaged external consultants to assist it in this review.

NEW TRAINS

55. To facilitate the future operation of the extension of EAL to Hong Kong Island, 37 sets of new trains are being delivered to Hong Kong in batches. Stringent testing and commissioning for the delivered new trains are underway at Ho Tung Lau Depot. Dynamic testing has been in progress at the existing EAL during non-service hours since December 2015. 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.

56. On the other hand, 17 sets of new trains for TML 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 of the trains is underway at the existing WRL and MOL, as well as the section between Hin Keng and Hung Hom stations.

SERVICE ENHANCEMENT BY TRAIN CONVERSION

57. 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 TML. The full fleet of 15 4-car MOL trains have already been upgraded to 8-car trains in December 2017 and the overall carrying capacity on the MOL has been doubled. The conversion of 7-car WRL trains to 8-car trains has also been recently completed in May 2018.

IMPROVEMENT WORKS FOR THE OPERATING RAILWAY FACILITIES

58. The retrofitting works of a total of 720 pairs of Automatic Platform Gate (“APG”) at all 9 MOL stations were completed in December 2017, which was a year ahead of the original plan.

59. The retrofitting of APGs will also be carried out for the 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 and construction of equipment rooms for the signalling and communication systems along the EAL have been substantially completed. Subsequent works including floor tiling and defect rectification are underway. 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.

60. As regards 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 new trains will be progressively launched upon the commissioning of Tai Wai to Hung Hom Section which will generate diversion effect. Hence, the installation programme of APGs will be aligned accordingly. To facilitate the future operation of new trains and APGs, the existing signalling system of the EAL has to be upgraded.

61. Since the EAL signalling replacement works commenced in the third quarter of 2015, the installation of the equipment in trains and at trackside along the EAL has been substantially completed. Dynamic test of the new signalling system has commenced by sections since October 2016, while the dynamic tests have extended to full line of EAL in March 2018 and are now in full swing. The reliability test is expected to be carried out in the second half of 2018 to be completed in the first quarter of 2019.

62. To avoid impact on day time train service, the dynamic tests could only be conducted during non-service hours and hence may have some noise impact on residents nearby. The new trains were equipped with better noise-reduction features. During the tests, mitigation measures such

as restriction of the number of trains in night test would also be in place to minimise the possible noise impacts as possible. The Corporation will continue to communicate with the residents nearby and keep them updated on the information about the night tests.



Testing of signalling system along the existing EAL

COSTS

Cost and expenditure

63. 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 \$57.660 billion. The contract sums for civil works and E&M works are about \$43.758 billion and \$13.902 billion respectively (Please refer to Enclosure I)

64. 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.

Cost control mechanism

65. 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.

66. 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.

67. 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.

68. 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.

Latest estimate of Cost to Complete ("CTC")

69. On 5 December 2017, the Corporation announced that the detailed review of the estimated CTC for the main construction works of SCL has completed. Taking into account a number of factors, and based on the revised programme to complete the "Tai Wai to Hung Hom Section" and "Hung Hom to Admiralty Section" in mid-2019 and 2021 respectively, the Corporation has increased the latest estimate of the entrustment cost of the main works by \$16.5 billion from \$70.8 billion to \$87.3 billion. The latest estimate and supplementary information were submitted to the Government for its review, while the Corporation will provide any further information required.

STAKEHOLDER COMMUNICATION AND ENGAGEMENT

70. 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. Apart from the regular progress updates to the Subcommittee members and respective District Councils, Community Liaison Groups,

which have been set up across districts is another major communication channel with the local communities where regular updates about SCL are provided. Newsletters, leaflets and notices about the works are distributed to the local communities, and dedicated MTR and Contractors' Hotlines are available for handling enquiries and complaints in relating to the project. The SCL Information Centre in To Kwa Wan has also handled over 1,300 enquiries since October 2012.

EMPLOYMENT OPPORTUNITIES

71. As at 30 June 2018, about 4,688 construction workers and technical / professional staff members are employed for the SCL project, which in general could meet the labour requirement as the project has passed its construction peak. Nevertheless, for a sustainable development of the construction industry, the Corporation will continue the "SCL Contractors Cooperative Training Scheme" to attract new blood to join the construction industry. 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 763 trainees with 504 having completed the trade test and continuing their careers in the field.

CONCLUSION

72. Members are invited to note the above information.

MTR Corporation Limited
October 2018

Expenditure report as at 30 June 2018

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	43,758.2	41,812.9	1,838.3
E&M works	13,901.8	5,552.4	928.1
Total	57,660.0	47,365.3	2,766.4

* The estimated amount of unresolved claim: Amount claimed (\$3,790.6 million) – Interim award (\$1,024.2 million) = \$2,766.4 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	300	3,039.2	1,780.8	422	2,598.5	760.2
E&M works	9*	0	0	130	1,192.1	264.0
Total	309	3,039.2	1,780.8	552	3,790.6	1,024.2

* 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 2018, the Corporation received 861 substantiated claims and the amount claimed in total was about \$6,829.8 million, representing 11.8% 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 2018, 309 cases were resolved and about \$1,780.8 million was

awarded, representing about 3.09% 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 \$1,024.2 million was made for some cases.

Overall works progress of the SCL as at 30 June 2018

Overall works completed : 86%

Percentage completed as originally planned ⁽¹⁾: 90%

(A) Cumulative 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	100%
1103	Hin Keng to Diamond Hill Tunnels and Fung Tak Public Transport Interchange	100%
1106	Diamond Hill Station Extension	98%
1107	Diamond Hill to Kai Tak Tunnels	100%
1108	Kai Tak Station and Associated Tunnels	100%
1108A	Kai Tak Barging Point Facilities	100%
1109	Stations and Tunnels of Sung Wong Toi and To Kwa Wan stations	98%
1111	Hung Hom North Approach Tunnels	100%
1112	Hung Hom Station and Stabling Sidings	99%
1113	Reprovisioning of New Territories South Animal Management Centre and Shatin Plant Quarantine Station	100%
1114	Pedestrian Links at Tsz Wan Shan	100%
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	100%
1120B	Trackwork and Overhead Line for SCL Phase 2	32%
1121	EAL Cross Harbour Tunnels	93%
1122	Admiralty South Overrun Tunnel	87%
1123	Exhibition Centre Station and Western Approach	64%

	Tunnel	
1124	Admiralty SCL Related Works	33%
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	76%
1129	SCL - Advance Works for Cross-harbour EAL	100%
11209	Platform Modification and Associated Works at EAL	100%
11227	Advance Works for EAL 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) Cumulative progress of 30 major E&M contracts awarded :

Contract No.	Contract Name	Percentage completed
1141A	New Rolling Stock for SCL Phase 1	97%
1141B	New Rolling Stock for SCL Phase 2	59%
1151	Rolling Stock Modification and New Train Cars for SCL Phase 1	95%
1152	Signalling System for SCL Phase 1 & Signalling System Modification for MOL and WRL	96%
1152B	Signalling System for SCL Phase 2	75%
1153	Tunnel ECS for SCL Phase 1	94%
1153B	Tunnel ECS for SCL Phase 2	39%
1154	Platform Screen Doors for SCL Phase 1 & APG Retrofit for MOL	97%
1154B	Platform Screen Doors for SCL Phase 2 & APG Retrofit for EAL	35%
1155	Power Supply System and Trackside Auxiliaries for SCL Phase 1	95%
1155B	Power Supply System and Trackside Auxiliaries for SCL Phase 2	40%
1159	Lifts for SCL Phase 1	90%
1162	TETRA System for SCL Phases 1 & 2	92%
1162B	Radio Distribution Network System for SCL Phases 1 & 2	64%
1163	AFC System and SAM System for SCL Phases 1 & 2	59%
1164	Building Services for Diamond Hill Station	96%
1164B	Building Services for SCL Hong Kong Island Section	16% ⁽³⁾
1165	Building Services for Hin Keng Station, Ma Chai Hang Ventilation Building and Fung Tak Emergency Access	99%
1166	Main Control System for SCL Phase 1	97%
1166B	Main Control System for SCL Phase 2	60%
1169	Communications System for SCL Phase 1	94%
1169B	Communications System for SCL Phase 2	19%

1172	Escalators for SCL Phase 1	92%
1172B	Lift and Escalators for SCL Phase 2	18%
1173	Building Services for Hung Hom Station and Hung Hom Stabling Sidings	89%
1175	Building Services for Kai Tak Station	100%
1176	Building Services for Sung Wong Toi Station and Ancillary Building	90%
1177	Building Services for To Kwa Wan Station and Ancillary Building	91%
1183	EAL Signalling System Modification	100%
1191	Floodgate System for SCL Phase 2	27%

Note:

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

土瓜灣站工地考古文物保育方案

附件三 Annex 3

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