

**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 2019)**

(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 2019.

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 revised cost estimate of the main works of the SCL project from MTRCL on 5 December 2017. MTRCL indicated a need of adjusting upward the entrustment cost of the main works of the SCL project, from

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.

\$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 2017 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, has held several meetings with MTRCL, and is reviewing rigorously the information given by 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. Meanwhile, MTRCL is revising the latest cost estimate of the main works of the SCL project. Upon completion of the detailed assessment and review on the revised cost estimate, 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 2019 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, construction of Emergency Vehicular Access outside the station and diversion works for the underground utilities and road reinstatement works at Che Kung Miu Road were completed. The relevant system testing inside the station was 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 of the two pedestrian adits, in the Diamond Hill Station and underneath Lung Cheung Road, connecting SCL and the Kwun Tong Line were completed. The relevant system testing and statutory inspections at the Diamond Hill Station continued. Reinstatement works for all the carriageways and footpath of Lung Cheung Road as well as the emergency access point at the junction of Wong Tai Sin Road and Sha Tin Pass Road were completed. Regarding the adjacent Public Transport Terminus, cable duct laying works was substantially completed. The coach park at the upper deck of the Public Transport Terminus commenced operation by the end of September 2019. MTRCL is constructing the access road between the lower deck of the Public Transport Terminus and Sha Tin Pass Road. The construction of the Ventilation Building at the former Ma Chai Hang Recreational Ground was 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 building services systems, E&M systems as well as the statutory inspections at Kai Tak Station were substantially completed. Most at-grade footpaths outside the station were handed over to the relevant departments and opened for public use.

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 alternative 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 preparing to construct the addition of at-grade crossing at Sung Wong Toi Road and Tam Kung Road, which is adjacent to Pak Tai Street, for reducing the walking distance between the vicinity of Pak Tai Street and the station entrance/exit. MTRCL has temporarily closed part of the Pak Tai Street in June 2019 for the commencement of archaeological investigation work. 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. The building services works, E&M works and statutory inspections of the station were substantially completed. Reinstatement of roads and leisure facilities in the vicinity of the station was in progress.

To Kwa Wan Station

15. The building services works and E&M works of the To Kwa Wan Station were completed. Tests for the relevant system inside the station and the statutory inspections were underway. Fitting out works at the station entrances and ventilation building, reinstatement of underground utilities at Ma Tau Wai Road and nearby leisure facilities were also on-going. 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. It is expected that Ma Tau Wai Road will be resumed in three-lane and two-way mode in phases progressively starting from the fourth quarter 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 Subcommittee 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)). MTRCL completed the reinstatement works according to the agreed reinstatement proposal in the first quarter of 2019.

17. The status of the settlement monitoring points near the To Kwa Wan Station was presented in details at the special meeting of Subcommittee on Matters Relating to Railways on 31 August 2018. Currently, the cumulative settlement of the affected facilities near To Kwa Wan Station, including buildings, public utilities and roads, does not exceed the pre-set or updated trigger levels. The MTRCL would continue to monitor these monitoring points. In view of the public's concerns, in January 2019, MTRCL launched the scheme "To Kwa Wan Station Community Care Programme" on a without prejudice basis for the provision of financial assistance through simplified procedures and practical means to the affected owners of building units in the vicinity of To Kwa Wan Station for repairing walls in their units. Registration period of the "To Kwa Wan Station Community Care Programme" lapsed in June 2019. The professional building surveying consultant appointed to execute the programme continues processing the applications received.

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 and E&M installation works adjacent to the railway track were substantially completed.

19. The Government attaches great importance to the incident of re-bar cutting at the platform of the Hung Hom Station Extension under the SCL project reported in end-May 2018 as it is related to public safety. The Chief Executive in Council appointed on 10 July 2018 a Commission of Inquiry ("Commission") which is chaired by Michael Hartmann, former Non-Permanent Judge of the Court of Final Appeal, under the Commissions of Inquiry Ordinance (Chapter 86) to carry out investigations on the facts and circumstances surrounding the construction works of the diaphragm wall and platform slab of Hung Hom Station Extension under the SCL project. 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.

20. Since MTRCL has failed to submit comprehensive as-constructed records including the working drawings used during construction to ascertain the as-constructed condition and clarify the quality of works where there were honeycomb etc, the Transport and Housing Bureau (“THB”) and its Expert Adviser Team (“EAT”), relevant government departments, experts of the Department of Civil Engineering and the Department of Statistics and Actuarial Science of the University of Hong Kong (HKU) and MTRCL have held several meetings to discuss the solutions. The Government requested MTRCL to formulate a holistic strategy to verify the condition of the platform slab structure of the Hung Hom Station Extension.

21. After several discussions between the government and MTRCL, MTRCL submitted the proposed holistic assessment strategy on 4 December 2018. According to the MTRCL’s proposal, the holistic assessment will be conducted in three stages. For the first stage, the MTRCL will review the relevant construction records and the latest design amendment drawings. In the second stage, MTRCL will open up part of the East West Corridor and the North South Corridor platform slabs to verify the details of the rebar connections and whether the couplers and rebars are properly connected. In the third stage, MTRCL will conduct a comprehensive review and analysis of the structural safety and integrity of the entire Hung Hom Station based on the verification results of the first and second stages to ascertain if the overall structural integrity of the works is acceptable and determine if it is necessary to carry out strengthening works. On 5 December 2018, the Government accepted the proposed holistic assessment strategy submitted by the MTRCL regarding the platform slabs and diaphragm wall of the Hung Hom Station Extension under the SCL.

22. The opening-up of concrete and the Phased Array Ultrasonic Tests (“PAUT”) under the second stage were completed on 29 April 2019. The relevant results have been uploaded to the Highways Department's website for the SCL project for reference by the public. MTRCL also completed the works in the third stage of the holistic assessment strategy. On 18 July 2019, the Government scrutinized and accepted the MTRCL’s final report on the holistic assessment strategy for the Hung Hom Station Extension. The report was submitted to the Commission and uploaded to the Highways Department's website for the SCL

project

(https://www.hyd.gov.hk/en/road_and_railway/railway_projects/scl/index.html) on the same day for reference by the public. According to the final report, MTRCL proposed suitable measures to address poor workmanship issues and to attain the safety level required by the Code of Practice for Structural Use of Concrete under the Buildings Ordinance (“BO”) as well as established good practice of engineering design. The suitable measures including drilled-in bars, local thickening of slabs, reinstatement of shear links, addition of columns, grouting, etc, are proposed to address the workmanship issues of coupler connections, shear links, horizontal construction joints, seepage, etc. MTRCL would take 4 to 6 months for the design of suitable measures and obtain Government’s agreement, and 9 to 12 months for completion of the work. MTRCL would develop a long-term structural monitoring scheme including instrumentation and inspection to monitor the ongoing structural integrity of the structure. MTRCL is further developing the details of the suitable measures, and will submit to the Government for acceptance.

23. As a matter of prudence, other than the Hung Hom Station, the Government has also checked the major structural works of other stations of the SCL project to confirm if there are quality issues similar to those at the Hung Hom Station Extension. Under the supervision of the EAT of THB, HyD and the M&V consultant have completed the review of construction works of Tai Wai Station, Hin Keng Station, Diamond Hill Station, Kai Tak Station, Sung Wong Toi Station and To Kwa Wan Station along East West Corridor under the SCL project focusing on the deficiencies of the records related to quality control of works and site supervision. Government has informed MTRCL of the findings and requested MTRCL to carry out an investigation into the deficiencies identified during inspection including incomplete construction records, for assessing the potential implications, and proposing remedial actions. Besides, MTRCL has voluntarily conducted an internal audit on the major works of Tai Wai Station, Hin Keng Station, Diamond Hill Station, Kai Tak Station, Sung Wong Toi Station, To Kwa Wan Station and Ho Man Tin Station in order to review the situation of construction records of relevant stations. Relevant internal audit has been substantially completed and about 90% of the structure related Request for Inspection and Survey Check (“RISC”) forms are available. These results are generally consistent with the findings of the sampling audit conducted by the M&V Consultant. MTRCL has conducted an investigation into the incomplete construction records and proposed to the Government relevant remedial actions including the employment of independent Registered Structural Engineer and the regular monitoring of relevant

station structures after the commissioning of the stations for assessment and assurance of the structural safety.

24. The Government made a public announcement on 30 January 2019 that some of the works-related documentation of the North Approach Tunnels (NAT), the South Approach Tunnels (SAT) and the Hung Hom Stabling Sidings (HHS) were missing and some of the construction works involving deviations from the designs, plans or drawings accepted by HyD or BD might have been carried out. The Chief Executive in Council approved on 19 February 2019 the expansion of the terms of reference of the Commission of Inquiry under the chairmanship of Mr Michael Hartmann, former Non-Permanent Judge of the Court of Final Appeal, to inquire into the above issues.

25. The Commission submitted to the Chief Executive on 25 February 2019 the Interim Report of Commission of Inquiry into the Construction Works at and near Hung Hom Station Extension. Based on legal consideration, the Government released the redacted Interim Report on 26 March 2019 to avoid any prejudice (actual or perceived) to any ongoing criminal investigations and any potential prosecutions of any criminal offences in the future (if so decided to be justified after the relevant investigations).

26. The Commission conducted a preliminary hearing on 6 May 2019 in relation to the expanded part of the inquiry. The substantive hearing to take factual evidence was held between 27 May and 17 June 2019, and was resumed on 23 September 2019. To conduct hearings on new issues raised in the reports submitted by MTRCL on 18 July 2019 and at the request of the Commission, the Chief Executive in Council approved on 10 September 2019 an extension of time for the Commission to submit its final report to the Chief Executive by 31 March 2020.

27. Regarding the issues announced on 30 January 2019 (see above paragraph 24), the Government sternly requested MTRCL to provide a detailed account of the case; review whether there are similar problems in other parts of the relevant contract; submit a holistic study to ascertain the as-constructed conditions; and assess the programme implications on the full or partial commissioning of the Tuen Ma Line. On 7 May 2019, MTRCL submitted a Verification Proposal of As-Constructed Conditions of the NAT, SAT and HHS to HyD. After discussions with EAT, HyD and BD, MTRCL submitted a revised Verification Proposal to HyD on 15 May 2019. The Government accepted the Verification Proposal on 15 May

2019, and urged MTRCL to expedite the verification works. The Proposal consists of two parts. Part one consolidates and verifies available construction records; and reviews and ascertains as-constructed conditions of the structures. Part two conducts a structural review. The Government scrutinized and accepted the MTRCL's final verification study report on as-constructed conditions of the NAT, SAT and HHS on 18 July 2019. The report was submitted to the Commission on the same day and uploaded to the Highways Department's web page for the SCL project

(https://www.hyd.gov.hk/en/road_and_railway/railway_projects/scl/index.html) for reference by the public. Based on the results of the structural review in the final verification study report and to ensure structural integrity, MTRCL proposed suitable measures at certain locations at the SAT under the North South Line and trough walls of the HHS. MTRCL will further develop the details of these measures for submission to the Government for acceptance. The required measures are to be implemented concurrently with those for the HUH Extension.

Hung Hom to Admiralty Section

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

28. The construction works of the ventilation building near the shore at Hung Hom was completed. Track laying works and E&M installation works adjacent to the railway track inside the cross harbour tunnel were underway. The overall progress of the cross harbour tunnel section is generally on schedule.

29. Upon completion of the phased seabed improvement works in the Causeway Bay Typhoon Shelter (CBTS), MTRCL would gradually start re-arranging the permanent mooring of vessels affected by the previous works. MTRCL would continue communicating with relevant government departments and stakeholders within CBTS.

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

30. Bulk excavation works at the Exhibition Centre Station and Western Approach Tunnels were substantially completed in June 2019. Works underway included station structures, covering base slabs, platforms and concourse; remaining

foundation works for the connecting footbridges to the future station, facilities at Wan Chai Sports Ground and the topside development; down track of the Western Approach Tunnels. For the West Ventilation Building located at Fleming Road, construction of the 8th and 7th basement levels was substantially completed while the works for the 6th basement level was underway.

31. To facilitate the remaining construction works of the Exhibition Centre Station, temporary traffic management measures would continue in stages at Wan Chai North. The temporary traffic management measures near Convention Avenue, Fleming Road, Expo Drive East implemented in March 2019 would tentatively continue to late 2019 or early 2020, followed by another stage of temporary traffic management measures at the junction of Tonnochy Road, Harbour Road and Convention Avenue.

32. At the former Harbour Road Sport Centre (HRSC) and Wan Chai Swimming Pool sites, which were demolished to make room for the construction of Exhibition Centre Station, results of the further ground investigation works at the original HRSC showed that the actual rockhead level was higher than anticipated, thus requiring the need to excavate more rock, protracting the construction period and affecting the progress of the works.

33. After the erection of a section of the permanent footbridge at Convention Avenue connecting to Wan Chai Ferry Pier in November 2018, MTRCL scheduled the re-provision of the remaining section of the permanent footbridge and the demolition of the associated temporary footbridge in late 2019 or early 2020. By then, Convention Avenue would be temporarily closed for several nights for the construction of the relevant works.

34. 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. Subsequent to the completion of the excavation works at the concerned location, risk of flooding is significantly reduced and the structural works for tunnels were underway. MTRCL previously indicated that given the issue of the left-in pipe pile, there would be a further 3-month delay to the progress of the SCL and an increase in construction cost.

35. 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 2018 as well as the subsequent quarterly progress update. According to MTRCL's monitoring data, the cumulative settlement of the affected facilities near Exhibition Centre Station, including buildings, public utilities and roads, does not exceed the pre-set or updated trigger levels. The updated pre-set trigger levels are listed in MTRCL's progress report (Enclosure III of **Annex 2**).

Conclusion

36. In view of the assessments as mentioned in paragraphs 9 to 35 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 from 2012 to 2014, the commissioning date of "Tai Wai to Hung Hom Section" was deferred to end 2019. With the implementation of delay recovery measures, the target commissioning date of the "Tai Wai to Hung Hom Section" could originally be advanced to mid-2019. However, due to the series of incidents related to the quality of works of the Hung Hom Station Extension revealed in May last year, associated investigation works and proposed suitable measures, the target commissioning date of the "Tai Wai to Hung Hom Section" would be deferred to the end of 2021.

37. To ensure the public enjoyment of the new railway as soon as possible and with regard to safety and other factors for operational feasibility, MTRCL proposed and the Government accepted to duly commission of three new stations, namely Hin Keng Station, Diamond Hill Station Extension and Kai Tak Station, in the first quarter of 2020. Passengers of Ma On Shan Line would be able to commute directly to the three new stations via Tai Wai Station and the entire railway from Wu Kai Sha Station to Kai Tak Station is now officially named as "Tuen Ma Line Phase 1".

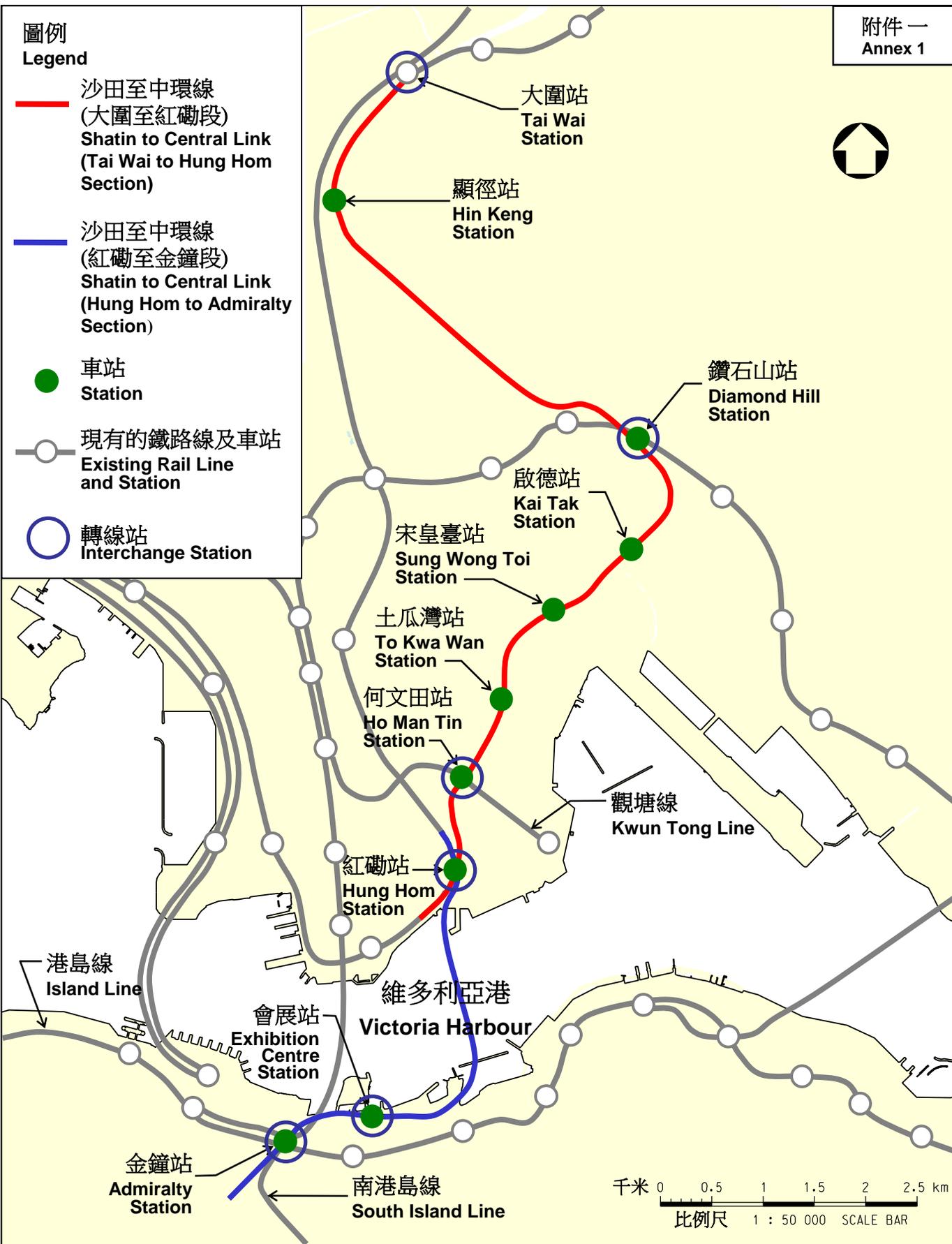
38. Given the impact of site handover arrangement under the WDII project, the complicated ground conditions below Exhibition Centre Station, the settlement issue leading to a suspension of the excavation works at the Exhibition Centre Station, as well as the allowance of flexibility for the construction of new convention facilities atop Exhibition Centre Station, the works progress of the Hung

Hom to Admiralty Section have been affected. Whether the target commissioning date could remain to be 2021 will be reviewed pending the progress of suitable measures at Hung Hom Station Extension. We still strive to complete the remaining works of the SCL by 2021. Besides, due to the East Rail derailment incident near Hung Hom Station on 17 September 2019, MTRCL had to conduct investigation and enhance the maintenance works during non-traffic hours. As such, the test schedule for the new signaling system of the East Rail Line had to be adjusted to take account of the investigation and maintenance works done at non-traffic hours. HyD requested MTRCL to assess as soon as possible whether the above arrangement would cause great impact on the works of SCL. 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 2019**

圖例
Legend

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



圖則名稱 drawing title

沙田至中環線的走線

Alignment of the Shatin to Central Link

圖號 drawing no.

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路政署
HIGHWAYS DEPARTMENT

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

**Progress Update of the Shatin to Central Link
(As at 30 June 2019)**

INTRODUCTION

This report updates Subcommittee members on the progress of Shatin to Central Link (“SCL”) as at 30 June 2019.

OVERVIEW OF THE SCL PROJECT

Works progress

2. As at 30 June 2019, the overall works for SCL were 90% complete. Over 99% of the works of the Tai Wai to Hung Hom Section have been completed. Statutory inspections for stations and railway facilities are being conducted progressively. Hung Hom to Admiralty Section was 79% complete as at 30 June 2019. Bulk excavation works for Exhibition Centre Station and the Western Approach Tunnel were completed in June 2019 and structural works are in full swing. Track laying work is on-going.

3. After completing a detailed feasibility study, the Corporation recommended and Government accepted that phased opening of the Tuen Ma Line (“TML”), covering three stations at Hin Keng, Diamond Hill and Kai Tak is feasible. Opening of the Tuen Ma Line Phase I is now targeted in the first quarter of 2020.

4. The above three new stations have been handed over to the Operations team to facilitate preparation for the phased opening. System modification works, including adjustments to the signalling system, re-cabling works, and modifications to some of the signage are taking place to enable the opening of TML Phase 1 once all statutory processes have been completed. Details of the phased opening arrangements are set out in Paragraph 38.

5. The full opening of TML depends on the implementation of the suitable measures at Hung Hom Station extension and its connecting structures. We expect the full TML can be opened about 12 months after completion of the suitable measures.

6. Similarly, the opening of the Hung Hom to Admiralty Section is dependent on the implementation of the suitable measures at Hung Hom Station Extension and its connecting structures. We need to first conclude the TML full opening programme and review the construction progress of Exhibition Centre Station before developing a target completion programme for the Hung Hom to Admiralty Section. Delay recovery measures are being adopted at Exhibition Centre Station works sites, including the employment of additional resources and extended working hours within the allowable period. The effectiveness of the delay recovery measures will need to be closely monitored.

Progress in different sections

7. SCL comprises six sections according to geographical location.

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

8. Statutory inspections and fire services installation works for Hin Keng Station, as well as the overhead line fixing and E&M installation works at the tunnel section inside Lion Rock are complete. As to the above-ground works site at the Hin Keng portal area of Lion Rock tunnels, reinstatement works are substantially complete. As previously reported, due to the complicated geological conditions under the Hin Keng portal area of Lion Rock, tunnelling work fell behind the original schedule. The tunnel was broken through in November 2015 after adopting a number of mitigation measures, such as increasing the blasting charge, re-sequencing of works procedures and adoption of alternative tunnel lining formwork design. These proved to be effective in delay recovery.

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

9. As previously reported, the first Tunnel Boring Machine (“TBM”) drive from Diamond Hill to Ma Chai Hang encountered substantial clay material, which required additional cleaning and maintenance of the TBM cutter head and more frequent changes of disc cutters. Changes to disc

cutter design and modification of the cutter head and ancillary facilities were then adopted in the second drive. This recovered some of the delay.

10. For the tunnels between Ma Chai Hang and Diamond Hill Station, track-laying works, overhead line fixing and E&M installation works are complete.

11. At Ma Chai Hang, following completion of structural works and architectural builder's works and finishes ("ABWF") of the ventilation building, statutory inspections were completed in the first quarter of 2019.

12. Statutory inspections for the adjacent Wong Tai Sin Public Transport Terminus ("PTT") are substantially complete. The design of the entrance / exit of lower deck of the PTT connected with Shatin Pass Road was revised as requested by relevant government departments. The corresponding temporary traffic management schemes are expected to be implemented at a later stage. To suit its latest operational and management arrangements, the additional conduits and modification works at coach parking area at the upper deck, which were revised at the Government's request, will be carried out. Civil works will commence in the third quarter of 2019, while associated cabling works and installation of the automatic control system for the coach parking area will be coordinated by relevant government departments.

13. At Diamond Hill Station Extension, all statutory inspections were completed in the first quarter of 2019. Modification works continue at the existing Diamond Hill Station to facilitate its transformation into an interchange station for the existing Kwun Tong Line and the future TML. Part of Entrance A2, which falls within the existing Diamond Hill Station boundary, was opened for public use in late February 2019. At the other end, the new structure connecting the existing Entrance B with the station extension was completed.

14. To cater for the development plan coordinated by the Housing Department, two historical structures, namely the former Royal Airforce Hanger and Old Pillbox, which were once stored within the site area of Diamond Hill Station, have been relocated to the future Water Feature Park of the Diamond Hill Comprehensive Development Area Site. The original temporary storage area within the site area of Diamond Hill Station is targeted to be handed over to relevant government departments in the fourth quarter of 2019.

15. In the tunnels between Diamond Hill and Kai Tak stations, trackside auxiliary and E&M works and statutory inspections are complete.

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

16. Fitting out, E&M works and statutory inspections at Kai Tak Station are complete. The temporary footpaths connecting Kai Tak Station and the public roads in the vicinity are also substantially complete. With coordination and consensus with relevant government departments, the temporary footpaths connecting Muk On Street, Muk Chui Street, as well as Ko Fei Lane North and Muk Yuen Street were opened for public use in January, March and June 2019 respectively.

17. As mentioned in previous reports, the archaeological works at Sung Wong Toi Station 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, such as re-sequencing the works and adjustment in site interface management, have recovered some of the delays.

18. Due to previous archaeological discoveries at Sung Wong Toi Station, the adit connecting Pak Tai Street could not be constructed according to the original plan. A separate archaeological survey is needed to identify a suitable alternative alignment for the construction of the adit. The survey has started in July 2019 at key locations i.e. the connecting ends at Pak Tai Street and the station. Subject to the findings, the survey may be extended to confirm the feasibility of an alternative alignment.

19. To provide an interim connectivity to Sung Wong Toi Station upon the full opening of TML, preparation works including temporary traffic management and an excavation permit application for construction of the temporary at-grade crossing at Sung Wong Toi Road near Tam Kung Road are underway. The construction works are targeted to commence in the fourth quarter of 2019 and to be completed by the first quarter of 2020.

20. For Sung Wong Toi Station, statutory inspections and the remaining external finishing for the five station entrances are complete.

21. Reinstatement work on Nam Kok Road footpath is expected to be completed in August 2019.

22. Statutory inspections for To Kwa Wan Station continue. The remaining external finishing works for the four station entrances at Lok Shan Road, Kiang Su Street, Chi Kiang Street and outside To Kwa Wan Market are progressing. Permanent reinstatement of the previously affected public utilities along Ma Tau Wai Road and nearby roads such as water mains, drainage system, electrical cables and roads are being carried out in phases.

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

23. Structural work and track-laying in the tunnel connecting Ho Man Tin and Hung Hom stations are complete. For the mainline tunnel connecting the existing East Rail Line (EAL) to the extension of Hung Hom Station to form the cross-harbour EAL, structural works, track works and E&M installation works are substantially complete.

24. With completion of all tunnel structures, the related temporary traffic management schemes along Chatham Road North, Winslow Street underpass slip road as well as Hong Chong Road slip road have been completed and re-opened for use. Reinstatement of Oi Sen Path walkway and amenity area were also completed and opened for public use.

25. E&M works, building services and fitting out works for the future TML platforms built under the existing Hung Hom station podium are substantially complete, ready for testing and commissioning. Stage three modification works of the existing station, to accommodate future station re-arrangements, including ABWF works, building services provisions, as well as new escalators and lifts installations are substantially complete.

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

26. To extend the existing EAL across Victoria Harbour to Hong Kong Island, a new cross-harbour rail tunnel has been built under the SCL project by Immersed Tube Tunnel (“IMT”) method. With the completion of the IMT structure, track laying works are being carried out.

27. Marine work in the Causeway Bay Typhoon Shelter (“CBTS”) for SCL has been substantially completed. To suit the schedule of the seabed improvement works in CBTS by other government infrastructure projects, moorings in CBTS will be reinstated in phases. The Corporation

will continue to liaise with the Marine Department and relevant stakeholders to ensure that the mooring arrangement is well coordinated to minimise any impact.

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

28. For the tunnel section between CBTS to Exhibition Centre Station, track laying and E&M installation works are underway.

29. At the works site of the former Police Officers' Club, following the completion of foundation works and bulk excavation, construction works for the super-structure are in progress.

30. At the Tunnel Approach Rest Garden near CBTS, reinstatement of the underground box culvert and underpinning of the Canal Road flyover are complete. Reinstatement of the rest area and recreational facilities is being carried out progressively and is expected to complete in 2020.

31. For the tunnel on the western side of Exhibition Centre Station, following tunnel breakthrough for SCL platforms at Admiralty Station and completion of tunnel lining works, track laying works are now underway.

32. In Wan Chai North area, construction works for Exhibition Centre Station and the relevant railway facilities are on-going. Temporary traffic management schemes are being implemented in the area in stages to facilitate the construction works.

33. Bulk excavation works for Exhibition Centre Station and the Western Approach Tunnel were completed in June 2019. Remaining foundation works, including the piling works to facilitate the station entrance and nearby facilities, are being carried out. As unexploded bombs were discovered in the works sites previously, the project team are working in a prudent manner to uphold safety and minimise risk. In the meantime, structural work for the Exhibition Centre Station and Western Approach Tunnel, including the construction of the upper and lower platform levels, station concourse, tunnel boxes and ventilation facility is in full swing.

34. Subject to works progress, reinstatement of the footbridge across Convention Avenue is expected to be completed in late 2019 or 2020.

The existing temporary footbridge will be dismantled after opening of the new footbridge.

35. As reported previously, construction works were affected by various factors, including delayed handover of critical works areas under the Wan Chai Development Phase II (“WDII”) project in Wan Chai North, the need to allow flexibility for the convention facilities above Exhibition Centre Station, as well as the uncompleted construction works of a section of diaphragm wall cofferdam entrusted to WDII. These entailed additional construction cost and have generated a delay of nine months in the completion of Exhibition Centre Station. In addition, the works were affected by the discovery of wartime bombs as well as the subsequent temporary suspension and controlled measures of relevant excavation works. Delay recovery measures are being adopted at Exhibition Centre Station works sites, including the employment of additional resources and extended working hours within the allowable period. With mitigation measures, some of the delay can be recovered. The effectiveness of the delay recovery measures will need to be closely monitored.

36. The 900-metre overrun tunnel extending southwards from the SCL platform at Admiralty Station for future train regulation is structurally complete. Building services as well as track laying works are on-going. Reinstatement works are in progress at Hong Kong Park works site and the adjacent Supreme Court Road. Following completion of structural work for the Hong Kong Park Ventilation Building in June 2019, architectural finishes and building services installation works are being carried out.

37. The architectural finishes and building services installation works for the extended Admiralty Station are in progress while E&M and track laying works have also commenced. Construction of a new corridor at Admiralty Station concourse near Exit F has been completed and opened for passenger’s use in late June 2019, providing a more convenient access between concourse, ground level on Rodney Street and Harcourt Garden and the platforms. The original temporary corridor is closed and is being demolished to facilitate construction of the extended station concourse.

PHASED OPENING OF TML

38. In coming up with the current phased opening arrangements for TML, the Corporation explored different options with the objective of providing a meaningful train service to as many stations as practicable. The recommended option to open TML up to Kai Tak Station strikes a balance between various factors including operational arrangements, customer service and the consequential impact on the full opening of TML. The Corporation believes the phased opening up to Kai Tak Station is a practical and feasible option which could provide meaningful train service. This is agreed by Government.

39. Only Tai Wai and Hung Hom stations were built with provision for trains to turnaround. The other stations, including To Kwa Wan and Sung Wong Toi, are not capable of functioning as temporary terminal stations. As to the option of opening TML Phase 1 up to Ho Man Tin Station, since the signalling system of Ho Man Tin Station is controlled from Hung Hom Station Extension and adjacent structures, this zone is not yet ready for operation due to the need to implement the suitable measures.

40. Upon commissioning of TML Phase 1, passengers travelling on the Ma On Shan Line (“MOL”) will be able to travel directly to Kai Tak Station in East Kowloon district via Hin Keng and Diamond Hill stations with a train frequency of 3.5 minutes interval at morning peak hours. The expanded Diamond Hill Station will become a new interchange between the TML and the Kwun Tong Line, allowing passengers from New Territories North and East to interchange for rail services to the East Kowloon and Island East. The current congestion on the critical link of Tai Wai to Kowloon Tong section on EAL during morning peak can be relieved and the journey time¹ between Tai Wai and Diamond Hill stations can also be significantly reduced from 17 minutes to about 8 minutes.

41. As previously mentioned, the full opening of the TML will hinge on the implementation of the suitable measures at Hung Hom Station Extension and adjacent structures. These are subject to finalisation and obtaining Government’s approval. We expect the TML can be fully opened about 12 month after completion of the suitable measures.

¹ The journey time is an estimate of the time it should take to travel from the originating to the destination station (platform to platform) if the shortest route is taken and may take into account waiting time, in-train and interchange times as well as other information and assumptions.

QUALITY AND SAFETY OF SCL CONSTRUCTION WORKS

Verification and assurance of Hung Hom Station Extension

Holistic assessment strategy for Hung Hom Station Extension

42. Safety and quality of railway projects have always been the top priorities of the Corporation and safety to the public and site workers had at no time been compromised. After allegations of poor workmanship, in order to provide assurance to the public's concerns on the structural safety of the Hung Hom Station Extension, the Corporation engaged external consultants to develop a set of measures to assess and verify the integrity of the station. In December 2018, Government accepted the Corporation's holistic proposal with a three-stage approach to verify the as-constructed conditions and the workmanship quality of the diaphragm walls, the EWL and NSL slabs to diaphragm wall connection.

43. In Stage One, a review of available construction records was conducted. The Stage Two on site physical investigations included the opening up and testing of coupler connections with the application of Phased Array Ultrasonic Testing ("PAUT"). Stage Two verification works were completed in April 2019.

44. All information obtained in the first two stages was taken into account in the Stage Three structural assessment.

45. The Final Report on Holistic Assessment Strategy for the Hung Hom Station Extension has been accepted by Government and its Expert Advisor Team. It was submitted to Government in July 2019. The report concludes that the station structure is safe for the purpose of the ongoing construction activities, but suitable measures will be implemented to address workmanship issues and achieve code compliance and requirements under the contract. In addition, a suitable long-term monitoring scheme will be considered to monitor the ongoing structural integrity of the station.

Verification study on as-constructed conditions of adjacent structures of Hung Hom Station

46. As previously reported, the Corporation received from the Contractor, Leighton Contractors (Asia) Limited ("Leighton"), the as-constructed drawings on construction works connecting to the Hung Hom

Station, namely the North Approach Tunnels (“NAT”) and South Approach Tunnels (“SAT”). The Corporation issued Non-conformance Reports (“NCRs”) to Leighton in respect of the unavailable Request for Inspection and Survey Check (“RISC”) forms relating to NAT and SAT in April 2018. In late 2018, a similar issue was identified at Hung Hom Stabling Sidings (“HHS”).

47. In view of the information gaps identified in the construction records, the Corporation has carried out a verification study on as-constructed conditions of the NAT, SAT and HHS. The purposes of the study are to verify the construction records and ascertain the as-constructed conditions, and to conduct a structural review and devise schematic remedial works and long-term monitoring scheme, if necessary. The Final Report was submitted to Government in July 2019. The conclusion, which has been accepted by Government, is that the structures are safe for the purpose of the ongoing construction activities, but suitable measures will be implemented to address workmanship issues at certain locations in SAT and HHS to achieve code compliance and requirements under the contract. Subsequently, a long-term monitoring scheme will be considered to monitor the ongoing structural integrity of the structures.

Way forward

48. The suitable measures at the platform slabs and tunnel structures under Hung Hom Station Extension as well as SAT and HHS are now being designed in detail and submitted to Government for acceptance. This is expected to take four to six months. Subsequent to obtaining the necessary acceptance from Government, the suitable measures are expected to take nine to twelve months to complete on site.

Verification of other new TML stations

49. The Corporation has also completed an audit of key documentation for the other five TML new stations, namely Hin Keng, Diamond Hill, Kai Tak, Sung Wong Toi and To Kwa Wan. Audit results show that over 90% of the structure related RISC forms are available, while further supplementary evidence, such as photographs and site diaries, has been identified to demonstrate the completed works on site were adequately supervised.

CoI into the Construction Works at and near the Hung Hom Station Extension

50. The Corporation welcomes the interim report of the CoI which has made a clear determination that the diaphragm wall and platform slab construction works are safe. The CoI is also satisfied that there was no extensive or systematic cutting of the threaded ends of rebars.

51. The Corporation also welcomes and recognises the other findings and recommendations in the interim report, especially those concerning the Corporation's project management system. Many of these recommendations are in line with the findings of the review conducted by the Capital Works Committee ("CWC") under the MTR's Board, aided by an external consultant.

52. The Corporation will continue to cooperate with the CoI in its ongoing investigation.

Review conducted by CWC

53. As mentioned in Paragraph 51, the CWC has reviewed the Corporation's project management system. The external consultant appointed by the CWC to undertake the review developed a number of recommendations. While some of the recommendations are strategic in nature having long term implications on the organisation set-up and contract strategy for future projects, the Corporation has taken prompt actions for those short-to-medium term recommendations that can fulfil the continuing need of SCL in quality management. A number of measures have already been implemented. These include the strengthening of project management and quality management systems, revamping the organisation quality, and using technology to assist staff and contractors in keeping records and tracking non-conformances at construction sites.

Measures taken to address the settlement issue adjacent to SCL stations

54. The Government announced in September 2018 a notification mechanism on the monitoring of the structures and public facilities in the vicinity of the SCL works, with a view to providing timely information to the public when the monitoring data in relation to relevant structures and public facilities have reached or exceeded the pre-set trigger levels for temporary suspension of works. The Corporation is working closely with the Government in accordance with the mechanism.

55. **Enclosure III** shows the most recent information on the monitoring levels, the data at monitoring points where the pre-set trigger levels were reached or exceeded, and where pre-set trigger levels for temporary suspension of works have been updated.

56. Since the resumption of excavation works for Exhibition Centre Station in September 2018, no monitoring readings have reached or exceeded the pre-set trigger levels. Bulk excavation works have been completed in June 2019. Monitoring will continue for some time until the settlement readings have become stable after completion of the underground structure and backfilling works, providing assurance as to the on-going safety of nearby buildings, structures and facilities.

57. For To Kwa Wan Station, Registered Structural Engineers were deployed to assess the safety conditions of the buildings which were reported to be affected by the settlement near the station works sites. The concerned buildings are confirmed to be safe.

58. The Corporation has funded a community care programme since January 2019 to provide financial support to the owners of the residential buildings near the construction sites of To Kwa Wan Station to carry out the repair works. A professional building surveyor consultant has been appointed to administer and manage the execution of the programme.

TESTING OF NEW TRAINS AND OTHER RAILWAY SYSTEMS

59. To facilitate the future operation of the extension of EAL to Hong Kong Island, 37 sets of new 9-car trains are being delivered to Hong Kong in batches. Stringent testing and commissioning for the delivered new trains are underway. Dynamic testing has been in progress at the existing EAL during non-service hours at night since December 2015. Reliability testing of new trains has also commenced. 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.

60. All 17 sets of new trains for the TML have been delivered to Hong Kong in November 2018. Dynamic testing and reliability testing of new trains was completed in January 2019.

61. Apart from the procurement of new trains, some of the existing train cars on MOL, West Rail Line (“WRL”) and EAL will undergo modification and reconfiguration to form the 8-car train fleet for the TML together with the newly procured train cars. All 15 4-car MOL trains have been upgraded to 8-car trains, doubling the overall carrying capacity on MOL. Conversion of 7-car WRL trains to 8-car trains was completed in May 2018.

62. Since the commencement of EAL signalling replacement work in 2015, the installation of the equipment in trains and at trackside along the EAL has been substantially completed. Dynamic testing of the new signalling system commenced by sections since October 2016 and was extended to the full line of EAL in March 2018. Reliability testing is now being carried out along the EAL. In the final stage of the reliability testing, normal train operation patterns including that of peak period will be simulated at some nights to ensure a smooth operation of the new signalling system and trains in the future.

63. To avoid impact on day time train service, the signalling tests are 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 be in place as appropriate 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.

64. After the incident on the Tsuen Wan Line (“TWL”) on 18 March 2019, all train tests for all new signalling systems, including the tests on EAL and TML were suspended immediately as a prudent measure, despite the fact that the signalling systems for EAL and TML are different to the new signalling system of TWL. After a detailed review by the contractors and an Independent Safety Assessor, the testing plans are confirmed to be safe and meeting international safety standards. Therefore the dynamic train tests of the EAL and TML resumed in late May and mid-June respectively. In view of the incident that occurred near Hung Hom Station on the EAL on 17 September, adjustment was made on the testing schedule and track section for the testing of EAL new signalling system accordingly.

65. To facilitate the future operation of the TML, integrated testing for various railway systems such as the communication system, main control system and signalling system are underway at various sections of the

TML, including the existing WRL and MOL. A series of tests is also in full swing to prepare for the phased opening of TML.

OTHER IMPROVEMENT WORKS FOR THE OPERATING RAILWAY FACILITIES

66. On the MOL, the retrofitting works of a total of 720 pairs of Automatic Platform Gate (“APG”) at all 9 stations is complete.

67. Retrofitting of APGs will also be carried out for the EAL. Before the commencement of this retrofitting works, platforms have to be strengthened and equipment rooms for the relevant signalling system and facilities have to be constructed. These preparatory works are substantially complete. Subsequent works including floor tiling and defect rectification are underway. Because 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 9-car trains.

68. 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 9-car trains will be progressively launched upon the commissioning of TML Phase 1, which will divert some of the passenger traffic off the EAL. To facilitate the future operation of new trains and APGs, the existing signalling system of the EAL is being upgraded and commissioned.

COSTS

Cost and expenditure

69. Since mid-2012, 28 major civil and 30 major electrical & mechanical (“E&M”) contracts², together with other minor contracts, have been awarded with a total sum of \$57.752 billion. The contract sums for civil works and E&M works are about \$43.850 billion and \$13.902 billion respectively (Please refer to **Enclosure I**).

² 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.

70. 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

71. 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.

72. 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.

73. To enhance the control of expenditure, the Corporation has its Project Control Group (“PCG”) as 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.

74. 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”)

75. In December 2017, the Corporation announced that a detailed review of the estimated CTC for the main construction works of SCL has completed. This increased the estimate of the entrustment cost of the main works by \$16.5 billion from \$70.8 billion to \$87.3 billion. Since submission of this latest estimate to the Government, the Corporation has been liaising with the Government to facilitate their review and

verification process. Taking account of various factors and further delaying events since the previous cost validation in December 2017, the Corporation intends to complete a further review and revalidation of the CTC within 2019.

76. To facilitate the phased opening of the TML, the Corporation has agreed to fund, on an interim basis, the costs associated with the verification and assurance exercises and implementation of the suitable measures at the Hung Hom Station Extension and adjacent structures, as well as the costs for the preparation and implementation of TML phased opening, estimated to be around \$2 billion in total. The Corporation will continue discussions with Government with a view to reaching an overall settlement in relation to the Hung Hom related incidents, phased opening, related costs as well as the overall CTC.

STAKEHOLDER COMMUNICATION AND ENGAGEMENT

77. Most of the SCL works sites are in urban areas and close to local communities. We attach great importance to maintain 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. Dedicated MTR and Contractors' Hotlines are also available for handling enquiries and complaints in relating to the project.

EMPLOYMENT OPPORTUNITIES

78. About 2,600 construction workers and technical / professional staff members are employed for the SCL project as at 30 June 2019, which in general could meet the labour requirement. This is lower than the number employed when the project was in its construction peak. Moreover, 764 trainees have been recruited and provided with trainings and internship programmes by the contractors of the SCL project and the Construction Industry Council through the Corporation's "SCL Contractors

Cooperative Training Scheme”. 520 of the trainees have completed the trade test and continue their careers in the field.

CONCLUSION

79. Members are invited to note the above information.

MTR Corporation Limited
October 2019

Expenditure report as at 30 June 2019

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 | 43,849.9 | 44,207.8 | 2,050.5 |
| E&M works | 13,901.8 | 6,720.1 | 1,337.5 |
| Total | 57,751.7 | 50,927.9 | 3,388.0 |

* The estimated amount of unresolved claim: Amount claimed (\$4,562.0 million) – Interim award (\$1,174.0 million) = \$3,388.0 million (See Table 2)

Table 2 – Situation of substantiated claims

| | Claims resolved | | | Claims unresolved | | |
|--------------|-----------------|----------------------------------|--------------------------------|-------------------|--------------------------------|-------------------------------|
| | Number | Amount claimed (\$ million) | Amount awarded (\$ million) | Number | Amount claimed (\$ million) | Interim award (\$ million) |
| Civil works | 302 | 3,039.2 | 1,780.8 | 551 | 2,832.6 | 782.1 |
| E&M works | 9* | 0 | 0 | 150 | 1,729.4 | 391.9 |
| Total | 311 | 3,039.2 | 1,780.8 | 701 | 4,562.0 | 1,174.0 |

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

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

2. As at 30 June 2019, the Corporation received 1,012 substantiated claims and the amount claimed in total was about \$7,601.2 million, representing 13.2% 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 2019, 311 cases were resolved and about \$1,780.8 million was awarded, representing about 3.08% 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 \$1,174.0 million was made for some cases.

Overall works progress of the SCL as at 30 June 2019

Overall works completed : 90%

(A) Cumulative progress of 28⁽¹⁾ 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 | 100% |
| 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 | 99% |
| 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 | 56% |
| 1121 | EAL Cross Harbour Tunnels | 99% |
| 1122 | Admiralty South Overrun Tunnel | 98% |
| 1123 | Exhibition Centre Station and Western Approach Tunnel | 73% |
| 1124 | Admiralty SCL Related Works | 69% |

| | | |
|-------|---|------|
| 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 | 84% |
| 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 28 awarded major civil contracts as mentioned in Paragraph 69 of this report include Contracts 11230 and 11241. Contract 11230 is a tenancy agreement for the Joint Site Office for Contracts 1123 and 1128, and it is part of the project cost for Contracts 1123 and 1128. Contractor 11241 is the archaeological survey for connection to Pak Tai Street. As these two contracts involve no civil construction works, they are 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 | 100% |
| 1141B | New Rolling Stock for SCL Phase 2 | 66% |
| 1151 | Rolling Stock Modification and New Train Cars for SCL Phase 1 | 100% |
| 1152 | Signalling System for SCL Phase 1 & Signalling System Modification for MOL and WRL | 99% |
| 1152B | Signalling System for SCL Phase 2 | 83% |
| 1153 | Tunnel ECS for SCL Phase 1 | 100% |
| 1153B | Tunnel ECS for SCL Phase 2 | 49% |
| 1154 | Platform Screen Doors for SCL Phase 1 & APG Retrofit for MOL | 100% |
| 1154B | Platform Screen Doors for SCL Phase 2 & APG Retrofit for EAL | 45% |
| 1155 | Power Supply System and Trackside Auxiliaries for SCL Phase 1 | 100% |
| 1155B | Power Supply System and Trackside Auxiliaries for SCL Phase 2 | 65% |
| 1159 | Lifts for SCL Phase 1 | 98% |
| 1162 | TETRA System for SCL Phases 1 & 2 | 98% |
| 1162B | Radio Distribution Network System for SCL Phases 1 & 2 | 78% |
| 1163 | AFC System and SAM System for SCL Phases 1 & 2 | 77% |
| 1164 | Building Services for Diamond Hill Station | 100% |
| 1164B | Building Services for SCL Hong Kong Island Section | 24% |
| 1165 | Building Services for Hin Keng Station, Ma Chai Hang Ventilation Building and Fung Tak Emergency Access | 100% |
| 1166 | Main Control System for SCL Phase 1 | 100% |
| 1166B | Main Control System for SCL Phase 2 | 71% |
| 1169 | Communications System for SCL Phase 1 | 100% |
| 1169B | Communications System for SCL Phase 2 | 35% |

| | | |
|-------|--|------|
| 1172 | Escalators for SCL Phase 1 | 100% |
| 1172B | Lift and Escalators for SCL Phase 2 | 29% |
| 1173 | Building Services for Hung Hom Station and Hung Hom Stabling Sidings | 97% |
| 1175 | Building Services for Kai Tak Station | 100% |
| 1176 | Building Services for Sung Wong Toi Station and Ancillary Building | 100% |
| 1177 | Building Services for To Kwa Wan Station and Ancillary Building | 100% |
| 1183 | EAL Signalling System Modification | 100% |
| 1191 | Floodgate System for SCL Phase 2 | 63% |

The Latest Updated Pre-set Trigger Levels

| | Monitoring Point | Type | Settlement Readings (mm) | Latest pre-set trigger levels (mm) |
|---|-----------------------|-------------------|--------------------------|------------------------------------|
| 1. Exhibition Centre Station and Western Approach Tunnels (Readings as at June 2019) | | | | |
| 1 | 1123-AB-GSM(USM)-48-A | Pavement | -19.1 | -35 |
| 2 | 1123-AE-GSM-56 | Pavement | -12.3 | -30 |
| 3 | 1123-AE-GSM(GP)-18 | Pavement | -13.7 | -30 |
| 2. Tunnels between Exhibition Centre Station West and Admiralty (Readings as at June 2019) | | | | |
| 1 | FPP-BSM-012A | Highway Structure | -1.5 | -13 |
| 2 | FPP-BSM-013 | Highway Structure | 1.3 | -10 |
| 3 | FPP-BSM-014 | Highway Structure | -1.5 | -14 |
| 4 | FPP-BSM-015 | Highway Structure | -2.5 | -13 |
| 5 | FPP-BSM-016 | Highway Structure | -2.4 | -13 |
| 6 | FPP-BSM-017 | Highway Structure | -2.0 | -13 |
| 7 | FPP-BSM-034 | Highway Structure | 1.3 | -13 |
| 8 | FPP-BSM-035 | Highway Structure | 0.5 | -13 |
| 9 | FPP-BSM-036 | Highway Structure | 1.5 | -14 |

Remarks: The number of active monitoring points changed as the construction progressed. Monitoring of some settlement points may have stopped due to a variety of reasons such as after the structure has already been demolished or when the excavation works-front has already moved far away.

宋皇臺 站工地考古文物保育方案

附件三 Annex 3

Conservation Options for Archaeological Features Discovered at Sung Wong Toi Station



行人隧道 C 的走線 Alignment of Adit C



Existing pedestrian crossing
原有行人過路處