

**[Hong Kong Interchange Option]  
A cheaper, faster and better Express  
Rail Link**

**By  
New XRL Expert Group\***

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## **1. INTRODUCTION**

### **1.1 History**

- 1.1.1 The Guangzhou-Shenzhen-Hong Kong Express Rail Link is a new railway line which will link Hong Kong with the National High Speed railway network and will further enhance Hong Kong's strategic position as the southern gateway to Mainland China.
- 1.1.2 The Link will provide frequent services from a new terminus in Hong Kong to Shibi in the suburbs of Guangzhou, via Futian and Longhua in Shenzhen and Humen in Dongguan. At Shibi the Link will connect to the national express rail network which will provide long haul services to other major cities in the Mainland. Also from Shibi, a separate rail link will take passengers into the centre of Guangzhou.
- 1.1.3 The construction of the Hong Kong Section, south of the Boundary, hereinafter referred to as Express Rail Link, is the responsibility of the Hong Kong Government, who have entrusted the procurement of the project to the Mass Transit Railway Corporation.
- 1.1.4 Various studies have been undertaken by the Hong Kong Government, the Kowloon Canton Railway Corporation and, since the merger of the two Hong Kong railway corporations, by the Mass Transit Railway Corporation.
- 1.1.5 These studies concluded that the Hong Kong terminus for the Express Rail Link should be located at West Kowloon with a dedicated route from the Boundary, as opposed to making use of the spare capacity on the other lines serving West Kowloon.
- 1.1.6 The piecemeal development of West Kowloon with Kowloon Station, and more recently Austin Station, prevents integration of Government's West Kowloon Station Option for the Express Rail Link into an integrated rail transport hub.

### **1.2 The Alternative Integrated Option**

- 1.2.1 Since the commencement of the studies, the cost of providing the Express Rail Link south of the Boundary have increased over fourfold with the latest estimated cost of \$63 Bn. This cost is more than the combined cost of the West Hong Kong West Island Line, the Hong Kong South Island Line, and the Shatin-Central Line.
- 1.2.2 This escalation of cost raises serious doubts on the cost effectiveness of the investment for Government's West Kowloon Station Option, especially as a statement from the Hong Kong Government that the benefit to Hong Kong will only be \$80Bn accrued over a 50 year period.
- 1.2.3 The studies undertaken for the Express Rail Link considered locating the terminus at Kam Sheung Road, in close proximity to the existing West Rail Line station and also considered an intermediate station at this location on a line termination at West Kowloon. They did not consider the option of providing a terminus at Kam Sheung Road integrated with both the West Rail Line and a direct rail link to Hong Kong Island and to Chek Lap Kok.

1.2.4 This alternative, the Integrated Option, locates the terminus for the Express Rail Link adjacent to the West Rail Kam Sheung Road Station forming an integrated station with a terminus on an extension of the Airport Railway from Tsing Yi thus providing a fast link to Hong Kong Island. This integrated interchange station will become an important railway hub and, for the purpose of this report, it is referred to as HK Interchange and the extension of the Airport Railway as the HK Island Express.

## 2. DISADVANTAGES WITH THE GOVERNMENT WEST KOWLOON OPTION

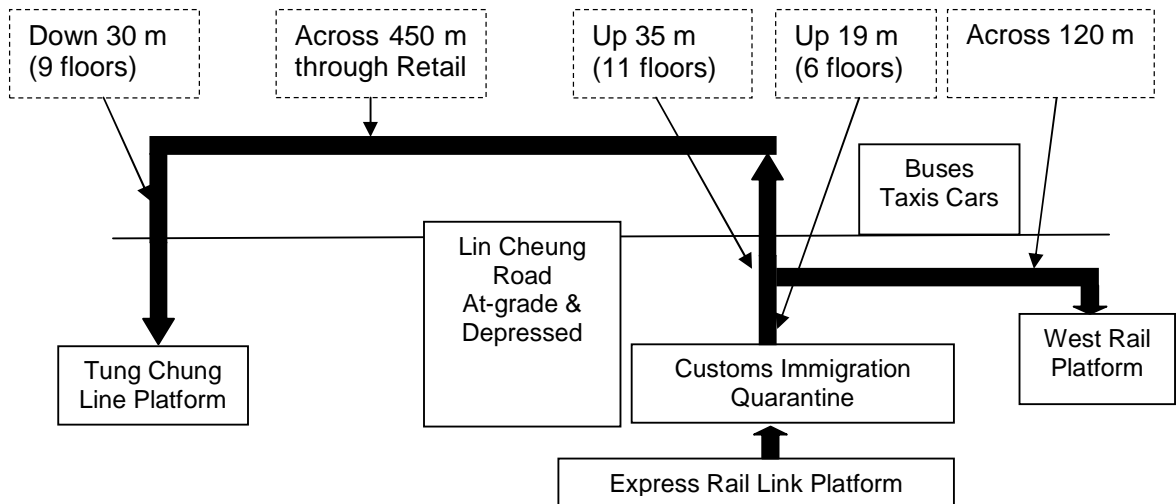
### 2.1 Interchange

2.1.1 The West Kowloon Station is located between Kowloon Station and Austin Station but distant from them both. Lin Cheung Road, between Kowloon Station and the West Kowloon Station, will include both at-grade and depressed roads thus not allowing any subway connection between the two separate stations.

2.1.2 The EIA reports confirms that access between the two stations will be via a footbridge requiring passengers in West Kowloon Station to make use of escalators and lifts to access the footbridge level, about 35 metres above platform level, equivalent to 11 floors in a building. Once passengers are within the Kowloon Station complex, they will be directed through the “Elements” retail area to further lifts and escalators, which will take them down about 30 metres to the Tung Chung Line platform, equivalent to a further 9 floors of a building.

2.1.3 The passenger interchange between these two stations will be difficult and slow, thus giving poor access to and from Hong Kong Island and other locations. Excluding the time for customs and immigration it is anticipated the transfer time between platforms will be around 12 minutes.

2.1.4 Access between the West Kowloon Station and Austin Station will be by a subway beneath the new Road D1 which will run parallel and to the west of Austin Station. Passengers will ascend about 19 metres, equivalent to 6 building floors, and then walk through the subway into Austin Station where they descend to the West Rail platform. The subway distance between the centres of the two stations is about 120 metres.



**West Kowloon Interchange Arrangement**

## **2.2 Construction**

- 2.2.1 The construction of the West Kowloon Station Option will be a massive undertaking in a constrained site. It requires the formation of a large deep excavation with an area approximately the size of 25 standard MTR stations, such as those in Nathan Road, and also as deep as the deepest stations. The depth is constrained by the need for the approach tunnels to pass beneath the recently opened West Rail extension on the Kowloon Southern Link.
- 2.2.2 Due to the nature of the site, requiring a deep excavation which must be kept dry, it is not possible to stage the major construction works to allow for a staged construction of the station. If such an arrangement were possible, the initial construction would be for those facilities which are required for the initial and foreseeable rail operations. Those facilities which might be required at a later date would be constructed at a time when their needs have been properly identified. With the station at West Kowloon all of the major construction must be undertaken now, thus some of the platforms and spaces formed may never be required or may be required in a different form from which they have been constructed.
- 2.2.3 The site is also very constrained as there are very limited areas for use as working space, since excavation and construction is over the whole of the site. The magnitude of the several different contracts for the construction will create many problems on interfacing and there is very high risk that completion by 2015 will not be achieved.
- 2.2.4 Construction of the tunnels leading into the station will require another diversion and reconstruction of Jordan Road which has only just been reinstated following the construction of the Kowloon Southern Link leading into Austin Station. Traffic in the area will therefore again be subject to disruption for a five year period while the station and approach tunnels are constructed.
- 2.2.5 The route from the Boundary requires the construction of 25 km of tunnels including a 6 km long tunnel 700 metres beneath the slopes of Tai Mo Shan and a 1.2 km long Emergency Rescue Centre and Depot depressed several metres below the surrounding ground level.

## **2.3 Traffic**

- 2.3.1 The West Kowloon area is recognised for traffic congestion, particularly for southbound traffic from the West Kowloon Expressway. This traffic has to make a right turn onto Canton Road which is currently achieved at the Wui Cheung Road T junction. In the future this traffic will be diverted to make a right turn at the four-way junction between Austin Road and Canton Road immediately after merging with traffic from the station and traffic from the western section of Austin Road. There are serious doubts on the adequacy of the space and lengths between junctions to accommodate these traffic movements without significant congestion.
- 2.3.2 Traffic in the area is heavily constrained by the large number of junctions with inadequate length for vehicle queuing between adjacent signal controlled junctions. The provision of Road D1, requiring the introduction of a further four-way junction on Jordan Road immediately to the north of the station, will not be conducive to the free flow of traffic along Jordan Road.

2.3.3 Some relief to the existing flows will be given by the Central Kowloon Route, but this will mainly reduce flows along Gascoigne Road rather than further south. Any reduction in traffic flows in this area, resulting from the Central Kowloon Route, will be quickly absorbed by the traffic from the new developments at the Elements and ICC Development and the WKCD.

2.3.4 The design of the road system associated with the Government's West Kowloon Station Option has therefore been aimed at providing reasonable free access to the station from the north and the Western Harbour Crossing without being able to achieve similar conditions for traffic from the station to the south. It can therefore be expected that that traffic leaving the station for the south and east will suffer congestion and delays for much of the day.

## **2.4 Impact on the WKCD**

2.4.1 The track overruns beyond the end of the platforms, necessary in the event that a train does not stop at the required position alongside the platform, extend south under the site allocated for the WKDC. The underground structure, necessary to provide these overruns, adds significant problems to achieving a good design for the WKCD.

## **3. DETAILS OF THE ALTERNATIVE INTEGRATED OPTION**

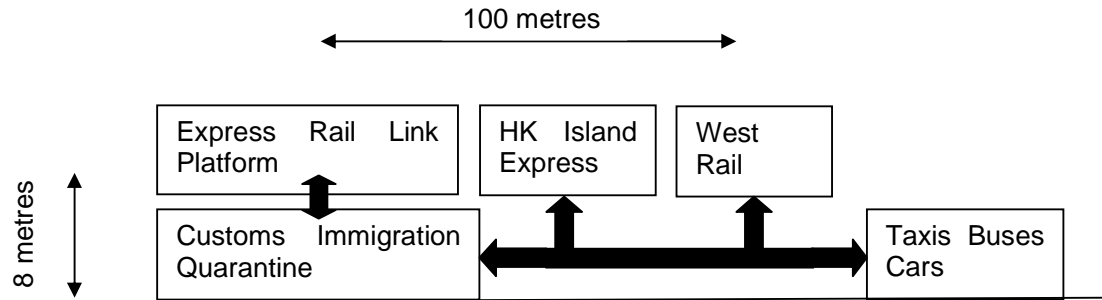
### **3.1 The Express Rail Link to HK Interchange**

3.1.1 The route for the Integrated Option to HK Interchange initially follows the route as for the West Kowloon Station Option from Futian Station to where it passes under the San Tin Highway. Here the route deviates with the route to HK Interchange swinging to the south, crossing under the Ngau Tam Mei valley, and continuing underground running roughly parallel to the San Tin Highway towards HK Interchange.

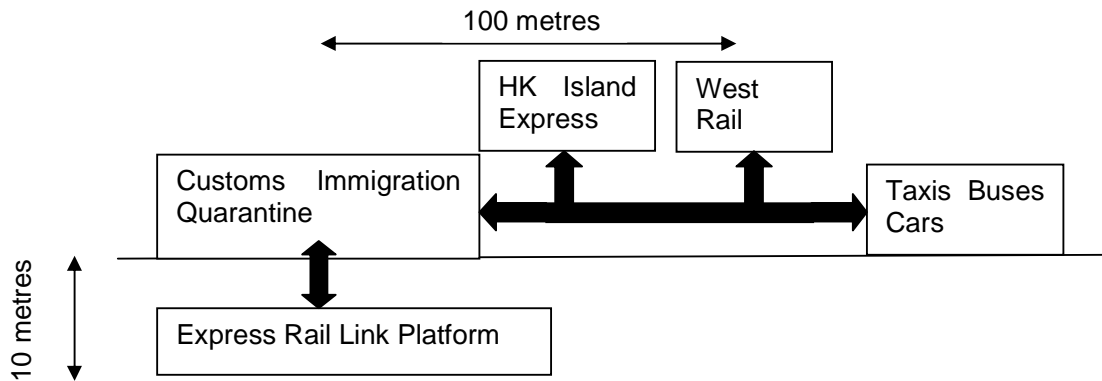
3.1.2 North of the San Tin Highway and across the Ngau Tam Mei valley, the tunnels would be through soft ground. On either side of the Ngau Tam Mei valley where the ground is higher, the tunnels will be through hard or mixed ground conditions. All of these tunnels will be bored whereas the tunnels on the approaches to HK Interchange will be constructed by cut-and-cover methods in the soft ground.

3.1.3 The two primary options for the Integrated HK Interchange Station are with the Express Rail Link Station underground and with it above ground. The latter will be cheaper and quicker to construct and also allows greater flexibility for construction phasing. Both options allow for a simple and quick ground level interchange between the Express Rail Link, the HK Island Express, West Rail and road based transport as shown diagrammatically below. Road based transport will also be able to directly access the adjacent Route 3 Expressway.

3.1.4 Escalators, supplemented by lifts for passengers with luggage and mobility impaired passengers, will carry the passengers for the 8 metre change in level between the platforms and the Immigration / Customs areas. For the underground arrangement the rise will be about 10 metres. The centre of the Express Rail Link platforms to the centre of the West Rail platforms is only 100 metres, thus providing for an integrated station.



**Above Ground Interchange Arrangement**



**Below Ground Interchange Arrangement**

3.1.5 The Express Rail Link tracks continue through the station and rise (or, for the above ground option, descend) to ground level where they continue to the maintenance and servicing depot to the south. In this way trains, particularly long-haul trains, do not need to be stabled within the station as in Government's West Kowloon Station Option, thus enabling HK Interchange Station to have the same capacity as a station at West Kowloon with fewer tracks and platforms thereby reducing the stations overall size.

3.1.6 The depot for the Integrated Option will be above ground to the south of Pat Heung Road occupying an area which is affected by noise from the adjacent Route 3, Tsing Long Highway and hence with limited commercial development potential.

### **3.2 The Extension of the Airport Railway**

3.2.1 Fundamental to providing fast access to Hong Kong Island and to the Airport is the extension of the Airport Railway to HK Interchange to form the HK Island Express.

3.2.2 The Airport Line and the Tung Chung Line have separate tracks between Tsing Yi and Kowloon but share the same pair of tracks across the Tsing Ma Bridge and on Lantau. The overall capacity of the two lines is constrained by the Tsing Ma Bridge thus a spur from the line between Tsing Yi and the Tsing Ma Bridge can make use of the spare capacity south to Kowloon.

- 3.2.3 From HK Interchange, the line for the HK Island Express will run south above ground level with West Rail on the east and the Tsing Long Highway on the west. A kilometre and a half south of Pat Heung Road, it enters a tunnel, some 400 metres to the east of the Route 3 tunnel portal, and continues in tunnel under the Tai Lam Country Park. The tunnel will be through rock for its full length with the possible exception of short sections of soft ground near the portals. No access either for construction or the permanent works will be required from within the Country Park.
- 3.2.4 The line for the HK Island Express emerges from tunnel, after passing under the Tuen Mun Highway, and continues on viaduct to cross the Rambler Channel and the Tsing Yi Coast Road before re-entering a tunnel under the northern Tsing Yi hills. Here the two tracks would be carried in separate tunnels which would swing to the east and junction with the tunnels for the Airport Express and Tung Chung Lines. These tunnels will be through rock strata.
- 3.2.5 The HK Island Express from HK Interchange would use the same pair of tracks as the Airport Express travelling via Tsing Yi and Kowloon Stations to Hong Kong Station. The journey time from HK Interchange to Hong Kong Station, in the commercial heart of Hong Kong, would be 21 minutes with a train leaving every 6 minutes in the peak period.
- 3.2.6 At Tsing Yi Station passengers could change trains for a train from the other platform direct to Chek Lap Kok or to Sunny Bay and Tung Chung and the same procedure in the reverse direction.
- 3.2.7 The direct link to HK Interchange from Hong Kong Island and from Kowloon opens up the possibility of in-town check in for travellers and their luggage heading on long-haul trains from HK Interchange.

### **3.3 Shorter Travel Times with the Integrated Option**

- 3.3.1 With the Government's West Kowloon Station Option, travellers from the New Territories and northern Kowloon will have to travel south before boarding a train to travel north. This is both time consuming and inefficient and will result in many of these travellers taking the alternative road transport to the Boundary.
- 3.3.2 With the Integrated Option many of these travellers will travel north to HK Interchange and take the much shorter journey to the Boundary.
- 3.3.3 The constraints on the West Kowloon Station Option, which result in the platforms being in excess of 25 metres below ground makes for a time consuming interchange to Austin Station and in particular to Kowloon Station. The good interchange available at HK Interchange, together with the fast service to Hong Kong Island, results in shorter travel times to both Hong Kong Island and to the Airport.
- 3.3.4 An assumption for the West Kowloon Station is that half the passengers will arrive by road as opposed to by rail. These road journeys will be predominantly to destinations in the southern Kowloon area and, as noted earlier, are likely to be affected by increasingly heavy traffic congestion. Faster overall journeys will be achieved from HK Interchange by adopting the feeder services.

- 3.3.5 Over 60% of the population will have a faster route across the Boundary with the Integrated Option than with the Government's West Kowloon Station Option. Only 5% will have a marginally longer journey.
- 3.3.6 With HK Interchange travellers from Tuen Mun, Tin Shui Wai and Yuen Long will find that a journey to Futian and Longhua is quicker than the alternative by bus to Lok Ma Chau and walking across the Boundary. The Integrated Option will this attract more travellers than Government's West Kowloon Station Option.

## **4. TRAIN OPERATIONS**

### **4.1 General**

- 4.1.1 Published reports indicate that the capacity of the Express Rail Link will be 20 trains per hour with about 80% as shuttle or short-haul trains and the remaining 20% as long-haul trains operating to destinations beyond Guangzhou. This allows for up to four long-haul trains an hour. Train scheduling is such that there would be a lay-over period before a long-haul train starts its return journey.
- 4.1.2 Government's West Kowloon Station is remote from any location where a long-haul train can be stabled and the journey from the station to the stabling area at Shek Kong would occupy valuable train paths on the main line thus reducing the capacity for trains in service. Stabling of long-haul trains must therefore be done at West Kowloon station thereby occupying space which cannot be used for another train. The West Kowloon station is thus larger than it need be for passenger operations as it must also provide space for stabling trains.
- 4.1.3 The HK Interchange Station does not suffer from this problem, in that a train can be stabled and serviced away from the station at the depot to the south. HK Interchange Station can thus be smaller, and with less tracks and platforms, than the West Kowloon Station while still having equivalent capacity.
- 4.1.4 The servicing a long-haul train outside of the station reduces the need for tracks and platforms in the station and six tracks would be adequate within the station. This arrangement of servicing the trains outside of the station will also enable the emptying of toilets, an operation not favoured while the train is in a station.
- 4.1.5 With 16 short-haul or shuttle trains an hour, four platform tracks would be sufficient given that alighting and boarding will take place on opposite sides of the trains. Even so each track would only be used on average for four trains in an hour which represents a low usage rate for a rail terminus.

## **5. DEPOT AND EMERGENCY RESCUE CENTRE**

### **5.1 Purpose**

- 5.1.1 For the Government's West Kowloon Station Option the length of the tunnel between Futian and West Kowloon is such that an intermediate Emergency Rescue Centre is required and this has been located at Choi Yuen Village requiring the resumption of the entire village.



- 5.1.2 For the Integrated Option there is no need for an intermediate Emergency Rescue Centre as the distance from Futian to HK Interchange is about one third of that to West Kowloon.
- 5.1.3 The Integrated Option, like the West Kowloon Station Option, requires a depot to service the Express Rail Link south of the Boundary and to provide inspection and basic maintenance for trains serving HK Interchange.
- 5.1.4 The depot at Shek Kong for the West Kowloon Station Option includes facilities to maintain the permanent way, overhead line and other fixed infrastructure as there is no link from that line to any of the other Hong Kong rail lines. For the Integrated Option a simple connection into the West Rail Pat Heung Depot would allow for equipment sharing thus obviating the need for separate facilities.
- 5.1.5 This allows for more efficient use of equipment and reduces the land required for the depot for the Integrated Option as compared to that required for the West Kowloon Station Option.

## **5.2 Depot for the Integrated Option**

- 5.2.1 There are a number of options for the depot for the Integrated Option and the one selected at this stage is at the head of the Kam Tin Valley adjacent to the Route 3 Tsing Long Highway. From HK Interchange station, the connecting tracks would follow the perimeter of the West Rail facilities thus facilitating the service connection into the Pat Heung Depot. To the south of Pat Heung Road the connection to the depot would follow the boundary to the Route 3 Tsing Long Highway.
- 5.2.2 The depot would have 8 stabling tracks each of 520 metres in length and 4 adjacent covered running maintenance tracks each of 480 metres in length. This will allow for basic servicing such as internal cleaning, replenishment of the restaurant facilities and the emptying of the toilets.
- 5.2.3 These facilities, together with the necessary buildings and plant rooms for the operation of the depot, can be accommodated within a site of about 100 metres in width.

## **6. RESUMPTION**

### **6.1 West Kowloon Station Option**

- 6.1.1 The major resumption for the Government's West Kowloon Station Option is at Choi Yuen Village which requires the resumption of an entire village with active farming activities. Other resumption is required for ventilation buildings at a few strategic locations along the route.

### **6.2 Integrated Option**

- 6.2.1 With the Integrated Option Choi Yuen Village is not affected and can remain.
- 6.2.2 The site for the HK Interchange Station is already Government land and minimal resumption is envisaged for the Express Rail Link from the north.

- 6.2.3 There will be some resumption of private land to the south for the Depot and the connecting line and for the parallel HK Island Express but all indigenous villages will be avoided.

## **7. PROGRAMME**

### **7.1 West Kowloon Station Option**

- 7.1.1 Planning, design and administrative procedures are already well advanced for the West Kowloon Station Option.

- 7.1.2 However there is still a high risk that the magnitude of the construction work will not enable the scheduled completion by 2015.

### **7.2 Integrated Option**

- 7.2.1 The work to construct the Express Rail Link for the Integrated Option is substantially less than that for the West Kowloon Station Option and the work for the HK Island Express can be undertaken in parallel as they are completely separate geographically.

- 7.2.2 For the Integrated Option an Environmental Impact Assessment will have to be undertaken and the route gazetted, thus giving a later date for the start of construction than for the West Kowloon Station Option.

- 7.2.3 Due to the reduced extent of work for the Express Rail Link with the Integrated Option, compared with that for the West Kowloon Station Option, completion by 2015 would be achievable provided that there is a "Will to Succeed" by both Government and the MTRC with a commensurate shortening of the time they normally take for their administrative procedures.

- 7.2.4 The approximate times required are:

- Design, EIA and gazetting 1.5 Years
- Civil Construction 3 Years
- Systems / Architectural 1 Year
- Contingency 0.5 Years

This would give completion in 2015 with a low risk of the construction taking longer than scheduled.

## **8. COSTS**

### **8.1 West Kowloon Station Option**

- 8.1.1 The costs for Government's West Kowloon Station Option have been reported to be \$63Bn, even though there is a possibility that the final estimate may be depressed to around \$50Bn by delaying certain works or shifting some costs to adjacent projects.

### **8.2 Integrated Option**

- 8.2.1 The estimate of the full cost for the Integrated Option is \$25Bn, made up of \$14Bn for the Express Rail Link, \$7Bn for the HK Island Express and with an allowance of \$4Bn for land resumption.

- 8.2.2 The land at West Kowloon earmarked for the West Kowloon Station, can be sold for development for a much higher price than with the restriction imposed by being above a major station. The enhanced revenue from the sale of this site could be used to offset the cost of the Integrated Option. The value of the site is already enhanced by the proximity of Kowloon and Austin Stations and would not be further enhanced by the Express Rail Link.

## **9. ADVANTAGES OF THE ALTERNATIVE INTEGRATED OPTION**

### **9.1 Cheaper**

- 9.1.1 The cost of Government's West Kowloon Station Option, which includes the cost of the West Kowloon Station and the Shek Kong Emergency Rescue and Depot facilities is currently \$63Bn. A major portion of this cost is the West Kowloon Station attributed to its depth and location with its deep cut-and-cover approach tunnels.
- 9.1.2 These high cost items are avoided by the Integrated Option, giving an estimated cost for the Integrated Option as \$25Bn, less than half.

### **9.2 Faster**

- 9.2.1 Over 60% of the population will have a faster route across the Boundary with the Integrated Option than with the Government's West Kowloon Station Option. Only 5% will have a marginally longer journey.

### **9.3 Quicker**

- 9.3.1 There is a high risk that the construction of the tunnels to West Kowloon and the station at West Kowloon cannot be achieved by the due date.
- 9.3.2 The construction works for the Integrated Option is significantly less than that for Government's West Kowloon Station Option and the risk of programme overruns is significantly less, thus giving a better assurance that the overall completion date can be met.

### **9.4 Better**

- 9.4.1 The Integrated Option is Cheaper, provides Faster travel for the majority of the Hong Kong population and visitors, is Quicker to construct thus making it Better than Government's West Kowloon Station Option.

Annex 1: Comparison between Integrated Option and West Kowloon Option

	West Kowloon Option	Integrated Option
Construction Cost	\$ 63 Bn	\$25 Bn
Journey Time	Only faster for 0.4 million HK residents	Faster for 4.2 million HK residents
Construction Time	Target Completion 2015; High risk of delay	Target Completion 2015; Early completion possible
Service Mode	Boarding at West Kowloon Station only	Airport-style service: check-in at HK Station and Kowloon Station, then boarding at Kam Sheung Road
Train Fare	Higher due to higher capital cost and expensive running costs requiring remote stabling	Lower due to lower capital cost and lower running costs with nearby stabling
Road Traffic	5-year construction disruption at Jordan/TST area; High Risk of road congestion at West Kowloon during operation	No disruption at urban area; No risk of road congestion during operation
Land Resumption	Resumption of Choi Yuen Village at Shek Kong	Resumption of Choi Yuen Village not required; land resumption for depot needs not cover any major village
Tourist benefits	From airport to boundary via West Kowloon Station: 67 minutes	From airport to boundary via HK Interchange Station: 55 minutes
Station Interchange	12 minute walk between WK Station and Kowloon Station; up and down equivalent to 20 storeys	2 minute walk within integrated HK Interchange Station between platforms up and down equivalent to 4 storeys
Land utilisation	Occupies 14 hectares of land at West Kowloon, including that within the WKCD site; land sale delayed for at least 5 years	Land sale at West Kowloon can proceed at any time; full utilisation of government land next to KSR station
Patronage	Little attraction for NT residents and airport passengers	Higher patronage expected for NT residents, HK Island residents and airport passengers

Annex 2: Table showing beneficial population and journey time

<b>Whether the terminus of the Guangzhou-Shenzhen-Hong Kong Express Rail Link at Hong Kong Interchange (Kam Sheung Road) would bring about a Higher Level of Convenience for Population from Different Districts</b>					
<b>Districts</b>	<b>Population</b>	<b>From West Kowloon</b>	<b>From Hong Kong Interchange</b>	<b>Differences</b>	<b>Whether the Hong Kong Interchange Terminus would be More Convenient*</b>
Tuen Mun	495 700	67	37	-30	Yes
Yuen Long	538 600	54	24	-30	Yes
North	296 000	78	51	-27	Yes
Tai Po	288 600	69	61	-7	Yes
Sha Tin	608 300	54	56	2	Marginal
Sai Kung (including Tseung Kwan O)	414 300	77	74	-3	Marginal
Tsuen Wan	294 400	46	29	-17	Yes
Kwai Tsing (Kwun Chung + Tsing yi)	511 300	50	46	-4	Yes
Kwun Tong	577 300	67	68	1	Marginal
Wong Tai Sun	418 700	57	59	2	Marginal
Kowloon City	356 600	48	52	4	No
Yau Tsim Mong #	293 900	56 (Prince Edward)/38 (East Tsim Sha Tsui)	50 (Prince Edward)/ 42 (East Tsim Sha Tsui)	-6 (Prince Edward)/4 (East Tsim Sha Tsui)	Marginal/No
Sham Shui Po	361 600	56	48	-8	Yes
Islands (including Lantau)	148 900	67	52	-15	Yes
Airport	--	62	49	-13	Yes
Central and Western	261 600	46	42	-4	Yes
Wan Chai	160 300	56	52	-4	Yes
Eastern	593 500	76	72	-4	Yes
Southern	274 100	62	60	-2	Marginal

<b>Population who would be benefited from the Hong Kong Interchange Option</b>	<b>4 244 400</b>				
<b>Population who would be lose from the Hong Kong Interchange Option<sup>^</sup></b>	<b>446 600</b>				

**Total Population  
(Latest Statistics from C & SD: Year end 2008)**      **6 893 800**

**Percentage of the population who would be benefited**      **62%**

**Percentage of the population who would be marginally benefited/lose**      **33%**

**Percentage of the population who would lose**      **5%**

**\*Gain/Loss 3 minutes or above/below are considered as “marginal”**

**# The Yau Tsim Mong District include the 90 000+ residents living near the West Kowloon Station area, which will be benefited from the West Kowloon Option (41 minutes in the Kowloon Station Area if going by West Kowloon Station Option, and 45 minutes if they travel through the Hong Kong Interchange Option).**

**<sup>^</sup> Includes those living in Kowloon City and the 90 000+ residents living near the West Kowloon Station area, which will be benefited from the West Kowloon Option**

**Population Data Source: Census and Statistics Department, "Population and Household Statistics Analysed by District Council District 2008," (Hong Kong: Census and Statistics Department, March 2009)**

### Annex 3: Expert Working Group

Members of the Expert Working Group for this report include (in alphabetical order):

- Dr Hung Wing-tat (transport engineering)
- Ir Albert Lai Kwong-tak (infrastructure policy)
- Dr Leung Kai-chi (urban geography)
- Mr. Stanley Ng (town planning)
- Ms Pong Yuen-yee (town planning)
- Ir Ronald Taylor (railway development) \*
- Mr Paul Zimmerman (harbourfront development)

The Expert Working Group was supported by the Research Team of the Professional Commons.

\* Ir Ronald Taylor was joint author of First HK Railway Development Study in 1992, and advisor to Second HK Railway Development Studies in 2000. He has planned and designed infrastructure in Hong Kong for the past 30 years with the last 20 years actively involved on railway planning. He was a team member for the West Kowloon transport planning forming the basis of the current road system.

Annex 4: Maps





