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24 February 2017

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Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road
Central, Hong Kong
(Attn: Ms Sophie LAU)

Dear Ms LAU,

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

Meeting on 9 December 2016

Supplementary Information

At the meeting of Subcommittee on Matters Relating to Railways on 9 December 2016, some Members requested the Government/MTRCL to provide supplementary information regarding progress update of the construction works of the Shatin to Central Link. The supplementary information is provided at **enclosure** for the Members' perusal.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'K. Y. Kam'.

(K. Y. KAM)
for Secretary for Transport and Housing

C.C.

Highways Department (Attn: Mr. Jonathan LEUNG) (Fax: 2187 2971)
MTR Corporation Limited (Attn: Ms. Prudence CHAN) (Fax: 2795 9991)

Encl.

Updated progress of the Shatin to Central Link Project

Supplementary Information

The Shatin to Central Link (“SCL”) project is implemented under the “concession approach”. The Government is responsible for funding the construction and will have the ownership of the railway. The MTR Corporation Limited (“MTRCL”) is entrusted with the design and construction of the railway. Upon completion of the railway, the Government may vest the SCL in or lease it to the Kowloon-Canton Railway Corporation (“KCRC”). The KCRC will in turn include the SCL into the service concession granted to the MTRCL and receive service concession payments. In 2012, the Government and the MTRCL entered into an agreement for entrusting the construction, testing and commissioning of the main works of the SCL to the latter. The MTRCL, as a trustee, has to provide management and monitoring service to the SCL project.

(a) Contingency measures during the replacement of signalling system on the East Rail Line

Under the SCL project, the existing signalling system of the East Rail Line (“EAL”) is being upgraded to facilitate the future operation of new trains and Automatic Platforms Gates (“APGs”). The upgrading works are being implemented progressively in phases while installation of equipment compatible with the new signalling system at trains and trackside are underway. Installation of equipment at the trackside along Fo Tan Station, Racecourse Station and University Station has been substantially completed. The installation works have fully commenced at the trackside along the EAL between Hung Hom Station and Lo Wu Station/ Lok Ma Chau Station. Testing of new signalling system with EAL trains have extended from track sections at Racecourse Station to University

Station during non-service hours in mid-December 2016. It will then proceed to the track sections at Fo Tan Station.

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

Since railway safety is always the top priority, MTRCL has appointed independent experts to offer advice to ensure that international safety standards are met. A comprehensive risk assessment of the upgrade of the signalling system is being conducted.

To minimise any occurrence that may have potential impact on customers, the following comprehensive test plan was developed before the commencement of testing of signalling system:

- In the initial stage, testing will be carried out on each and every piece of equipment;
- Testing will then be extended to cover an array of equipment;
- When testing is proven to be satisfactory, it will progressively extend to longer track sections and eventually to the whole railway line.

The possible risks and contingency measures as well as the notifying mechanism are also being carefully examined having regard to the existing contingency mechanism for handling railway service disruptions, for example in case a section of railway is disrupted,

service may either be maintained on a bidirectional-single-line basis or by introducing short loops, supplemented by shuttle buses travelling between the affected stations depending on the need. Crowd control measures like switching off some of the entry gates and escalators may be implemented in time of service disruption. In addition, MTRCL will disseminate train information to passengers through different channels as soon as possible, including broadcasts at stations and inside train compartments, LCD information panels at stations, web page and smartphone applications etc. In case of a railway incident, the 24-hour Emergency Transport Coordination Centre of the Transport Department (“TD”) will, in response to the situation, communicate and coordinate with the Corporation, other government departments and the public transport operators, with a view to implementing relevant public transport service arrangements, including enhancing franchised bus and Green Minibus services in the affected area where necessary to help divert passenger flow. With the advice of TD taken into account, the MTRCL has formulated a sound contingency plan to cope with the disruption to railway services.

While every precaution has been taken to avoid impacting the operating railway, teething problems during the replacement works may occur with inconvenience to passengers. MTRCL is closely monitoring the situation to ensure that any hiccups will be tackled in a timely manner and safety will be upheld at all times.

(b) Milestone payment plan and critical path analysis for SCL project

Milestone Payment Plan

Milestone payment plan is an approach which is widely introduced in major large-scale infrastructure projects by MTRCL. For each of the individual contract under the SCL project, the corresponding milestone items, milestone schedules and percentage of payments for each milestone item are formulated. By adopting the approach, the contractors of the SCL project will receive commensurate payments upon the achievement of each milestone. The approach is adopted

for disbursement of funds according to works progress for effective governance and cost control of the project.

As at 31 December 2016, 27 major civil and 29 major Electrical & Mechanical (E&M) contracts ¹ are awarded under the SCL Entrustment Agreement. The key milestones, payment schedules and percentages vary for each individual contract. The details of the milestone payment specified in the contract are based on the original programme of the project. For the additional expenditure including the change of design and claims arising from archaeological finds at the works site of To Kwa Wan Station; and the late handover in construction sites in Wan Chai, detailed discussions with the contractors are being carried out. Due to the commercially sensitive nature of the relevant information and its possible impact on future claims and tendering of remaining engineering contracts, MTRCL is unable to disclose all the details. However, the culminated progress of the major civil and E&M contracts has been listed out in the quarterly progress updates submitted to the Subcommittee regularly, in which the culminated progress of each individual contract is measured against the assessment of physical progress for key activities of the project. The interim payments are certified with commensurate ratio specified in the contract, in accordance with the payment schedules in the contract and the achievement of the milestone schedules of the critical activities of the project. The situation of expenditure, as well as the culminated progress of the awarded major civil and E&M contracts has already been listed out in the regular quarterly progress report submitted to the Subcommittee.

Critical Path Analysis

Critical Path Analysis is an approach for monitoring the targeted programme for critical components of the works under the SCL project, which form a critical path of the project. Where there is a progress delay for respective contracts, mitigation measures and delay recovery measures will be adopted to catch up with the delays. During the process, in ensuring the work safety, the overall

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.

progress of the project is a main consideration. The existence of progress delays under individual contracts does not necessarily imply that completion of the project would be delayed. Under the supervision of the Highways Department (HyD), MTRCL is keeping in view of the critical path of the SCL project to avoid affecting the commencement of subsequent critical work activities, and by adopting mitigation measures to move the delayed activities away from the critical path.

The impact of the critical works or works activities on the overall progress of the SCL, as well as the effectiveness of the delay recovery measures, is also reported in detail in the regular quarterly progress report submitted to the Subcommittee. As stated in the report submitted on 6 February, the archaeological works at To Kwa Wan Station have affected the construction of To Kwa Wan Station, and the commissioning date of the “Tai Wai to Hung Hom Section” is deferred to end 2019. With the efforts of the construction team, the delay recovery measures implemented at the “Tai Wai to Hung Hom Section” is picking up the pace progressively. Hence, the target commissioning date of this section could be advanced to about mid-2019.

(c) Strengthening Highways Department’s monitoring on MTRCL

The supernumerary post Chief Engineer/Railway Development 1-3 in the Railway Development Office of the Highways Department (CE/RD1-3) is responsible for overseeing the construction of the East West Corridor (EWC) of the SCL project² and the Kwun Tong Line Extension project (KTE)³ undertaken by MTRCL. The post originally lapsed on 1 April 2016. The Finance Committee approved in May 2016 to retain the supernumerary post until 31 March 2022. Hence, to ensure the timely completion of the EWC of SCL, CE/RD1-3 continues to be responsible for the professional, technical, contractual and interface issues of the construction works, and

² The SCL project consists of EWC and North South Corridor (NSC). The dedicated division responsible for NSC is led by Chief Engineer/Railway Development 1-2.

³ The Kwun Tong Line service was extended to Ho Man Tin Station and Whampoa Station on 23 October 2016.

overseeing the work of MTRCL in implementing the projects and carrying out financial control in a timely manner. His major duties and responsibilities are to –

1. formulate strategies for delivering the EWC of SCL, and completing KTE and the related Essential Public Infrastructure Works in October 2016 (the Project);
2. lead and direct subordinates in the planning, design and implementation of the Project, including public consultation with the Legislative Council and District Councils and reporting progress to them;
3. provide technical support and advice to the Transport and Housing Bureau to permit policy steers and prepare policy papers;
4. administer the Public Works Programme items related to the Project;
5. ensure the implementation of the EWC of SCL and KTE in accordance with the entrustment agreements and the project agreement signed between the Government and the MTRCL, and monitor MTRCL on the adoption of appropriate strategies, procedures and programme on the engineering and financial aspects, including settlement of claims;
6. complete all the works under the statutory process for preparing gazettes under the relevant ordinances;
7. monitor a professional sub-team for vetting the building submissions in respect of the SCL and Hong Kong section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link projects (XRL) and conducting site inspections comparable to the vetting and site inspection work carried out by the Buildings Department for general building submissions; and
8. coordinate among other government departments/bureaux and resolve interfacing matters arising from the Project with other development projects to ensure the smooth progress of the Project.

Since SCL and the XRL project are both implemented under the Concession Approach, some of the recommendations of the Independent Expert Panel (IEP) for the XRL project are also

applicable to SCL. By making reference to the views of the IEP, HyD arranged and implemented the following measures to enhance the monitoring of the progress and financial status of SCL project since mid-2014 -

- (i) an increase in the number of staff in the SCL project team under the Railway Development Office of the HyD to enhance the monitoring role;
- (ii) submission of monthly progress reports to the Transport and Housing Bureau for the SCL project with the adoption of “traffic light” system to facilitate the THB’s understanding of current project status;
- (iii) liaising more closely with the MTRCL’s project team and requesting the MTRCL to provide more detailed information;
- (iv) arranging the monitoring & verification (M&V) consultant appointed by the HyD to attend the Project Supervision Committee meetings; and
- (v) establishment of a working group amongst the HyD, the M&V consultant and the MTRCL with members from the respective specialised teams to review the programme and progress of the SCL project in detail on a regular basis with all aspects and levels of works covered.

CE/RD1-3 will continue carrying out his duties with respect to the above monitoring tasks.