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**Appendix C**  
**Traffic Review**

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# 1. Introduction

## 1.1 Objective

- 1.1.1 The Application Site is located in Planning Area 32C within the Hung Shui Kiu New Development Area (HSK NDA). The site falls within “Commercial (2)” (“C(2)”) under the current Hung Shui Kiu & Ha Tsuen (HSK & HT) Outline Zoning Plan (OZP) with various types of commercial use (e.g. office, retail, hotel, etc.) permitted as of right within this zone.
- 1.1.2 Under the current development proposal, the Applicant proposes to include ‘Flat’ use in this zone to form a mixed-use development (i.e. **Proposed Scheme**). As ‘Flat’ use is a Column 2 use under the OZP requiring planning permission from Town Planning Board (TPB), S.16 planning application is submitted for the proposed inclusion of residential element in the zone. This Traffic Review Report is prepared in support of the S.16 planning application by reviewing the vehicular access arrangement and internal transport provisions of the Proposed Scheme, and comparing the Proposed Scheme with the as-of-right permitted commercial scheme to assess the potential traffic impact (if any) of the project.

# 2. PROPOSED DEVELOPMENT

## 2.1 Development Schedule

- 2.1.1 For the purpose of assessment, the as-of-right permitted commercial scheme (or known as **Hypothetical Development Scheme**) is formulated based on the commercial mix suggested in the previous version of the HSK & HT Outline Development Plan (ODP) (i.e. No. D/HSK/1) for the Application Site. The relevant information is provided in **Table 2-1**.

**Table 2-1 - Hypothetical Development Schedule**

| Area 32C      |   |
|---------------|---|
| Retail (~20%) | 28,005 m <sup>2</sup> GFA                               |
| Office (~50%) | 70,012 m <sup>2</sup> GFA                               |
| Hotel (~30%)  | 42,007 m <sup>2</sup> GFA (~1,025 rooms) <sup>(1)</sup> |
| <i>Total</i>  | <i>140,024 m<sup>2</sup> GFA</i>                        |

Remark:

<sup>(1)</sup> Based on 40.98 m<sup>2</sup> for each hotel room

2.1.2 Under the **Proposed Scheme**, majority (80%) of the total PR / GFA permissible for the site would be designated for the as-of-right permitted commercial use (i.e. 112,019 m<sup>2</sup> NGFA), whereas the remaining (20%) permissible PR / GFA would be used for the proposed residential development (i.e. 28,005 m<sup>2</sup> DGFA). The proposed residential use would be clustered in the south-eastern portion of the site (Site A), whereas the remaining portion of the site (Site B) would be used for commercial purpose (e.g. office and hotel) without any residential element. The development schedule of the Proposed Scheme is shown in **Table 2-2**.

**Table 2-2 - Proposed Development Schedule**

| Development Parameters      | Area 32C Site A       | Area 32C Site B  |
|-----------------------------|-----------------------|--|
| Site Area                   | 7,089 m <sup>2</sup>  | 10,414 m <sup>2</sup>  |
| <b>Domestic Portion</b>     |                       |  |
| Domestic GFA                | 28,005 m <sup>2</sup> | -  |
| No. of Residential Towers   | 2                     | -  |
| No. of Units                | 590                   | -  |
| Average Flat Size           | ~47 m <sup>2</sup>    | -  |
| <b>Non-domestic Portion</b> |                       |  |
| Non-Domestic GFA            | -                     | Hotel – 67,211 m <sup>2</sup><br>(~ 1,640 rooms) <sup>(1)</sup><br>Office – 44,808 m <sup>2</sup> <sup>(2)</sup> |

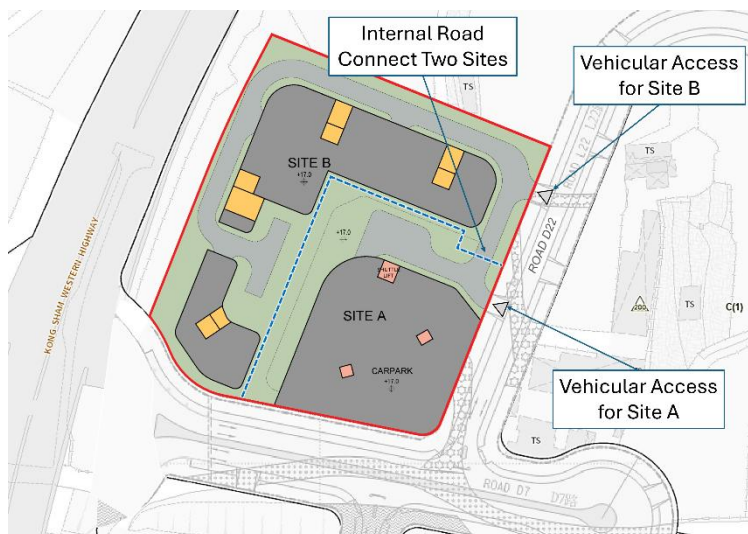
Remark:

<sup>(1)</sup> Based on 40.98 m<sup>2</sup> for each hotel room

<sup>(2)</sup> Around 40% of the total non-domestic GFA in Area 32C will be implemented at the later stage

## 2.2 Development Access

2.2.1 As indicated in the Outline Development Plan and the Road Gazette Plan, two vehicular access would be provided to serve Area 32C. As shown in **Drawing 2.1**, both the development access for Site A and Site B would be located at Road L22. The internal road on the two sites would be connected to get allow more flexibility.



**Drawing 2.1 - Vehicular Accesses**

## 2.3 Internal Transport Facilities

2.3.1 The parking and loading / unloading facilities of the proposed development will be provided in accordance with the requirements as stipulated in the latest Hong Kong Planning Standards and Guidelines (HKPSG). The respective requirements are summarized in **Table 2-3**.

**Table 2-3 - HKPSG Parking and Servicing Facilities Provision Requirements**

| <b>HKPSG Requirements</b>                                      |   |
|--|---|
| <b>Private Car Parking Spaces</b>                              |   |
|  | GPS x R1 <sup>(1)</sup> x R2 <sup>(2)</sup> x R3 <sup>(3)</sup>   |
| <b>Private Housing –</b><br>Private Car Parking Spaces         | For 40 m <sup>2</sup> < flat size ≤ 70 m <sup>2</sup><br>= 1 space per 4 – 7 flats x 1.2 x 0.75 x 1<br>= 0.9 spaces per 4 – 7 flats                                 |
| <b>Private Housing –</b><br>Visitor Private Car Parking Spaces | 5 spaces per block  |
| <b>Hotel –</b><br>Private Car Parking Spaces                   | 1 car space per 100 rooms   |
| <b>Office –</b><br>Private Car Parking Spaces                  | For the first 15,000m <sup>2</sup> GFA, 1 car space per 150 – 200 m <sup>2</sup> GFA. Above 15,000 m <sup>2</sup> GFA, 1 car space per 200 – 300 m <sup>2</sup> GFA |
| <b>Motorcycle Parking Spaces</b>                               |   |
| <b>Private Housing –</b><br>Motorcycle Parking Spaces          | 1 space per 100 – 150 flats   |
| <b>Hotel –</b><br>Motorcycle Parking Spaces                    | 5% – 10% total provision for private cars   |
| <b>Office –</b><br>Motorcycle Parking Spaces                   | 5% – 10% total provision for private cars   |
| <b>Loading and Unloading Bays</b>                              |   |
| <b>Private Housing –</b><br>Loading and Unloading Bay          | 1 space for every 800 flats subject to min. 1 bay per block   |
| <b>Hotel –</b><br>Loading and Unloading Bay                    | 0.5 – 1 loading / unloading bays for goods vehicles per 100 rooms   |
| <b>Office –</b><br>Loading and Unloading Bay                   | 1 loading / unloading bay for goods vehicles for every 2,000 to 3,000 m <sup>2</sup> or part thereof, GFA   |
| <b>Lay-bys</b>   |   |
| <b>Hotel –</b><br>Taxi / Private Cars Lay-by                   | 4 lay-bys for taxis and private cars for ≥ 600 rooms  |
| <b>Hotel –</b><br>Single-Deck Tour Buses Lay-by                | 3 lay-bys for single-deck tour buses for ≥ 900 rooms  |
| <b>Office –</b><br>Taxi / Private Cars Lay-by                  | 1 lay-by for taxis and private cars for every 20,000 m <sup>2</sup> or part thereof, GFA  |

## HKPSG Requirements

### ***Bicycle Parking Spaces***

**Private Housing –  
Bicycle Parking Spaces**

1 space per 15 flats with flat size smaller than 70 m<sup>2</sup>

Remark:

- (<sup>1</sup>) For 40 m<sup>2</sup> < flat size ≤ 70 m<sup>2</sup>, and R1 of 1.2 is adopted  
 (<sup>2</sup>) An accessibility adjustment ratio (R2) of 0.75 has been adopted with the site falling into the 500 m radius of future Hung Shui Kiu MTR Station.  
 (<sup>3</sup>) The site area of Site A is 7,089 m<sup>2</sup>. With domestic GFA of 28,005 m<sup>2</sup> provided with equivalent domestic plot ratio of 3.95 for the Site A, a development intensity adjustment ratio (R3) of 1 is adopted.

2.3.2 Taken into consideration the proximity / convenience for access to public transport services (excluding rail) and the availability of public car-parking spaces, a Global Parking Standard (GPS) of 6 is proposed for the residential development. In light of the HKPSG requirements given in **Table 2-3**, the proposed provisions for the Area 32C Site A and Site B (before the implementation of 44,808 m<sup>2</sup> office GFA) are summarized in **Table 2-4**. The proposed provisions for the Area 32C Site A and Site B (after the implementation of 44,808 m<sup>2</sup> office GFA at the later stage) are summarized in **Table 2-5**.

**Table 2-4 - Proposed Internal Transport Facilities Provisions  
(Before the implementation of 44,808 m<sup>2</sup> office GFA in Site B)**

| Area            | Land Use    | Parameter   | Type                                      | Required Provision | Proposed Provision (GPS = 6) |                    |
|-----------------|-------------|-------------|---|--------------------|------------------------------|--------------------|
| 32C<br>(Site A) | Residential | 590 units   | Residential Parking Space                 | 40<Flat Size≤70    | 76 - 133                     | 89                 |
|                 |             |             | Visitors' Parking Space                   |                    | 10                           | 10                 |
|                 |             | 590 units   | Motorcycle Parking Space                  |                    | 4 - 6                        | 6 ( <sup>1</sup> ) |
|                 |             |             | Loading / Unloading Bay                   |                    | 2                            | 2                  |
|                 |             |             | Bicycle Parking Space                     |                    | 40                           | 40                 |
|                 |             |             | Car Parking Space                         |                    | 17                           | 17                 |
| 32C<br>(Site B) | Hotel       | 1,640 rooms | Motorcycle Parking Space                  |                    | 1 - 2                        | 2 ( <sup>2</sup> ) |
|                 |             |             | Loading / Unloading Bay for Goods Vehicle |                    | 9 - 17                       | 9 ( <sup>3</sup> ) |
|                 |             |             | Lay-by for taxi and private car           |                    | 4                            | 4                  |
|                 |             |             | Lay-by for single-deck tour buses         |                    | 3                            | 3                  |

Remark:

- (<sup>1</sup>) Based on 1 motorcycle space per 100 flats  
 (<sup>2</sup>) Based on 10% total provision for private car  
 (<sup>3</sup>) Based on 0.5 loading bay per 100 rooms

**Table 2-5 - Proposed Internal Transport Facilities Provisions  
(After the implementation of 44,808 m<sup>2</sup> office GFA at the later stage)**

| Area            | Land Use              | Parameter                       | Type                                      | Required Provision | Proposed Provision (GPS = 6) |                  |
|-----------------|-----------------------|---------------------------------|---|--------------------|------------------------------|------------------|
| 32C<br>(Site A) | Residential           | 590 units                       | Residential Parking Space                 | 40<Flat Size≤70    | 76 - 133                     | 89               |
|                 |                       |                                 | Visitors' Parking Space                   |                    | 10                           | 10               |
|                 |                       | 590 units                       | Motorcycle Parking Space                  |                    | 4 - 6                        | 6 <sup>(1)</sup> |
|                 |                       |                                 | Loading / Unloading Bay                   |                    | 2                            | 2                |
|                 |                       |                                 | Bicycle Parking Space                     |                    | 40                           | 40               |
| 32C<br>(Site B) | Hotel                 | 1,640 rooms                     | Car Parking Space                         |                    | 17                           | 17               |
|                 |                       |                                 | Motorcycle Parking Space                  |                    | 1 - 2                        | 2 <sup>(2)</sup> |
|                 |                       |                                 | Loading / Unloading Bay for Goods Vehicle |                    | 9 - 17                       | 9 <sup>(3)</sup> |
|                 |                       |                                 | Lay-by for taxi and private car           |                    | 4                            | 4                |
|                 |                       |                                 | Lay-by for single-deck tour buses         |                    | 3                            | 3                |
| Office          | 44,808 m <sup>2</sup> | Car Parking Space               |   | 175 - 250          | 206 <sup>(4)</sup>           |                  |
|                 |                       | Motorcycle Parking Space        |   | 9 - 25             | 21 <sup>(2)</sup>            |                  |
|                 |                       | Loading / Unloading Bay         |   | 15 - 23            | 15 <sup>(5)</sup>            |                  |
|                 |                       | Lay-by for taxi and private car |   | 3                  | 3                            |                  |

Remark:

<sup>(1)</sup> Based on 1 motorcycle space per 100 flats

<sup>(2)</sup> Based on 10% total provision for private car

<sup>(3)</sup> Based on 0.5 loading bay per 100 rooms

<sup>(4)</sup> For the first 15,000 m<sup>2</sup> GFA, based on 1 car space per 175 m<sup>2</sup> GFA. Above 15,000 m<sup>2</sup> GFA, based 1 car space per 250 m<sup>2</sup> GFA

<sup>(5)</sup> Based on 1 loading bay per 3,000 m<sup>2</sup> GFA

## 3. Traffic Impact

### 3.1 Trip Generation

3.1.1 To compare the development traffic generations between the Proposed Scheme and the Hypothetical Scheme, references were made to the trip generation and attraction rates as stipulated in Annex C of Transport Planning and Design Manual (TPDM) Volume 1 Chapter 3 published by Transport Department. The adopted trip rates are presented in **Table 3-1**.

**Table 3-1 - Trip Generation and Attraction**

| Land Use   | Unit               | Trip Rate |        |         |        |
|--|--------------------|-----------|--------|---------|--------|
|  |                    | AM Peak   |        | PM Peak |        |
|  |                    | Gen.      | Att.   | Gen.    | Att.   |
| Private Housing<br>(Flat Size = 50 m <sup>2</sup> ) <sup>(1)</sup> | pcu/hr/flat        | 0.0548    | 0.0335 | 0.0216  | 0.026  |
| Retail   | pcu/hr/100 sqm GFA | 0.2296    | 0.2434 | 0.31    | 0.3563 |
| Office   | pcu/hr/100 sqm GFA | 0.1703    | 0.2452 | 0.1573  | 0.1175 |
| Hotel  | pcu/hr/guest room  | 0.1329    | 0.1457 | 0.129   | 0.1546 |

Remark:

<sup>(1)</sup> Based on interpolation between flat size of 60 m<sup>2</sup> and 70 m<sup>2</sup>

3.1.2 Based on the proposed development schedule as given in **Table 2-2** and the hypothetical development schedule as given in **Table 2-1**, the estimated trips are presented in **Table 3-2**.

**Table 3-2 - Trip Generation and Attraction**

| Land Use                                      | Parameters            | Trip Generation / Attraction (pcus/hr) |      |            |      |
|---|-----------------------|--|------|------------|------|
|   |                       | AM Peak                                |      | PM Peak    |      |
|   |                       | Gen.                                   | Att. | Gen.       | Att. |
| <b>Proposed Scheme (A)</b>                    |                       |  |      |            |      |
| Area 32C (Site A)                             |                       |  |      |            |      |
| Private Housing                               | 590 units             | 32                                     | 20   | 13         | 15   |
| Area 32C (Site B)                             |                       |  |      |            |      |
| Office  | 44,808 m <sup>2</sup> | 76                                     | 110  | 70         | 53   |
| Hotel   | 1,640 rooms           | 218                                    | 239  | 212        | 254  |
| <i>Total (A) (two-way)</i>                    |                       | 695                                    |      | 617        |      |
| <b>Hypothetical Scheme (B)</b>                |                       |  |      |            |      |
| Area 32C (Sites A and B)                      |                       |  |      |            |      |
| Retail  | 28,005 m <sup>2</sup> | 64                                     | 68   | 87         | 100  |
| Office  | 70,012 m <sup>2</sup> | 119                                    | 172  | 110        | 82   |
| Hotel   | 1,025 rooms           | 136                                    | 149  | 132        | 158  |
| <i>Total (B) (two-way)</i>                    |                       | 708                                    |      | 669        |      |
| <b><i>Total (A) – Total (B) (two-way)</i></b> |                       | <b>-13</b>                             |      | <b>-52</b> |      |

3.1.3 As shown in **Table 3-2**, the traffic generations under the Proposed Scheme would be much lesser than the Hypothetical Scheme. Hence the traffic impacts imposed on the local road network under the Proposed Scheme would be much lesser and there should not be any insurmountable traffic impact imposed on the surrounding road network.

## 4. Conclusion

- 4.1.1 In light of findings of this traffic review, it is concluded that there is no insurmountable traffic impact imposed on the surrounding road network due to the proposed development. With all the transport facilities provided within the development sites in place, the proposed development under the Proposed Scheme is technically feasible in traffic terms.