

**For information  
on 23 August 2018**

**Legislative Council Panel on Transport  
Operating Arrangements for the  
Hong Kong Section of the Guangzhou-Shenzhen-  
Hong Kong Express Rail Link**

**Purpose**

The Hong Kong Section of the Guangzhou-Shenzhen-Hong Kong Express Rail Link (“XRL”) will be commissioned on 23 September 2018. This paper briefs Members on the operating arrangements for the XRL.

**Background**

2. The XRL is a 26-kilometre (“km”) long underground rail corridor running from West Kowloon to Shenzhen, where it connects to the Mainland section of XRL. The XRL has been taken forward under the concession approach. The Government provides the funding under the Public Works Programme for constructing the XRL and owns the railway. The MTR Corporation Limited (“MTRCL”) is entrusted by the Government to undertake the design, construction, testing and commissioning of the XRL and is subject to monitoring of the Highways Department for implementation of the railway. Upon the completion of the project, the Government will vest the XRL in the Kowloon-Canton Railway Corporation (“KCRC”) which is wholly owned by the Government and then the KCRC will in turn grant the operation of the XRL to the MTRCL under a concession approach. Also, the Government will sign an amendment agreement to the Operating Agreement (“AOA”) with the MTRCL which contains the service standards of operating the XRL by the MTRCL. The Government and the KCRC have signed a Vesting Deed and a Deed of Assignment on 23 August 2018. On the same day, the Government and the MTRCL have signed the AOA, while the KCRC and the MTRCL have signed a supplemental agreement to the service concession agreement (“SSCA”).

**Pre-commissioning Preparations**

3. To ensure smooth operation, the MTRCL commenced trial operations from 1 April 2018. The simulation of actual operating environment for further testing train operations and station-related systems

ensures safety and reliability of the systems and provides training for staff to familiarise themselves with the operation of various systems and operating environment. The trial operations work was completed on 16 August 2018.

## **Train services**

4. The XRL trains will run between the West Kowloon Station (“WKS”) and 44 Mainland destinations, including Futian, Shenzhen North, Humen, Guangzhou South, Beijing, Shanghai, Kunming, Guilin, Guiyang, Shijiazhuang, Zhengzhou, Wuhan, Changsha, Hangzhou, Nanchang, Fuzhou, Xiamen and Shantou stations that were announced earlier. Since the XRL will be a brand new cross-boundary transport mode in Hong Kong, upon its commissioning, the train schedule for weekdays, weekends<sup>1</sup> and peak periods<sup>2</sup> for short-haul trains would be different, having regard to the expected build-up process for patronage during the early stage of commissioning and time-varying passenger demand. During the early stage of commissioning of the XRL, there will be 114 pairs of short-haul trains daily during peak periods. As for weekdays and weekends, there will be 70 and 82 train pairs daily respectively. Subject to the market demand, the train schedule can be suitably adjusted based on the patronage. There will also be 13 pairs of direct long-haul trains<sup>3</sup> daily. The short-haul trains, to be operated by both the Hong Kong and Mainland operators, will run directly between the WKS and six short-haul destinations, namely Futian, Shenzhen North, Guangmingchen, Humen, Qingsheng and Guangzhou South stations. Upon arrival at these short-haul destinations, passengers may then transfer to Qianhai and other cities in the Guangdong-Hong Kong-Macao Greater Bay Area by taking high-speed rail or local transport mode (e.g. Shenzhen Metro). The long-haul trains will be operated by the Mainland operator only. The train schedule for short-haul and long-haul trains upon the commissioning of the XRL are set out in Table 1 and Table 2.

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<sup>1</sup> Weekends include Fridays, Saturdays, and Sundays for train scheduling purpose.

<sup>2</sup> “Peak periods” include the general holidays of Hong Kong and public holidays in the Mainland, summer holidays during July and August every year, and the Spring Festival travel seasons in the Mainland, which account for around 130 days in a year (about one-third of a year).

<sup>3</sup> Passengers will not have to change trains when travelling on direct trains to their destinations.

Table 1: Daily schedule for short-haul trains for the XRL

| Destinations (as terminus stations) | Mondays to Thursdays | Fridays to Sundays | Peak periods |
|-------------------------------------|----------------------|--------------------|--------------|
|                                     | Daily train pairs    |                    |              |
| Futian                              | 15                   | 27                 | 58           |
| Shenzhen North                      | 25                   | 25                 | 26           |
| Guangzhou South                     | 30                   | 30                 | 30           |
| <b>Total</b>                        | <b>70</b>            | <b>82</b>          | <b>114</b>   |

Note: Subject to the market demand, the train schedule can be suitably adjusted based on the actual patronage.

Table 2: Daily schedule for long-haul trains for the XRL

| Destinations (as terminus stations)  | Daily train pairs (for weekdays, weekends and peak periods) |
|--|---|
| <b>Destinations along the Beijing-Guangzhou Passenger Line, the Shanghai-Kunming Passenger Line and the Guizhou-Guangzhou Passenger Line</b> |   |
| Beijing  | 1   |
| Shanghai   | 1   |
| Changsha   | 1   |
| Kunming  | 1   |
| <b>Destinations along the Hangzhou-Fuzhou-Shenzhen Passenger Line</b>  |   |
| Shantou  | 5   |
| Xiamen   | 3   |
| Fuzhou   | 1   |
| <b>Total</b>   | <b>13</b>   |

Note: The number of trains serving each short-haul (for peak periods) and long-haul destinations (for weekdays, weekends and peak periods) (including as terminus stations and intermediate stops) are at Annex 1.

5. The expected shortest travelling time from the WKS to each short-haul and some long-haul destinations is set out in Table 3.

Table 3: Shortest travelling time between the WKS and various short-haul and long-haul destinations

| <b>Destinations</b>  | <b>Expected shortest travelling time of train departing from the WKS</b> |
|--|--|
| <b>Short-haul trains</b>   |  |
| Futian   | 14 minutes   |
| Shenzhen North   | 19 minutes   |
| Guangmingchen  | 31 minutes   |
| Humen  | 36 minutes   |
| Qingsheng  | 56 minutes   |
| Guangzhou South  | 47 minutes <sup>4</sup>  |
| <b>Long-haul trains</b>  |  |
| <b>Destinations along the Beijing-Guangzhou Passenger Line, the Shanghai-Kunming Passenger Line and the Guizhou-Guangzhou Passenger Line</b> |  |
| Beijing  | 8 hours 56 minutes   |
| Shanghai   | 8 hours 17 minutes   |
| Shijiazhuang   | 7 hours 45 minutes   |
| Kunming  | 7 hours 38 minutes   |
| Hangzhou   | 7 hours 25 minutes   |
| Zhengzhou  | 6 hours 20 minutes   |
| Guiyang  | 5 hours 31 minutes   |
| Nanchang   | 4 hours 50 minutes   |
| Wuhan  | 4 hours 33 minutes   |
| Guilin   | 3 hours 19 minutes   |
| Changsha   | 3 hours 12 minutes   |
| <b>Destinations along the Hangzhou-Fuzhou-Shenzhen Passenger Line</b>  |  |
| Fuzhou   | 5 hours 40 minutes   |
| Xiamen   | 4 hours  |
| Shantou  | 2 hours 41 minutes   |

6. Based on the transport model adopted in 2009 and 2015 when we applied for funding from the Legislative Council for construction of the XRL, we have input the data in 2018 and considered the latest planning data and development of Hong Kong and the Mainland (including road and railway network data and public transport data) to forecast the daily patronage for the XRL, which is set out at Annex 2.

<sup>4</sup> This is the travelling time for the three daily direct train pairs to Guangzhou South without any intermediate stop. Depending on the number of intermediate stops, the traveling time for other trains to Guangzhou South ranges from 50 to 71 minutes.

7. The patronage forecast at **Annex 2** is derived by taking a snapshot of available demographic and socio-economic data such as growth in population and gross domestic product in Guangdong Province and Hong Kong. With the nine trains procured by the MTRCL and current train path allocation of the MTRCL and the Mainland operator, the daily maximum carrying capacities of the XRL trains<sup>5</sup> are around 136 000 for 2018 and 2021 and 225 300<sup>6</sup> for 2031 respectively. In other words, there is ample capacity for the XRL to accommodate more passengers. Having regard to the fast-growing economic and tourist developments around the short-haul destinations<sup>7</sup>, we are optimistic that the actual patronage of the XRL would exceed the above current patronage forecast.

### **Ticket purchase arrangements**

8. Passengers who travel on trains running to and from the WKS and the 44 destinations (viz. cross-boundary journey tickets) may purchase tickets in advance from early September. Passengers may, by producing their Hong Kong and Macao Residents Entry and Exit Permits (i.e. Home Return Permits), purchase tickets through the Hong Kong ticketing system, including Hong Kong ticketing website, Hong Kong ticketing hotline, ticket office at B1 Level of the WKS, ticket vending machines at the WKS, as well as local travel agencies. Passengers may then collect their tickets at the ticketing office or ticket vending machine at the WKS by producing their Home Return Permits and booking number. The ticketing office at the WKS, with 23 counters, will handle cross-boundary journey ticketing matters, including buying, collecting, changing and returning of tickets for passengers. There

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<sup>5</sup> There are 579 seats and two wheelchair spaces in the high-speed rail trains procured by the MTRCL. As the train types by the Mainland operator running along the XRL vary, there are approximately 530 seats on average in the high-speed rail trains by the Mainland operator. It is assumed that half of the trains are run by the MTRCL and the Mainland operator run the other half. Standees are not allowed in trains running along the XRL. The carrying capacity for long-haul trains is assumed to double that of the short-haul trains (i.e. 530 times 2). The maximum carrying capacity in 2031 is subject to the improvement in infrastructure (additional five tracks, which space has been reserved in the WKS, are required) in the WKS, additional four high-speed rail trains to be procured by the MTRCL and additional train path to be allocated by the China Railway Corporation ("CR").

<sup>6</sup> The maximum carry capacity for the XRL in 2031 is subject to more train path allocated for the XRL as the demand justifies, improvement of infrastructure in the WKS and increase in number of trains procured by the MTRCL.

<sup>7</sup> Futian station is located in the central business district of Shenzhen, which is home to the headquarters of a number of well-known companies such as Pingan Group as well as the Shenzhen Convention and Exhibition Centre. Shenzhen North station is the major interchanging station in Guangdong Province where passengers travel along the Beijing-Guangzhou Passenger Line can transfer to destinations along the Hangzhou-Fuzhou-Shenzhen Passenger Line (vice versa). Guangzhou South station is located in the centre of the Guangzhou-Foshan metropolitan area and is only about 15-minute ride to Chimelong Safari Park, a favourite tourist spot in Panyu.

will also be 39 ticket vending machines for passengers to purchase and collect their tickets. Passengers can pay by cash, credit card and Octopus. No service fee will be charged when buying or collecting cross-boundary journey tickets in Hong Kong. The Mainland high-speed rail operator will also sell cross-boundary journey tickets in the Mainland, and will do so through the existing sales channels and arrangements. As far as we understand, no service fee will be charged for purchases of train tickets at Mainland stations or through the Mainland website and ticketing hotline, and for the subsequent pick-up at ticketing counters or ticket vending machines at Mainland stations.

9. As for the XRL tickets for journeys that start and terminate at Mainland destinations, i.e. the Mainland journey tickets, the MTRCL has reserved five ticketing counters at the ticket office of the WKS to facilitate the provision of service by the agent authorised by the Mainland high-speed rail operator to sell Mainland journey tickets. This will allow passengers to purchase both cross-boundary journey tickets and Mainland journey tickets in one go in Hong Kong. Since the provision of such service involves certain costs, agents have been charging service fees<sup>8</sup>. Upon negotiation between the Government, the MTRCL and the CR, the service fees for purchasing the Mainland journey tickets at the five ticketing counters at the ticketing office of the WKS are HK\$10 (for tickets less than RMB200), HK\$20 (for tickets at or above RMB200 to less than RMB300) and HK\$30 (for tickets at or above RMB300) respectively. Meanwhile, the MTRCL and the CR will continue to explore other channels through which Hong Kong passengers may purchase Mainland journey tickets in a more convenient and direct manner. In this connection, the CR is in support of the idea of enhancing the Mainland ticketing system (i.e. [www.12306.cn](http://www.12306.cn)) to facilitate online purchase of Mainland journey tickets by Hong Kong passengers<sup>9</sup> and is working to overcome the policy and technical challenges. The above discounts on service fee at the WKS will be offered until such time when these long-term solutions are available.

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<sup>8</sup> According to the plan of the Mainland operator, passengers who purchase the Mainland journey tickets at the five ticketing counters at the ticketing office of the WKS will have to pay HK\$40 per ticket if the fare level below Renminbi (“RMB”)100; for purchasing tickets of normal trains with a fare level at RMB 100 or above, the passenger will have to pay a service fee of HK\$80 per ticket; and for purchasing tickets of sleeper trains with a fare level at RMB 100 or above, the passenger will have to pay a service fee of HK\$90 per ticket.

<sup>9</sup> The Mainland ticketing system allows the registration of an account for online ticket purchase only if the user can provide a Mainland registered mobile number. The requirement has made it difficult for Hong Kong passengers to purchase tickets online through the Mainland ticketing system.

## Fare levels

10. Both the Mainland and Hong Kong sides agreed that, as a matter of principle, the fares of the XRL between the WKS and various short-haul destinations should suitably reflect the greater convenience and shorter travelling time of the new cross-boundary high-speed train services, while providing maximum social and economic benefits to the community at large and without undermining the competitiveness of the XRL. Renminbi (“RMB”) will be used as the currency for fare setting and clearing payments between the Mainland and Hong Kong operators<sup>10</sup>. On the basis of the said principle as well as factors such as economic growth and population projections, cross-boundary travelling pattern and market demand, the published fares<sup>11</sup> for various short-haul destinations are set out in Table 4<sup>12</sup>. In actual operation, various promotional and concession XRL fares may be provided during non-peak periods or low seasons for tourists having regard to market demand so as to enable more passenger groups to experience the XRL services.

Table 4: XRL published fares for Second Class tickets for short-haul destinations

| <b>Destinations</b> | <b>XRL Published Fares (RMB)</b> | <b>XRL Fares in HK\$ converted from XRL Fares in RMB<sup>13</sup> (approximate)</b> |
|---------------------|----------------------------------|---|
| Futian              | 68                               | 78  |
| Shenzhen North      | 75                               | 86  |

<sup>10</sup> The MTRCL plans to adjust the fares of XRL in Hong Kong dollars on a monthly basis for tickets sold through the Hong Kong ticketing system, including Hong Kong ticketing website, Hong Kong ticketing hotline, ticket office and ticket vending machine at the WKS, as well as local travel agencies.

<sup>11</sup> According to the current operating practice of high-speed train services in the Mainland, the Mainland railway operator will announce the “published fares” and “implemented fares” of the high-speed train routes. The “published fares” refer to the maximum fare that can be collected for a particular route. Nevertheless, generally speaking, the actual fares of the high-speed train services in the Mainland are market-oriented. The Mainland railway operator will take into account time-varying patronage situation and demand for seats of different classes when setting fare levels that are acceptable by the passengers (i.e. market pricing). Certain discounts will be offered to the “published fares” and the discounted fares are referred to as the “implemented fares”. Passengers will pay the “implemented fares” when they purchase the tickets.

<sup>12</sup> The published fare levels for the six short-haul stations in Table 4 refer to those for Second Class tickets. For the nine XRL trains purchased and to be run by the MTRCL, around 90% of the seats are Second Class. For the fare of high-speed trains in the Mainland, the approximate fare levels for First Class tickets are around 1.5 to 1.6 times of Second Class tickets. For the XRL trains run by the Mainland side, there are Premium Class and Business Class seats, the fare levels of which are around 1.7 to 1.8 times and 2.1 to 3.0 times of Second Class tickets.

<sup>13</sup> Assuming the exchange rate is RMB1 = HK\$1.15 and rounded to the nearest dollar.

| <b>Destinations</b> | <b>XRL Published Fares (RMB)</b> | <b>XRL Fares in HK\$ converted from XRL Fares in RMB<sup>13</sup> (approximate)</b> |
|---------------------|----------------------------------|---|
| Guangmingchen       | 95                               | 109   |
| Humen               | 178                              | 205   |
| Qingsheng           | 185                              | 213   |
| Guangzhou South     | 215                              | 247   |

11. As for the direct train services of the XRL between the WKS and the long-haul destinations, the fare levels will be determined by adding up the existing fares for travelling from these destinations to Guangzhou South (for trains along the Beijing-Guangzhou Passenger Line, the Shanghai-Kunming Passenger Line and the Guizhou-Guangzhou Passenger Line that pass through Guangzhou South) or Shenzhen North (for trains along the Hangzhou-Fuzhou-Shenzhen Passenger Line that pass through Shenzhen North) and the fares of the XRL from Guangzhou South or Shenzhen North to the WKS respectively<sup>14</sup>. The published fares for the XRL between the WKS and all long-haul destinations are at **Annex 3**.

12. As in the case of the national high-speed rail network, half-price children fares will be offered to passengers whose height does not exceed with 150cm<sup>15</sup>. Discounted tickets will be provided to Hong Kong students who are studying in tertiary institutes approved by the Ministry of Education. Eligible Hong Kong tertiary students studying in the Mainland are entitled to purchase four single-trip Second Class tickets at a 25% discount between the location of their education institutes and Hong Kong during the summer and winter holidays. There will be no concessionary fare for the elderly for the XRL. We will continue our discussion with the CR on concessionary fares.

13. As regards the fare adjustment arrangement, according to the Memorandum of Understanding on the Arrangements for Preparation of Key Operational Issues for the XRL (“MoU”)<sup>16</sup>, if the operator of one side

<sup>14</sup> Beijing, Shanghai, Kunming, Guilin, Guiyang, Shijiazhuang, Zhengzhou, Wuhan, Changsha, Hangzhou and Nanchang are stations with trains to and from the WKS via Guangzhou South. Fuzhou, Xiamen and Shantou are stations with trains to and from the WKS via Shenzhen North. Taking Beijing as an example, the current Second Class fare between Guangzhou South and Beijing is RMB862 (around HK\$992). Adding it to the fare from the WKS to Guangzhou, i.e. HK\$247, the total fare from the WKS to Beijing is around HK\$1,239.

<sup>15</sup> Every fare-paying adult passenger can travel with a child under age of 18 whose height is under 120cm for free on the XRL so long as the child does not take up a seat.

<sup>16</sup> The MoU was signed by the Secretary for Transport and Housing and the Director of the General Office of CR, Mr Han Jiangping on 29 January 2018.



proposes to adjust the fare per km of its section, the proposing operator must raise the proposal for discussion in advance and reserve ample time for negotiating with the other operator, while the other operator must respond as soon as possible. The outcome would depend on the negotiation result between the operators of both sides. During the negotiation of fare adjustment, operators of both sides should take into account factors such as changes in composite consumer price indices, changes in wage indices, operating costs, productivity factors, changes in the exchange rate, etc of both sides. The Government will participate in the relevant negotiation and the MTRCL will need Government's approval for adjusting the fare levels.

### **Traffic and public transport arrangements to and from the WKS**

14. The WKS is conveniently located within the central part of the city. We expect that most of the passengers taking the XRL will reach the WKS using the MTR<sup>17</sup>. There will be footbridges and subways connecting the WKS to the Austin Station and the Kowloon Station.

15. There are also other public transport services, such as franchised buses and green minibuses (“GMB”), serving passengers going to the WKS. There will be three new franchises bus routes terminating at the WKS from Admiralty (West) Bus Terminus, Kwun Tong Station Public Transport Interchange, and Sheung Shui Bus Terminus to tie in with the commissioning of the XRL. Ten existing bus routes<sup>18</sup> operated by the Kowloon Motor Bus Company (1933) Limited (“KMB”) now terminating at To Wah Road Temporary Bus Terminus will be relocated to the new WKS Bus Terminus. In connection with the commissioning of the XRL, additional public transport facilities will be provided in the vicinity of the WKS on Wui Man Road. Apart from the three new franchised bus routes mentioned above, three KMB routes, namely route 260X (Po Tin – Hung Hom Station), 268B (Long Ping Station – Hung Hom Ferry) and 269B (Tin Shui Wai Town Centre – Hung Hom Ferry) will be re-routed for Hung Hom bound journeys with one additional en-route stop at Wui Man Road. Some GMB routes will also be re-routed to operate via Wui Man Road.

16. There will be 30 metered parking spaces at the north of the WKS Bus Terminus and about 100m long loading and unloading area next to the eastern

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<sup>17</sup> According to the forecast made in 2017, the proportion of modal split of XRL passengers taking MTR is 48%, while the remaining 52% is shared amongst other road-based transport or by walking.

<sup>18</sup> The route numbers and origins of the ten KMB routes are 36B (Lei Muk Shue), 36X (morning special route starting at Lei Muk Shue), 42A (Cheung Hang), 46 (Lai Yiu), 60X (Tuen Mun Central), 63X (Hung Shui Kiu (Hung Fuk Estate)), 69X (Tin Shui Estate), 81 (Wo Che), 95 (Tsui Lam) and 268X (Hung Shui Kiu (Hung Fuk Estate)).

entrance of the WKS for non-franchised buses. For passengers taking taxis or private vehicles to the WKS, a drop-off area is located at B1 Level of the WKS and taxi pick-up area and 493 public parking spaces are available at B2 Level in the WKS.

### **Station facilities**

17. The major facilities of the WKS will be located underground on four main floor levels, accommodating customs, immigration and quarantine facilities, passenger departure lounges, passenger arrival and departure halls, parking lot, loading and unloading area for passengers, unloading area for goods, etc. There are 75 escalators and 125 lifts in the WKS to facilitate movement of passengers between floors. In addition, the WKS will have different types of retail shops providing a range of services with diverse choices, including duty free shops, food and beverage, convenience stores, shops selling cosmetics, souvenirs and gifts, confectionery and electronic device, etc., as well as travel agents, banks and foreign currency exchange services.

### **Publicity and promotion**

18. To prepare for the operation of XRL, the MTRCL has been conducting multiple Meet-the-Media sessions since July 2018 to brief the press on various information of the XRL service and will explain the ticketing arrangement and other passenger information in the run-up to the commissioning of the XRL, as well as publicising through different channels. In addition, the MTRCL will hold “Hong Kong West Kowloon Station Open Days” on 1-2 September 2018 to familiarise the general public with the transport arrangements and station facilities in the WKS.

### **Vesting Deed and Deed of Assignment**

19. Following the Chief Executive in Council’s decision on 12 September 2017 that the land or interests or other rights in respect of land for the operation of the XRL be vested in and the movable assets of the XRL be assigned to the KCRC at nominal value, the Government and the KCRC have entered into the Vesting Deed and the Deed of Assignment. The salient terms of these deeds include: a 50-year term for the vesting of the land to the KCRC, a break clause providing the Government with the right to take back the land/the movable assets where appropriate, and a nominal premium at the

prevailing standard rate of HK\$1,000 for the land as well as a nominal consideration of HK\$1 for the movable assets. The Vesting Deed and the Deed of Assignment need to be entered into by the Government and the KCRC before the KCRC can enter into the SSCA with the MTRCL. Intangible assets, such as bonds, guarantees, intellectual property rights, product/third party contractors' or MTRCL's warranties and collateral deeds will either be held by the MTRCL and/or the Government as appropriate.

## **SSCA**

### Concession period

20. National high-speed rail is a relatively new development in the Mainland, and the XRL is a brand new mode of cross-boundary transport for Hong Kong. Neither the KCRC nor the MTRCL have experience in operating a high-speed rail, making it difficult to make reliable business projections for the operation of the XRL over a long period of time. Upon discussion, the Government, the KCRC and the MTRCL agree that the KCRC should grant a ten-year concession to the MTRCL. By this arrangement, both the KCRC and the MTRCL noted that they could accumulate more experience in the operation of the XRL, which could provide a useful and solid reference for more reliable business projections for the operation of the XRL for the period beyond the ten-year concession period, and for the KCRC to consider the future arrangements for the granting of the operating right of the XRL.

21. The SSCA will provide for the respective obligations of the KCRC and the MTRCL upon the expiry of the concession period (or its termination) regarding the return of concession property, respective access rights and arrangements in respect of intellectual property. The SSCA also contains clauses that regulate the negotiation for extension of concession period for the XRL between the KCRC and the MTRCL.

### Concession payments

22. The MTRCL needs to pay the KCRC additional concession payments in return for the grant of the Service Concession for the XRL. The amount is calculated by taking 90% of the Discounted Net Cashflow of each year of the project. The additional concession that the MTRCL has to pay the KCRC is estimated to be about \$2.71 billion (in money-of-the-day

(“MOD”) terms) over the ten-year concession period<sup>19</sup>. The actual amount to be received by the KCRC will be based on the actual patronage of the XRL. Under section 14 of the Kowloon-Canton Railway Corporation Ordinance, the KCRC may declare and pay dividends to the Government in the amount of the whole or part of the profits of the KCRC in any financial year. Therefore, the Government will benefit from the positive Additional Concession Payments received from the XRL through the receipt of dividends from the KCRC.

23. Connection to more new destinations in the Mainland will provide more options for cross-boundary transport. The Government is therefore confident that the commissioning of the XRL can boost the overall cross-boundary passenger flows. Coupled with the competitive fare level for the XRL and a mechanism to adjust the fare according to market responses, the XRL will be able to achieve financial health and stability. Since the XRL will be a brand new cross-boundary transport mode, the Government has adopted a prudent approach to forecast the patronage for the XRL in considering the business case of the project. Nevertheless, having regard to commercial considerations as well as balancing returns and risks, the Government, the KCRC and the MTRCL agree on the two arrangements below:

- (a) When the actual patronage of the XRL deviates much from the projected patronage, the KCRC and the MTRCL will share the returns or risks arising from such the deviation under a fair and symmetric mechanism, which is called a “Patronage Cap-and-Collar Mechanism”. If the deviation of actual from the projected patronage is within 15%, the MTRCL will bear all the risk or retain all the return; if the deviation of actual from the projected patronage is beyond 15%, the MTRCL and the KCRC will bear the risk or share the return according to the ratio of 30%:70%. In any event, the MTRCL will still need to pay to the KCRC Variable Annual Payments according to the total revenue generated from the operation of KCRC Railways (including East Rail Line, West Rail Line and Light Rail) and related business according to the mechanism under the Service Concession Agreement; and
- (b) The Government expects that the XRL should only have minimal impact on the patronage of the existing MTRCL rail network (in particular the East Rail Link including Lo Wu and Lok Ma Chau stations). Nevertheless, the KCRC and the MTRCL agrees to

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<sup>19</sup> The amount to be paid by the MTRCL to the KCRC will be \$10.7 billion (in MOD terms). The KCRC would pay around \$8 billion (in MOD terms) to the MTRCL. The actual payment received by the KCRC would therefore be a net of \$2.7 billion.

calculate the actual impact of the XRL on the patronage of the existing rail network over two periods and the total amount will not exceed HK\$1.5 billion. The estimated Additional Concession Payment to be received by the KCRC (i.e. HK\$2.7 billion) should be able to offset the effect even if such circumstance arises.

## **AOA**

24. The Operating Agreement (“OA”), signed between the Government and the MTRCL in 2007, governs the latter on the operation and management of existing and new railway projects undertaken/to be undertaken by it. Since its inception, the Government and the MTRCL have reviewed the OA and signed supplemental and amendment agreements to reflect continuously changing operating environment, including the commissioning of new railway lines.

25. With the grant of the Service Concession of the XRL to the MTRCL, an AOA will be entered into between the Government and the MTRCL to specify the requirements imposed by the relevant policy and regulatory bureau/departments (namely, the Transport and Housing Bureau, the Security Bureau, the Electrical and Mechanical Services Department (“EMSD”) and the Transport Department) on the MTRCL in relation to the operation of the XRL. The AOA has the following key terms.

### *(a) Safety and asset management*

26. Railway safety is of paramount importance. The MTRCL shall design, construct, operate and maintain the XRL and its trains in a safe manner at all times. For XRL trains to be run by the Mainland operators, the MTRCL is also required to establish a system to carry out design checks and tests to verify their safety, to the satisfaction of EMSD, before certified in writing to STH for allowing such trains to be run in the XRL.

27. For continuous review and control of safety risks as well as effective management of railway assets, the MTRCL will be required to establish and upkeep a safety management system and an asset management system, as in the case of its Domestic Services. The MTRCL will also be required to provide adequate number of qualified staff to operate the XRL, whereas the EMSD will be empowered to inspect the MTRCL’s training and qualification system. Separately, the MTRCL will monitor the driving performance of train captains and devise mechanisms to enforce against drink driving and drug driving.

*(b) Standards of passenger services*

28. The MTRCL is required to provide the XRL services in a safe, proper and efficient manner at all times during the concession period. Specifically, the MTRCL will need to meet certain performance standards on reliability of passenger service related equipment at the WKS (including ticket machines, ticket gates, escalators and passenger lifts). Besides, the MTRCL shall provide and maintain a reliable, adequately staffed ticketing system for fare collection, as well as maintaining a comfortable, clean and well ventilated passenger environment in the WKS.

29. At the early stage of the commissioning of the XRL, the MTRCL, together with the Mainland operators, will provide train services in accordance with the train schedule set out in paragraph 4 above. The Mainland operator will operate the long-haul trains, and around half of short-haul services during peak periods. The MTRCL will enter into an Operating Co-operation Agreement with the Mainland operator, represented by China Railway Guangzhou Group Company Limited (“GRC”) that both the MTRCL and the Mainland operator will undertake to provide train services and other operating arrangements of the XRL. While the MTRCL will be primarily responsible for running its own trains and be required to comply with train service performance standards (including train service delivery, cleanliness and ventilation, etc.), the AOA will also contain clauses for the provision of similar train service performance standards for XRL trains run by the GRC. This seeks to ensure, particularly, that the train schedule in paragraph 4 above for the XRL as a whole is achievable, through the collaboration between the MTRCL and the GRC. Train schedule is subject to change upon prior notification to the Commissioner of Transport.

*(c) Security arrangement*

30. With due regard to the co-location arrangement, the security and integrity of the Hong Kong’s boundary has to be preserved to prevent unauthorised access to and exit from the Mainland Port Area. The MTRCL will be required to ensure the security and safety of the operation of the XRL, the WKS and the related facilities including tunnels, ventilation buildings and Shek Kong Stabling Sidings, etc., and any other security requirements set by the Government as and when necessary.

**Economic benefits**

31. The overall fare revenue of the XRL is projected based on the patronage forecast in Annex 2 as well as the fare revenue retained by the MTRCL (at **Annex 4**). Consensus was reached under the MoU to adopt the

“section-based” approach for revenue and operating cost sharing for the XRL between the Mainland and Hong Kong operators. The two operators will share the fare revenue according to the “fare per km” of their respective sections determined by each side. As for the long-haul destinations, the MTRCL will share the fare revenue according to the “fare per km” of the trains to/from Shenzhen North or Guangzhou South, depending on whether the long-haul destinations are along the Hangzhou-Fuzhou-Shenzhen Passenger Line or along the Beijing-Guangzhou Passenger Line, the Shanghai-Kunming Passenger Line or the Guizhou-Guangzhou Passenger Line.

32. As for operating costs, under the “section-based” approach, the two operators will receive from the other side the operating cost of their respective trains running into the other side’s section.

33. Basing on the above projections on fare revenue, the projections on non-fare revenue (including advertising, kiosks and duty free shops, rental income of telecommunication facilities etc.) and operating cost (including energy, operating and maintenance cost, staff costs, support services, rates and Government rents and other operating costs etc.) provided by the MTRCL to project the operating profit (in terms of EBITDA<sup>20</sup>) and operating margins of the XRL project (see **Annex 5**).

34. The above operating revenue and operating cost are projected having regard to the operating arrangements (including the fare revenue and cost sharing approach) upon discussion with the CR as well as the projections on operating revenue and operating cost. The actual figures are subject to actual operating arrangements and situation.

35. EBITDA is an appropriate and well-accepted indicator of the operational performance of infrastructure projects like the XRL. It can show whether recurrent cash subsidy is necessary to keep the railway in operation. The projected positive EBITDA suggests that the operation of the XRL can be sustained without subsidy. Based on the above estimate, even if the patronage is lower than expected, it is unlikely that the operating revenue will drop below the operating cost and hence resulting in operating loss. The current EBITDA assessment is more or less the same as the assessment result in 2009 and 2015.

36. With respect to the direct economic benefits of the XRL, in typical railway projects, the direct economic benefits will only take into account the cost savings due to time savings of passengers, the cost savings in the

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<sup>20</sup> EBITDA is Earnings Before Interest, Tax, Depreciation and Amortisation

operation of other public transport modes and the cost savings due to accident reduction. We estimate that the majority (more than 90%) of the direct economic benefits comes from the cost savings due to passenger time savings. The benefits estimated to be brought about by the cost savings due to passenger time savings as a result of the XRL over 50 years of operation (2018 to 2067) would be about HK\$88 billion (discounted to 2018 prices at a rate of 4%), with an Economic Internal Rate of Return (“EIRR”)<sup>21</sup> of around 2%.

37. The XRL will also have indirect economic benefits which cannot be simply and instantly quantified. By enhancing Hong Kong’s connectivity with the Mainland, it will boost exchanges between Hong Kong and major Mainland cities and foster the development of complementary advantages. The pillar industries of Hong Kong, such as financial services, trading and professional services, stand to benefit in particular. More tourists will be attracted to make Hong Kong a starting point or destination of their rail journeys. The location of the WKS, adjacent to the West Kowloon Cultural District, will also create a synergy with this world-class integrated arts and cultural district. Jobs will also be created in railway operation and maintenance as well as retail, catering, station management and services at the WKS.

## **Conclusion**

38. Members are invited to note the operating arrangements for the XRL.

**Transport and Housing Bureau  
August 2018**

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<sup>21</sup> The EIRR is the net rate of return of the project calculated by subtracting the construction costs and operation costs during construction and the subsequent 50 years of operation from the economic benefits.



**Number of trains reaching each short-haul and long-haul destination  
(including a terminus station and an intermediate stop)**

| Destinations  | Number of train stops per day            |                                       |
|---|--|---------------------------------------|
|   | Northbound trains departing from the WKS | Southbound trains arriving at the WKS |
| <b>Short-haul trains (for peak periods)</b>                           |  |                                       |
| Futian  | 60 – 68 <sup>^</sup>                     | 60 – 68                               |
| Shenzhen North  | 65                                       | 66                                    |
| Guangmingcheng  | 2  | 5                                     |
| Humen   | 20                                       | 18                                    |
| Qingsheng   | 1  | 1                                     |
| Guangzhou South   | 34                                       | 34                                    |
| <b>Long-haul trains (for weekdays, weekends and peak periods)</b>     |  |                                       |
| <b>Destinations along the Beijing-Guangzhou Passenger Line</b>        |  |                                       |
| Beijing* <sup>#</sup>   | 1  | 1                                     |
| Shijiazhuang <sup>#</sup>   | 1  | 1                                     |
| Zhengzhou <sup>#</sup>  | 1  | 1                                     |
| Wuhan <sup>#</sup>  | 1  | 1                                     |
| Changsha* <sup>#</sup>  | 3  | 3                                     |
| Zhuzhou West <sup>@</sup>   | 1  | 1                                     |
| Hengyang East <sup>@</sup>  | 1  | -                                     |
| Chenzhou West <sup>@</sup>  | 1  | 1                                     |
| Shaoguan <sup>@</sup>   | 2  | 2                                     |
| <b>Destinations along the Shanghai-Kunming Passenger Line</b>         |  |                                       |
| Shanghai* <sup>#</sup>  | 1  | 1                                     |
| Hangzhou <sup>#</sup>   | 1  | 1                                     |
| Jinhua <sup>@</sup>   | 1  | 1                                     |
| Shangrao <sup>@</sup>   | 1  | 1                                     |
| Kunming* <sup>#</sup>   | 1  | 1                                     |
| Nanchang <sup>#</sup>   | 1  | 1                                     |
| <b>Destinations along the Guizhou-Guangzhou Passenger Line</b>        |  |                                       |
| Guiyang <sup>#</sup>  | 1  | 1                                     |
| Guilin <sup>#</sup>   | 1  | 1                                     |
| <b>Long-haul trains (for weekdays, weekends and peak periods)</b>     |  |                                       |
| <b>Destinations along the Hangzhou-Fuzhou-Shenzhen Passenger Line</b> |  |                                       |
| Fuzhou* <sup>#</sup>  | 1  | 1                                     |
| Putian <sup>@</sup>   | 1  | 1                                     |
| Quanzhou <sup>@</sup>   | 1  | 1                                     |

| Destinations                      | Number of train stops per day            |                                       |
|-----------------------------------|--|---------------------------------------|
|                                   | Northbound trains departing from the WKS | Southbound trains arriving at the WKS |
| Xiamen* <sup>#</sup>              | 3  | 3                                     |
| Xiamen North <sup>@</sup>         | 1  | 1                                     |
| Zhangzhou <sup>@</sup>            | 2  | 3                                     |
| Jiaomei <sup>@</sup>              | -  | 1                                     |
| Zhangpu <sup>@</sup>              | 1  | -                                     |
| Yunxiao <sup>@</sup>              | -  | 1                                     |
| Zhao'an <sup>@</sup>              | -  | 1                                     |
| Raoping <sup>@</sup>              | -  | 1                                     |
| Shantou* <sup>#</sup>             | 8  | 9                                     |
| Chaoyang <sup>@</sup>             | 4  | 2                                     |
| Puning <sup>@</sup>               | 2  | 3                                     |
| Kuitan <sup>@</sup>               | 1  | -                                     |
| Lufeng <sup>@</sup>               | 1  | 6                                     |
| Shanwei <sup>@</sup>              | 4  | 2                                     |
| Houmen <sup>@</sup>               | 2  | -                                     |
| Huidong <sup>@</sup>              | 1  | 1                                     |
| Huizhou South <sup>@</sup>        | 5  | 5                                     |
| Shenzhen<br>Pingshan <sup>@</sup> | 4  | 2                                     |

Legends:

- ^ Subject to discussion and finalisation with CR and GRC
- \* Destinations as terminus stations
- # Destinations included in the Memorandum of Understanding on the Arrangements for Preparation of Key Operational Issues for the XRL signed between the Government and the CR on 29 January 2018
- @ Destinations newly added based on actual train scheduling

## Daily patronage forecast for the XRL in 2018

| XRL Train Services | Daily Patronage Forecast for the XRL in 2018 |                                |               |               |
|--------------------|--|--------------------------------|---------------|---------------|
|                    | Mondays to Thursdays                         | Fridays, Saturdays and Sundays | Peak Periods  | Average       |
| <b>Short-haul</b>  | <b>60 100</b>                                | <b>64 700</b>                  | <b>74 700</b> | <b>66 400</b> |
| Futian             | 35 100                                       | 37 700                         | 43 600        | 38 700        |
| Shenzhen North     | 7 400  | 8 000                          | 9 200         | 8 200         |
| Humen              | 3 100  | 3 400                          | 3 900         | 3 500         |
| Guangzhou South    | 14 500                                       | 15 600                         | 18 000        | 16 000        |
| <b>Long-haul</b>   | <b>12 400</b>                                | <b>13 400</b>                  | <b>15 400</b> | <b>13 700</b> |
| <b>Total</b>       | <b>72 500</b>                                | <b>78 100</b>                  | <b>90 100</b> | <b>80 100</b> |

Note: The average daily patronage forecast has taken into account the different train schedules on weekdays, weekends and peak periods.

## Daily patronage forecast for the XRL for 2018, 2021 and 2031

| XRL Train Services | Daily Patronage Forecast (Average) |               |                |
|--------------------|------------------------------------|---------------|----------------|
|                    | 2018                               | 2021          | 2031           |
| <b>Short-haul</b>  | <b>66 400</b>                      | <b>72 800</b> | <b>94 900</b>  |
| Futian             | 38 700                             | 43 400        | 59 100         |
| Shenzhen North     | 8 200                              | 8 700         | 12 800         |
| Humen              | 3 500                              | 3 700         | 4 700          |
| Guangzhou South    | 16 000                             | 17 000        | 18 300         |
| <b>Long-haul</b>   | <b>13 700</b>                      | <b>22 200</b> | <b>34 400</b>  |
| <b>Total</b>       | <b>80 100</b>                      | <b>95 000</b> | <b>129 300</b> |

**Published Fares for Second Class Tickets for the XRL  
between the West Kowloon Station and Long-haul Destinations**

| <b>Long-haul Destinations</b>   | <b>Fares (RMB)</b> | <b>Fares in HK\$<br/>converted from<br/>Fares in RMB<sup>1</sup><br/>(approximate)</b> |
|---|--------------------|--|
| <b>Destinations along the Beijing-Guangzhou Passenger Line</b>        |                    |  |
| Beijing   | 1,077              | 1,239  |
| Shijazhuang   | 1,000.5            | 1,151  |
| Zhengzhou   | 868                | 998  |
| Wuhan   | 678.5              | 780  |
| Changsha  | 529                | 608  |
| Zhuzhou West  | 509                | 585  |
| Hengyang East   | 459                | 528  |
| Chenzhou West   | 389.5              | 448  |
| Shaoguan  | 319.5              | 367  |
| <b>Destinations along the Shanghai-Kunming Passenger Line</b>         |                    |  |
| Shanghai  | 1,008              | 1,159  |
| Hangzhou  | 935                | 1,075  |
| Jinhua  | 868                | 998  |
| Shangrao  | 794                | 913  |
| Kunming   | 750.5              | 863  |
| Nanchang  | 687                | 790  |
| <b>Destinations along the Guizhou-Guangzhou Passenger Line</b>        |                    |  |
| Guiyang   | 538                | 619  |
| Guilin  | 379                | 436  |
| <b>Destinations along the Hangzhou-Fuzhou-Shenzhen Passenger Line</b> |                    |  |
| Fuzhou  | 349                | 401  |
| Putian  | 317                | 365  |
| Quanzhou  | 292                | 336  |
| Xiamen  | 269                | 309  |
| Xiamen North  | 265                | 305  |
| Zhangzhou   | 250                | 288  |
| Jiaomei   | 256                | 294  |
| Zhangpu   | 233                | 268  |
| Yunxiao   | 222                | 255  |

<sup>1</sup> RMB will be used as the currency for fare setting and clearing payments between the Mainland and Hong Kong operators. The XRL fares in Hong Kong dollars in the table are converted from the XRL fares in RMB. Assuming the exchange rate is RMB1 = HK\$1.15 and rounded to the nearest dollar. The fare levels will be adjusted according to the actual market situation.

| <b>Long-haul Destinations</b> | <b>Fares (RMB)</b> | <b>Fares in HK\$ converted from Fares in RMB<sup>1</sup> (approximate)</b> |
|-------------------------------|--------------------|--|
| Zhao'an                       | 210                | 242  |
| Raoping                       | 203                | 233  |
| Shantou                       | 188                | 216  |
| Chaoyang                      | 178                | 205  |
| Puning                        | 168                | 193  |
| Kuitan                        | 157                | 181  |
| Lufeng                        | 146                | 168  |
| Shanwei                       | 133                | 153  |
| Houmen                        | 121                | 139  |
| Huidong                       | 108                | 124  |
| Huizhou South                 | 96                 | 110  |
| Shenzhen Pingshan             | 88                 | 101  |

### Fare revenue for the XRL to be shared by the Hong Kong side

| Destinations                                 | Fare revenue shared by the Hong Kong side (Based on Second Class Tickets <sup>1</sup> ) (HK\$) | Percentage to the fare levels |
|--|--|-------------------------------|
| <b>Short-haul</b>                            |  |                               |
| Futian                                       | 74   | 95%                           |
| Shenzhen North                               | 71   | 83%                           |
| Guangmingchen                                | 75   | 69%                           |
| Humen  | 128  | 62%                           |
| Qingsheng                                    | 114  | 54%                           |
| Guangzhou South                              | 112  | 45%                           |
| <b>Long-haul</b>                             |  |                               |
| Destinations to/from WKS via Guangzhou South | 112  | 9% - 31%                      |
| Destinations to/from WKS via Shenzhen North  | 71   | 18% - 70%                     |

**Note:** The current Intercity Through Train (“ITT”) services to Dongguan and Guangzhou adopts a Mileage-based mechanism as the revenue and cost sharing mechanism. Essentially, this means that the two operators will share the fare revenue according to the relative length of its respective section to the full length of the section. As for operating costs, each side basically needs to absorb the related costs of operation of its own trains and will not share these costs with the other side. If the Mileage-based mechanism were to be adopted for the XRL, the fare revenue for the XRL would be around 18% of the corresponding fare levels only, based on roughly the relative length of the Hong Kong Section (i.e. 26 km) to the full length of the XRL (i.e. 142 km)

<sup>1</sup> The fare revenue of other classes of ticket of the XRL to be shared by the MTRCL will be calculated having regard to the proportion of the fares of that class of ticket to the fare of the Second Class ticket.

### Projected Operating Revenue and Operating Margin of the XRL

|                                     | <b>2018</b>    | <b>2021</b>    | <b>2031</b>    |
|-------------------------------------|----------------|----------------|----------------|
| <b>Operating Revenue</b>            | <b>0.671</b>   | <b>3.254</b>   | <b>7.067</b>   |
| Fare revenue                        | 0.620          | 3.023          | 6.643          |
| Non-fare revenue                    | 0.051          | 0.231          | 0.424          |
| <b>Operating Cost</b>               | <b>(0.472)</b> | <b>(1.836)</b> | <b>(3.296)</b> |
| Energy                              | (0.047)        | (0.202)        | (0.321)        |
| Non-staff Operating and Maintenance | (0.209)        | (0.804)        | (1.360)        |
| Staff cost                          | (0.063)        | (0.300)        | (0.474)        |
| Support Services                    | (0.026)        | (0.109)        | (0.154)        |
| Rent and Rates                      | (0.001)        | (0.001)        | (0.076)        |
| Other Operating Cost                | (0.126)        | (0.420)        | (0.911)        |
| <b>EBITDA</b>                       | <b>0.199</b>   | <b>1.418</b>   | <b>3.771</b>   |
| <b>Operating Margin</b>             | <b>29.6%</b>   | <b>43.6%</b>   | <b>53.4%</b>   |

**Note:**

1. In money-of-the-day terms (billion)
2. With the expected commissioning of the XRL in September 2018, the estimates for the year cover the fourth quarter only.
3. Operating Margin =  $\frac{\text{Operating Revenue} - \text{Operating Cost}}{\text{Operating Revenue}} \times 100\%$